The 51st Congress of the European Society for Surgical Research

May 25–28, 2016, Prague, Czech Republic

Guest Editors
Jiří Froněk, Prague
Jaroslav Chlupáč, Prague
Štěpán Malý, Prague
Tomáš Pantoflíček, Prague
Miroslav Ryska, Prague

Contents

Oral Presentations
3 Abstracts OP-1 – OP-112

Mini Oral Presentations
47 Abstracts MP-1 – MP-94

Video Presentations
82 Abstracts VP-1 – VP-16

E-Poster Presentations
88 Abstracts PP-1 – PP-143

The abstracts are available online, free of charge, under www.karger.com/esr_57_s1_2016

KARGER
The statements, opinions and data contained in this publication are solely those of the individual authors and contributors and not of the publisher and the editor(s). The appearance of advertisements in the journal is not a warranty, endorsement, or approval of the products or services advertised or of their effectiveness, quality or safety. The publisher and the editor(s) disclaim responsibility for any injury to persons or property resulting from any ideas, methods, instructions or products referred to in the content or advertisements.

Drug Dosage
The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

All rights reserved. No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher or, in the case of photocopying, direct payment of a specified fee to the Copyright Clearance Center (see 'General Information').

© Copyright 2016 by S. Karger AG, P.O. Box, CH–4009 Basel (Switzerland)
Background: Portal vein embolization (PVE) is used to increase future remnant liver volume in patients scheduled for major liver surgery. The bile salt-activated transcription factor farnesoid X-receptor (FXR) is a key mediator of bile salt generation following partial hepatectomy. The aim of this study was to evaluate the effect of a potent FXR agonist (obeticholic acid, OCA) on PVE-induced liver hypertrophy.

Material and Methods: Twenty-four rabbits (female, 2.9± 0.4kg) were given a daily oral gavage with OCA (10mg/kg) or vehicle starting 7 days pre-PVE until 7 days post-PVE of the cranial liver lobes. Effectiveness of the embolization procedure (coils, PVA particles) was confirmed by portography. Caudal liver volume (CLV) was analyzed by CT-volume tricht, the Netherlands

Result: CLVs were measured after 7 days. OCA had greater increase in CLV compared to controls. No differences at CLV increase were measured after 7 days. OCA had no effect on volume of the atrophic cranial lobes at the respective time points. Likewise, OCA did not cause spontaneous liver growth, as liver volume before PVE was proportional to body weight increase over the days before PVE.

Conclusion: Obeticholic acid accelerated liver regeneration in a rabbit model of PVE by 2.0-fold over the first 3 days. The ultimate increase in CLV is the same in both groups. OCA treatment has potential in extending resectability as well as the prevention of postoperative liver failure.
Sex steroid hormone receptors in malignant pleural mesothelioma—clinicopathological analysis and effects on tumour cell growth
Hironori Ishibashi a, Takashi Suzuki b, Satoshi Suzuki c, Hironobu Sasano d

a Department of Thoracic Surgery, Tokyo Medical and Dental University, Tokyo, Japan; b Department of Pathology and Histotechnology, Tohoku University School of Medicine, Sendai, Japan; c Department of Thoracic Surgery, Japanese Ishinomaki Red Cross Hospital, Ishinomaki, Japan; d Department of Anatomic Pathology, Tohoku University Graduate School of Medicine, Sendai, Japan

**Background:** Female sex has been identified as a positive prognostic factor for malignant mesothelioma; yet, the role of sex steroid hormones has not been studied. Our goal was to investigate the expression of sex steroid hormones in malignant mesothelioma and their correlations with clinicopathological parameters, and tumour cell growth induced by sex steroid hormones. **Material and Methods:** A retrospective study of 30 patients who underwent biopsy or surgery at Tohoku University Hospital between 1995 and 2003 was performed. We examined the expression of sex steroid receptors for oestrogen (ER), progesterone (PR), and androgen (AR), and correlated these findings with various clinicopathological parameters. Tumour cell growth tests with sex steroid hormones were performed by using primary cell cultures. **Result:** The percentage of immuno-positive cases were ER, 89%; PR, 77%; and AR, 54%, respectively. ER was significantly positive in males (p = 0.034). ER and PR were significantly positive in the epithelial type (p = 0.001), and immunoreactivities were inversely correlated with clinical stage (p = 0.001) and Ki-67 LI (p < 0.0001). AR was significantly positive in males (p = 0.001) and sarcomatous type (p = 0.001), and AR immunoreactivity was positively correlated with clinical stage (p = 0.023) and Ki-67 LI (p < 0.0001). Oestrogen and progesterone inhibit cell proliferation in proportion to the concentration of estradiol and progesterone (p < 0.001). **Conclusion:** ER, PR, and AR are expressed in malignant mesothelioma and related to sex, clinical stage, and pathological cell type. Oestrogen and progesterone may be effective in the treatment of malignant mesothelioma.

Can Circulating Melanoma Cells be Detected in the Blood of Patients with Melanoma?
Carolyn Hall, Merrick Ross, Mandar Karhade, Jessica Bowman Bauldry, Lily Valad, Joshua Upshaw, Richard Royal, Anthony Lucci

University of Texas MD Anderson Cancer Center, Houston, United States

**Background:** Novel prognostic markers are needed to predict disease progression in cutaneous melanoma. While limited data suggests prognostic significance for circulating melanoma cells (CMCs), there is a need for a sensitive, reproducible, and standardized identification technique. Using a semi-automated technology, we sought to determine whether CMCs could be identified and if their presence correlated with advancing stage of disease. **Material and Methods:** CMCs were measured (7.5cc of blood) in patients with stage II-IV melanoma (n=326) using the CellSearch® system (Janssen Diagnostics, USA). CD146+ cells were immunomagnetically enriched and CMCs were identified as CD146+, HMW-MAA+, CD45-, and CD34+. The presence of CMCs was correlated with known prognostic factors in melanoma. **Result:** Median age was 57 years. Our study cohort included 30 stage II, 232 stage III, and 64 stage IV patients. One or more CMCs was detected in 109/326 (34%) of all patients. Of patients with CMCs, 63 (19%) had one CMC, 28
(9%) had two CMCs and 18 (6%) had three or more CMCs. The presence of CMCs in the blood was not associated with pathologic stage (33%, 31%, 42% CMC positivity, stages II, II, IV, respectively, P=0.25), mitotic index (P=0.84), or ulceration (P=0.83). Our preliminary data suggests that CMCs are prognostically relevant in advanced stage patients. **Conclusion:** This is the largest study to date demonstrating that CMCs can be reliably identified in 30% of melanoma patients. These data support further study with longer follow-up and longitudinal/serial time points to better assess the significance of CMCs in melanoma patients.

---

**OP-7**

**Does Affectation of paraaortic Lymph Nodes Contraindicate Pancreatic Resection in Cancer of the Pancreatic Head?**

Mercedes Cabrera, Javier Larrea, Yurena Caballero, Gabriel Garcia-Plaza, Antonio Navarro, Jose Lopez, Juanramon Hernández

General Surgery Department, Complejo Hospitalario Universitario Insular-Materno Infantil de Gran Canaria, Las Palmas de Gran Canaria, Spain

**Background:** Cancer of the pancreatic head has a poor prognosis. Lymph node affection reduces survival rate, and paraaortic lymph node affection is an advanced disease considered by some authors to be contraindicated in resection. We believe that its affection is a factor in poor prognosis, but does not necessarily contraindicate surgery.

**Material and Methods:** A sample of 55 patients who underwent surgery in our HBP unit were studied. A prospective study with deferred biopsy of paraaortic lymph node as well as its impact on survival was carried out. **Result:** The sample included 33 males and 22 females. The average age was 55 ±11.12 years. Four total pancreatectomies were carried out (7.3%), 33 duodenopancreatectomies (60%) and 18 exploratory laparotomies and/or palliative treatments (32.7%). Six patients with survival of less than 60 days were removed from the study, leaving 49. Of those patients, 15 (30.6%) were not resected, with an average survival rate of 6.1 months, 34 (69.9%) were resected with an average survival of 27.2 months. -χ²= 26.4, -p<0.001-. Of the 34 resected patients, 32 valid paraaortic lymph node samples were obtained (94.1%). In 23 cases, the biopsy was negative with an average survival of 29.2 months, and in 9 positive cases there was an average survival of 23.1 months -χ²= 0.41 n.s. **Conclusion:** Although lymph node affection is a factor in poor prognosis, affection of paraaortic lymph nodes should not contraindicate surgical resection.

---

**OP-6**

**Possible effects of thymoquinone, zeolite and platelet rich plasma on the healing of ischemic colonic anastomosis on rats**

Foruk Pehlivanli a, Gokhan Karaca a, Oktay Aydin a, Canan Altunkaya b, Ibrahim Tayfun Sahiner c, Huseyin Ozden a, Hafize Uzun b, Mevlut Recep Pekcici d

a Assistant Professor, Kirikkale University, Faculty of Medicine, Department of General Surgery, Kirikkale, Turkey; b Assistant Professor, Kirikkale University, Faculty of Medicine, Department of Pathology, Kirikkale, Turkey; c Assistant Professor, Hhit University, Faculty of Medicine, Department of General Surgery, Corum, Turkey; d General Surgeon, Alaca State Hospital, Department of General Surgery, Corum, Turkey; e Professor, Istanbul University, Department of Biochemistry, Istanbul, Turkey; f Associate Professor, Ankara Training and Research Hospital, Department of General Surgery, Ankara, Turkey

**Background:** Thymoquinone, zeolite and platelet rich plasma (PRP) have known antioxidative and antiinflammatory effects. We aimed to investigate the effectiveness of these substances on the healing of ischemic colonic anastomosis. **Material and Methods:** 55 wistar type male rats were divided into five groups as sham, control, thymoquinone, zeolite and PRP groups. In the sham group only full thickness colonic anastomosis was performed. In the other groups, a full thickness colonic anastomosis was performed after the 20 minutes clamping of superior mesenteric artery to achieve ischemia. Then zeolite and thymoquinone were applied 2mg/1ml saline locally onto the anastomosis in their groups. PRP was applied as 1ml locally. All the rats were sacrificed in the 10th day. Inflammation, reepithelization and ischemic necrosis levels were evaluated pathologically. Levels of TNF-α, interleukin 1 (IL 1) and tissue hydroxy proline (OHP) levels were measured as the indicators of inflammation and tissue healing. Bursting pressure was measured as the mechanical indicator of healing. **Result:** OHP levels were not different between the groups. Bursting pressure was higher in the thymoquinone group than the control group. Reepithelization was higher than the zeolite group in the sham and thymoquinone groups. TNF-α and IL 1 levels were significantly higher in the sham group than all the other groups. TNF-α and IL 1 levels were also significantly higher in the thymoquinone, zeolite and PRP groups than the control group and higher in the thymoquinone group than the zeolite and PRP groups. **Conclusion:** Thymoquinone was found to be more effective on the healing of ischemic colonic anastomosis compared to zeolite and PRP.
Background: FOLFIRINOX prolongs survival in patients with metastatic pancreatic cancer and may also benefit patients with LAPC. Furthermore, it may convert a substantial number into resectable tumors. Previous studies combined patients with LAPC and borderline resectable pancreatic cancer, which hampers the interpretation of outcomes with FOLFIRINOX in LAPC. The aim of this review was to provide an overview of the (R0) resection rate and clinical outcomes after FOLFIRINOX-based therapy for locally advanced pancreatic cancer (LAPC). Material and Methods: PubMed, Embase and the Cochrane library were systematically searched for studies published up to August 31st, 2015. Primary outcome was the (R0) resection rate. Result: Fourteen studies involving 365 patients with LAPC were included. A modified chemotherapy regimen was described in 3 studies and FOLFIRINOX dose reductions in up to 65% of patients. Radiotherapy was given in 57% of all patients. Total resection rate was 28% (77% R0) with a peri-operative mortality of 3%. Median overall survival ranged from 8.9 to 25.0 months. Median survival after resection was 24.9 months, based on one study. Six out of 85 (7%) resection specimens with available data showed a complete pathologic response. Grade 3-4 toxicity occurred in 23% of patients. Data of patients treated with FOLFIRINOX without radiotherapy were available from 292 patients: resection rate was 12% (70% R0) with 15.7 months median overall survival and 19% grade 3 to 4 toxicity. Conclusion: FOLFIRINOX-based treatment for patients with LAPC seems safe and achieves high (R0) resection rates and overall survival, despite the frequent administered modified regimes and dose reductions during treatment.

Background: Early stage non-functioning pancreatic neuroendocrine tumors (NF-pNETs) are diagnosed more often due to improved recognition and imaging. Surgical resection is the preferred treatment, but recurrence still occurs frequently. Aim of this study is to predict recurrence after resection in order to identify patients at risk that might benefit from intense follow-up or adjuvant treatment. Material and Methods: Retrospectively patients with curative resection NF-pNET of two institutions were included. Distant metastasis, hereditary syndromes and grade 3 tumors were excluded. Recurrence was defined as local tumor recurrence, lymph node- or distant metastasis. Independent predictors were identified with multivariable Cox regression. Based on hazard ratios a nomogram was developed to predict recurrence within 5-years. External validation with a retrospective cohort from a third center was performed using Harrell’s concordance index. Result: Recurrence was seen in 24% of 97 patients with grade 1 or 2 NF-pNET. Independent predictors were positive lymph nodes, perineural invasion and tumor size >2cm. These characteristics scored 3, 5 or 11 points respectively on the nomogram. High risk patients had a nomogram score of >14 as this cutoff showed 50% recurrence within 5 years. External validation was performed with 144 patients of which 11% had recurrence. The c-statistic of 0.69 (CI95% 0.54 – 0.83) indicated that the ability to separate patients who will develop recurrence is reasonable. Conclusion: Positive lymph nodes, perineural invasion and tumor size >2cm predict recurrence after curative resection of grade 1 and 2 NF-pNET. Patients with a nomogram score of >14 are at risk and a more intense follow-up can be recommended.

Background: In radical pancreatic surgery, reconstruction of the portal vein using autologous vein graft interposition
is sometimes necessary. External iliac vein (EIV) has been used for this purpose because its diameter is well fitted for the portal vein. However, harvesting the EIV is associated with severe venous congestion and edema in the affected lower extremity, considerably deteriorates patient’s activities of daily living and elongates hospitalization. To prevent this unfavorable consequence, we have reconstructed the EIV using a ringed ePTFE graft with a help of postoperative anticoagulation therapy. In this study, we retrospectively evaluated a clinical significance of this method.

Material and Methods: Twelve patients with pancreatic or bile duct cancer were enrolled. We evaluated 1) size and length of the ePTFE graft, 2) patency of the ePTFE graft, 3) circumference of the thigh, and 4) presence of graft infection. Result: 1) 8mm grafts were used in 3 patients and 10mm in 8 patients. The length of the ePTFE graft was 4.4 ± 0.5cm. 2) Patency of the graft was kept in 83.3% (10 of 12) patient and obstruction was encountered only in 2 patients having a decent excuse. 3) Circumference of the right and left thigh was not different in patients with good patency, but there observed obvious difference in the two patients with obstruction (9.8cm and 8.3cm). 4) Graft infection didn’t occur in any patients. Conclusion: Reconstruction of the EIV by ePTFE graft seems to be feasible option for preventing the congestion and swelling of the lower extremity.

OP-11 Multimodality treatment of 132 consecutive patients with locally advanced pancreatic cancer

Jantien a Vogel, Thij de Rooij, Krijn P Van Lienden, Johanna W Wilmink, Hanneke W Van Laarhoven, Jeanin E Van Hooft, Otto M Van Delden, Marcel G Dijkstra, Robert C Martin, Olivier R Busch, Marc G Besseling

a Department of Surgery, Academic Medical Center, Amsterdam, the Netherlands; b Department of Radiology, Academic Medical Center, Amsterdam, the Netherlands; c Department of Medical Oncology, Academic Medical Center, Amsterdam, the Netherlands; d Department of Gastroenterology, Academic Medical Center, Amsterdam, the Netherlands; e Clinical Research Unit, Academic Medical Center, Amsterdam, the Netherlands; f Department of Surgery, University of Louisville, Louisville, United States

Background: Locally advanced pancreatic cancer (LAPC) has a poor prognosis. Recent studies report promising outcomes after FOLFIRINOX and irreversible electroporation (IRE) (resection-rates > 20% (FOLFIRINOX), median overall survival (OS) > 20 months (FOLFIRINOX/IRE)). However, they do not report on combined strategies in a prospective full cohort of LAPC, but only include patients with stable disease under chemotherapy. Our aim was to describe outcomes of multimodality treatment with FOLFIRINOX-chemotherapy, surgical exploration and IRE in a complete LAPC-cohort.

Material and Methods: Prospective single-center cohort (09.2013-03.2015), including all consecutive histologically proven LAPC-patients (>90°arterial or >270°venous involvement). Preferred chemotherapy consisted of FOLFIRINOX, or, if unbearable, gemcitabine. Radiotherapy was only used for local pain control. After three months, restaging was performed to assess RECIST1.1-response, radiological resectability and IRE-eligibility (tumor ≤ 5cm). All patients with non-progressive disease (RECIST) and IRE-eligible tumors underwent explorative laparotomy. Result: Of 132 LAPC-patients, 70% (n=93) received chemotherapy (65% (n=60) FOLFIRINOX). After 3 months, 45% (n=59/132) were non-progressive, 27% (n=36/132) underwent surgical exploration, resulting in 11% (n=14/132) resections and 11% (n=15/132) IREs. After surgical exploration, the Clavien-Dindo grade ≥3 complication-rate was 39% (resection (6/14), IRE (7/15), palliative surgery (1/7)) and 90-day-mortality 11% (resection (1/14), IRE (2/15), palliative surgery (1/7)). Total OS and 1-year cumulative survival from diagnosis were 11 months and 43% respectively for all, 19 months and 71% for non-progressive patients, 23 months and 82% in resected patients, and 16 months and 71% in IRE-patients, with a median follow up of 10 months. Conclusion: A multimodality approach to LAPC-patients was feasible with acceptable outcomes. This study highlights the importance of outcome reporting of consecutive rather than selected cohorts of LAPC-patients.

OP-12 A patient-level meta-analysis of FOLFIRINOX for locally advanced pancreatic cancer


a Erasmus Medical Center, Rotterdam, the Netherlands; b Erasmus Medical Center, Rotterdam, the Netherlands; c Memorial Sloan Kettering Cancer Center, New York, United States; d Erasme Brècler Hospital, Assistance publique-Hôpitaux de Paris (AP-HP), Paris, France; e Massachusetts General Hospital, Boston, United States; f Lee Moffitt Cancer Center & Research Institute, Tampa, Florida; g Emory University, Atlanta, United States; h Washington University School of Medicine, Saint Louis, United States; i Yale Cancer Center, New Haven, United States; j University of Kentucky/ Markey Cancer Center, Lexington, United States; k The Royal Marsden NHS Foundation Trust, London & Surrey, United Kingdom; l Institut de Cancérologie de Lorraine et Lorraine University, Vandoeuvre-lès-Nancy Cedex, France; m Paracelsus Medical University of Salzburg, Salzburg, Austria; n Georges Pompidou European Hospital, Assistance publique-Hôpitaux de Paris (AP-HP), Paris, France; o, P. Lee Moffitt Cancer Center & Research Institute, Tampa, United States

Published online: May 25, 2016

www.karger.com/esr
Background: Thirty-five percent of pancreatic cancer patients have unresectable locally advanced pancreatic cancer (LAPC) at diagnosis. Several studies have evaluated systemic chemotherapy with FOLFIRINOX for patients with LAPC. We report a patient-level meta-analysis of LAPC patients treated with FOLFIRINOX as first-line treatment. Material and Methods: Studies evaluating FOLFIRINOX as first-line treatment for LAPC were included. The primary outcome was overall survival (OS) and secondary outcomes included progression free survival (PFS), and grade 3 or 4 adverse events. We collected patient-level data from all studies that reported survival outcomes. The Kaplan-Meier method was used for survival outcomes. Resection rates and grade 3 or 4 adverse event rates of eligible studies were pooled. Result: Thirteen eligible studies representing 689 patients were included of whom 355 had LAPC. Eleven studies, representing 315 LAPC patients, reported survival outcomes and were eligible for patient-level meta-analysis. The patient-level median OS of 24.2 months [95% CI: 21.6 - 26.8 months]. The patient-level median PFS of 15.0 months [95% CI: 13.8 - 16.2 months]. In 10 studies representing 490 patients, 296 Grade 3 or 4 adverse events were reported (i.e. 60.4 events per 100 patients). No death was attributed to FOLFIRINOX toxicity. Subsequent treatments included radiation therapy (56.8%) and surgical resection (25.7%). Conclusion: Patients with LAPC treated with FOLFIRINOX had a median OS of 24.2 months. Future research should confirm these promising results in a randomized controlled trial versus gemcitabine and determine which patients might benefit from radiation therapy or a resection after FOLFIRINOX.

OP-13
Systematic review on the treatment of isolated local recurrence of pancreatic cancer after initial curative surgery: Re-resection, chemoradiotherapy and stereotactic body radiation therapy

Vincent Groot a, Hjalmar Van Santvoort b, Steffi Rombouts a, Jeroen Hagendoorn a, Inne Borel Rinkes a, Marc Besselink b, Marco Van Vulpen b, Quintus Molenaar b

a UMC Utrecht Cancer Center, Utrecht, the Netherlands; b St. Antonius Hospital, Nieuwegein, the Netherlands

Background: The majority of patients who have undergone a pancreatic resection for malignancy develop disease recurrence within two years. In around 30% of these patients, isolated local recurrence (ILR) is found. Recently, several treatment options have been explored for this subgroup. We performed a systematic review to evaluate the literature on this topic. Material and Methods: The literature up to 1 February 2016 was searched. We included studies reporting on the treatment of local recurrence after initial curative resection of primary malignant pancreatic cancer. Studies reporting on neuroendocrine tumors, emergency intervention and metastatic recurrence were excluded. Primary endpoints were morbidity, mortality and survival. Result: After screening 1094 studies, 16 studies reporting on 279 patients undergoing treatment for ILR were included. Treatment options for ILR included surgical re-resection (8 studies, 100 patients), chemoradiotherapy (7 studies, 153 patients) and stereotactic body radiation therapy (SBRT) (2 studies, 26 patients). Pancreatic ductal adenocarcinoma was the primary tumor in 97% (n=272) of patients. Morbidity and mortality were reported for re-resection (29% and 1% respectively), chemoradiotherapy (54% and 0%) and SBRT (4% and 1%). Median survival after treatment of ILR of up to 32, 18 and 13 months was reported for re-resection, chemoradiotherapy and SBRT respectively. Most patients had a prolonged disease-free interval, with a weighted mean of 30 ± 25 months. Conclusion: In highly selected patients, treatment of ILR following pancreatic resection for pancreatic cancer seems safe, feasible and associated with relatively good survival. Further prospective studies should focus on optimal follow-up protocols, selection procedures and the comparison of treatment options.

OP-14
Predictive risk system for postoperative pancreatic fistula after pancreatic resection

Gabriel García-Plaza, Javier Larrea, Yurena Caballero, Mercedes Cabrera, Antonio Navarro, José López, Juan Ramón Hernández

General Surgery Department, Complejo Hospitalario Universitario Insular-Materno Infantil de Gran Canaria, Las Palmas de Gran Canaria, Spain

Background: Postoperative pancreatic fistula is a common complication after pancreatic resection. The aim of the present study is to develop a predictive risk system for postoperative pancreatic fistula. Material and Methods: Identification of risk variables for postoperative pancreatic fistulas (grades B and C of the International Study Group on Pancreatic Fistula classification) in patients who have undergone the following procedures: Whipple’s procedure, pylorus-preserving pancreaticoduodenectomy, Nakao’s procedure, distal pancreatectomy (with or without splenectomy) and the modified Appleby procedure. Result: Over a period of 5 years, a total of 111 patients underwent surgery. The independent variables for severe pancreatic fistula (logistic regression) included pancreas texture, intraoperative bleeding, perioperative blood transfusion, preoperative bilirubin and percutaneous transhepatic biliary drainage (PTBD) complications. A ROC analysis determined the cut-off values for bilirubin, blood transfusion and intraoperative bleeding. Odds ratios were used to determine a weighted score for each variable as follows: soft pancreas (OR = 10.44; 4 points), bleeding ≥800 mL (OR = 4.93; 2 points), transfusion of ≥2 units of red blood cell concentrates (OR = 2.95; 1 point), total preoperative bilirubin ≥11 mg/dL (OR = 3.53; 1 point) and PTBD with complications (OR = 6.64; 2 points). To calculate the individual risk probability of postoperative pancreatic fistula, the following equation was employed: P = e-6.155 + 0.894*adjusted weighted score + e-6.155 + 0.894*adjusted weighted score. The cut-off score was 4
points, the sensitivity was 87.5%, and the specificity was 71.57%. **Conclusion:** It is possible to obtain a score for a postoperative pancreatic fistula prognosis with the analyzed variables.

---

**OP-15**

Sentinel node navigation surgery for early gastric cancer

Atsuo Shida, Norio Mitsumori, Yuta Takano, Taizou Iwasaki, Naoto Takahashi, Nobuo Omura, Katsuhiko Yanaga

Jikei University School of Medicine, Minato-ku, Tokyo, Japan

**Background:** We started performing Sentinel Node Navigation Surgery (SNNS) for patients with Early Gastric Cancer (EGC) using infrared ray electronic endoscopy (IREE) with indocyanine green injection from year 2000. The EGCs usually have complex lymphatic drainage, unidirectional or multidirectional lymphatic flow. In this study, we investigated and clarified factors that affect the direction of lymphatic flow.

**Material and Methods:** Consecutive 60 patients with EGC who underwent SNNS by IREE from year 2006 to 2014 were enrolled to this study. Patients’ age, gender, location of tumors, operative method, previous treatment by endoscopic submucosal dissection (ESD), presence of pathological ulcerative scar, and maximum tumor diameter were analyzed.

**Result:** Bivariate analysis demonstrated the presence of pathological ulcerative scar ($P=0.0097$), tumor location (greater curvature vs. lesser curvature vs. anterior wall vs. posterior wall, $P=0.0098$), and maximum tumor diameter ($P=0.0003$) to be relevant to direction of lymphatic flow. Multivariate analysis showed that tumor location (g.c/a/w/p.w vs. l.c, odds ratio 8.2269, $P=0.0110$) and the maximum tumor diameter (odds ratio 1.0565, $P=0.0374$) are independent factors that affect direction of lymphatic flow. 78% of tumors which located at lesser curvature had unidirectional lymphatic drainage and 93% of tumor whose diameter was 40 mm and over had multidirectional lymphatic drainage.

**Conclusion:** Our investigation revealed the tumor location and tumor diameter to be the key factors which affect the direction of lymphatic drainage, which is useful fact to understand the complexity of lymphatic drainage in the stomach.

---

**OP-16**

Management of lower limb ischaemia during operative repair of acute Type A aortic dissection by distal cross over grafts

Agni Salem, Hazim Eltyeb, Ahmed Moosa, Orestis Argyriou, Thomas Theologou, Debbie Harrington, Manoj Kuduvalli, Aung Oo, Mark Field

Liverpool Heart and Chest Hospital, Liverpool, United Kingdom

**Background:** Acute Type A aortic dissection carries a risk of lower limb ischemia. A traditional approach to limb ischemia has been to “fix the proximal tear and distal malperfusion will correct itself”. A contemporary approach has been to address malperfusion either with endovascular intervention or extra-anatomical bypass. This work describes our experience with extra-anatomical bypass. **Material and Methods:** We retrospectively examined patients between 2007 and 2015 who underwent surgery for acute Type A aortic dissection. We identified a subset of the patients who presented with concomitant radiographic and clinical signs of lower limb ischemia. All patients underwent an open distal anastomosis under DHCA with resection of the entry tear. Extra-anatomical bypass was performed during cooling. **Result:** 118 cases of acute Type A aortic dissection underwent surgery during the study period with a mortality of 12.7%. Nine patients had persistent clinical evidence of lower limb ischemia (7.6%) and underwent extra-anatomical bypass during cooling. Two patients underwent additional fasciotomy. Median delay from symptoms to surgery in these nine patients was 9.5 hours. Two patients had bilateral amputations.

**Conclusion:** Our experience suggests this form of malperfusion may have a devastating outcome including amputation when diagnosis and referral are delayed. Early diagnosis and surgery are crucial in preventing this potentially devastating complication.

---

**OP-17**

Enhance of vascular recovery in ischemic limbs by inoculation of mesenchymal stem cells

Borja Herrero De La Parte a, Ignacio García-Alonso Montoya a, Alexander González Bada a, María Dolores García Vázquez b, María Celia Morales González b

a Department of Surgery and Radiology UPV/EHU, Leioa, Spain; b BioCruces Health Research Institute, Barakaldo, Spain

**Background:** Acute Type A aortic dissection is important as IRAD suggests this portends a poor outcome. Our experience suggests this form of malperfusion may have a devastating outcome including amputation when diagnosis and referral are delayed. Early diagnosis and surgery are crucial in preventing this potentially devastating complication.
Background: 70% of the patients suffering from chronic hind limb ischemia cannot benefit from therapies currently available; while in the other 30% of the patients receiving some kind of therapy, the treatment fails in one out of four. Adipose-mesenchymal stem cells (AMSC) have been proposed as a novel and alternative treatment for this illness. Material and Methods: The femoral artery was ligated and removed in 20 athymic mice (Hsd:Athymic Nude–Foxn1nu). Half of the mice received 150µl of saline in the semimembranosus muscle of the ischemic limb while the other 10 animals were treated with the same volume but containing AMCS (6\(\times\)10\(^5\) cells) divided in three punctures of 50µl. Blood flow was measured both in the normal and in the ischemic limb by using a Laser Doppler Imaging at 1, 2 and 3 weeks after cell transplantation. Pathological analysis was assessed by the count of the number of capillary vessels in both saline and AMSC treated limbs. Result: One week after cell transplantation, capillary flow in AMSC treated limbs was 35% of the controls, while in saline treated limbs it was 25% (p<0.05). 14 days later, the blood flow had increased to 61% and 43%, respectively (p<0.05), without further recovery on day 21st. After sacrifice, neutrophil infiltration and necrosis could be observed in control muscles, while regenerating fibers could be observed in treated limbs; moreover, the capillary count was enhanced from 16 capillaries per field in control samples to 25 in treated animals. Conclusion: Capillary blood flow and capillary count increase following AMSC transplantation into ischemic limbs.

OP-18
Tissue Engineering for Vascular Surgery: Phenotype of Human Endothelial Cells under Shear Stress
Jaroslav Chlupac a, b, Elena Filova a, Jana Havlíková a, Roman Matejka a, Tomas Riedel d, Milan Houska d, Eduard Brynda d, Elizbieta Pampula d, Murielle Remy e, Reine Bareille f, Philippe Fernandez f, Richard Daculsi g, Chantal Bourget 1, Lucie Bacakova 1, Laurence Bordenave 1
a Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic; b Transplant Surgery Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; c Third Faculty of Medicine, Charles University in Prague, Prague, Czech Republic; d Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic; e Faculty of Materials Science and Ceramics, AGH University of Science and Technology, Krakow, Poland; f Université de Bordeaux, Bioingénierie tissulaire, INSERM U1026, Bordeaux, France; g Université de Bordeaux, Bioingénierie tissulaire, INSERM U1026, Bordeaux, France

Background: Prosthetic bypass grafts can thrombose due to lack of endothelium. The objectives were to evaluate the phenotype of human endothelial cells on assemblies of extracellular matrix proteins under shear stress. Material and Methods: Protein assemblies of collagen (Co), laminin (LM) and fibronectin (FN) were produced on glass: Co, Co/LM and Co/FN. Human saphenous vein endothelial cells were harvested from patients during heart surgery, cultured and exposed to laminar shear stress of 12 dyn/cm\(^2\) for 2h. The expression profile of adhesion genes (mRNA for VE-cadherin, vinculin, KDR, CD-31, PECAM-1, B1-integrins) and metabolic genes (1-PA, NF-κB, eNOS and MMP-1) was determined. Quantitative immunofluorescence of proteins was performed after 6h of flow. The static control sample was excluded from flow. Result: Cells confluence was reached on all of the surfaces. The cells cultured on Co/LM and Co/FN were more resistant to flow compared to the cells on Co. The cells on Co/LM initially more upregulated vinculin and also NF-κB, and the cells on Co/FN changed the profile minimally compared to the static control. The cells on Co/LM and Co/FN expressed more VE cadherin and KDR than the cells on Co. The cells on Co/FN upregulated VE cadherin, CD-31 and MMP 1 to a greater extent than the cells on Co/LM. Some of these changes sustained up to 6h, as confirmed by immunofluorescence. Conclusion: Composite assemblies Co/LM and Co/FN were more suitable than Co alone for retention of human endothelial cells under flow. The Co/FN matrix promoted slightly more favorable cellular phenotype than Co/LM matrix under shear stress.

OP-19
Loading of the failing heart by intracavitary spring device delays the cardiac atrophy secondary to heterotopic heart transplantation
Martin Pokorny, Luděk Cervenka, Ivan Netuka, Jan Širák, Vojtěch Melenovský, Jan Šochman, Iveta Mrázová, Jiří Malý
IKEM, Praha, Czech Republic

Background: Patients with terminal heart failure require treatment using left ventricle assist device support, however, long-term unloading of the heart results in its atrophy with low chance of recovery of left ventricular function. Therefore, methods are sought to prevent or minimize this deleterious process. Heterotopic abdominal heart transplantation (HTx) of the failing heart (due to preexisting hemodynamic overload) is a suitable experimental model to study interventions to combat cardiac atrophy. We hypothesized that intraventricular implantation of a newly developed three-branch spring device, may provide enough isometric (isovolumetric) load for the left ventricle, that would attenuate cardiac atrophy during hemodynamic unloading after HTx Material and Methods: HTx was used for heart unloading in experimental rat model. Cardiac atrophy was evaluated as the ratio of the native to transplanted heart weight. The course of cardiac atrophy after HTx was evaluated on days 7, 14, 21 and 28 after HTx in recipients of failing heart alone or failing heart with implanted stent (n = 10 in each group). Result: HTx of failing heart alone resulted in 41±3, 57±4, 66±4 and 70±4% heart weight loss at the respective four time-points. Implantation of the intracavitary spring into left ventricle of the failing heart significantly re-
duced heart weight loss by 26±2, 42±3, 43±3 and 44 %, respectively (p<0.05 for each time-point compared with the losses without the stent). **Conclusion:** Our results show that development of unloading-induced cardiac atrophy in failing heart is substantially attenuated by implantation of intracavitary spring device.

### OP-20
**Vascular Prosthesis Infection: Preservation Treatment with Negative Pressure Wound Therapy (NPWT)**

**Jaroslav Chlupac, Libor Janousek, Jiri Fronek**

Transplant Surgery Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

**Background:** Infection of synthetic vascular prosthesis is a serious condition. Graft excision may be a compounded redo surgery. Preservation treatment with negative pressure wound therapy (NPWT) is subject of controversy. Life-threatening complications are feared in such cases. The aim was to evaluate retrospectively the efficacy and safety of NPWT as primary treatment of prosthetic infection. **Material and Methods:** Nineteen patients at mean age 64±10 years (32-82 years) were treated using NPWT for deep peri-prosthetic infection between 1/2009-2/2016. Early infection (≤30 days) occurred in 52.6%. Exposed anastomosis was observed in 63.2% of patients. **Result:** Mean hospital stay was 18±11 days (9-52 days), mean duration of NPWT therapy was 10±7 days (3-31 days) and mean follow-up was 569 days (31 days-6.1 years). Complete healing was achieved after 28±22 days (11-107 days). Recurrence of infection was observed in 5 wounds (26.3%) and non-fatal bleeding occurred in 1 patient (5.3%). No limb amputation was needed ≤30 days. No patient died. Success rate was 68.4%. **Conclusion:** Treatment of infection of prosthetic vascular graft with negative pressure is feasible and relatively safe method in selected group of patients.

### OP-21
**Paired Kidney Exchange program – Single Czech institution experience with 50 paired transplants since 2011**

**Tomas Puntoflicek, Tomas Marada, Libor Janousek, Ondrej Víkicky, Renata Zamecnikova, Jiri Fronek**

IKEM, Prague, Czech Republic

**Background:** Kidney paired donation has been at first performed at our institution in 2003. Until 2011 only four 2-way exchanges were performed. Since 2011 the kidney exchange started at our institution as coordinated program. All the incompatible pairs are collected prospectively in the database. The matching run is performed every three months with on average 20 pairs included for matching. **Material and Methods:** There were in total 58 paired live kidney transplants (KTx) performed in Czech since 2003, of those 50 since 2011, those we assessed. There were five 2-way, three 3-way, two 4-way, two 5-way, one 6-way and one 7-way domino kidney paired exchanges performed, two altruistic samaritan donors entered the scheme. There were 9 cases of re-transplant, of those seven second, one third and one fourth KTx. Two surgeons performed all the transplants. **Result:** Mean recipient age was 46.4 years (SD 10.9), mean Scr one month after transplant was 123 umol/l (SD 41), equivalent of 1.39 mg/dl (SD 0.46). There was one case of delayed graft function due to early rejection observed. The program did help some 50 patients so far. **Conclusion:** Kidney paired donation program can be run with success even at single institution, this limits some of the highly sensitised patients as well as blood group 0 recipients. Also, the bigger is the group for matching, the higher might be the number of transplants. Possible cooperation within European centres would help to treat more patients with the best treatment modality – live donor kidney transplantation.

### OP-22
**Hand-assisted extraperitoneoscopic live-donor nephrectomy: Single centre experience**

**Tomas Marada, Jiri Fronek**

Institute for Clinical and Experimental Medicine, Prague, Czech Republic

**Background:** Our study reports last 230 consecutive hand assisted retroperitoneoscopic live donor nephrectomies (HARS) performed at our institution since 6/2011 till the end of 2015. HARS nephrectomy technique has been introduced in Prague/Czech Republic in January 2003 since June 2011 is being used for all the donors including right sided and complex anatomy cases (multiple vessels and ureters, retro-aortic renal vein, renal artery diseases, etc). The main benefit of HARS approach is increased safety for the donor. **Material and Methods:** Data were collected prospectively. The operation is performed in the manner described by Wadstrom et al 2002, with minor modifications. There were all anatomical variations accepted for surgery, including right sided cases when indicated. **Result:** There were 147 females and 83 males, 215 left sided and 15 right sided nephrectomies in our group. Average donor’s age was 47 years (SD 11), mean BMI was 26 (SD 4). Mean WIT was 99 sec (SD 28). Complex anatomy (multiple vessels, ureters) were found in 53 cases (23%). There was no conversion to open nephrectomy, one donor was re-operated for bleeding from paraaortic lymphatics and another one for wound haematoma. The median post-operative hospital stay was 2 days. All donors have life-long follow up. **Conclusion:** HARS is a safe way of performing living-donor nephrectomy with low risk of severe complications, minimal morbidity and fast recovery. It is safe alternative to the transperitoneal minimally invasive as well as other nephrectomy techniques. It can be used safely for all the anatomical variations as well as right sided cases.
OP-23
External ureteral stenting in kidney transplantation: Does the type of stent matter?
L.S.S. Ooms, L.G. Spaans, M.G.H. Betjes, J.N.M. Ijzermans, T. Terkviatan
Erasmus University Medical Center, Rotterdam, the Netherlands

Background: In our center, we prefer the use of external stents over double J stents, because of several advantages like the possibility of monitoring the grafts urine production and the simplicity of stent removal without a cystoscopy. The aim of this study was to evaluate the effect of two types of external ureteral stents on the number of urological complications after kidney transplantation. Material and Methods: Data were retrospectively collected from 366 consecutive kidney transplantsations performed between January 2013 and January 2015 in our hospital, in which a suprapubic externalized ureteral stent was placed during surgery. Urological complications were defined as urinary leakage or ureteral stenosis requiring PCN placement. Result: A total of 197 patients received a straight stent with two larger side holes (type A; 8 Fr 'Covidien' tube) and 169 patients received a single J stent with 7 smaller side holes (type B; 7 Fr 'Teleflex' single J stent). We found a significant higher number PCN placements in type A stenting: 34 (17%) PCN interventions versus 16 (9%) in type B stenting (p= 0.030). Reason for PCN placement, stent dysfunction and early removal (< 8 days) was equal in both groups (p= 0.397) while incidence of rejection and urinary tract infection were higher in type B stenting. Patient and graft survival did not differ between the groups. Conclusion: In conclusion, 'stent type B' is associated with less urological complications compared to 'stent type A'. The type of stent does not affect patient and graft survival.

OP-24
Prolonged waiting list time for bladder outflow surgery is associated with multiple complications
Joseph M Norris a, b, c, James N Armitage c
a University College London, London, United Kingdom; b University of Cambridge, Cambridge, United Kingdom; c Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

Background: Symptomatic bladder outflow obstruction (for example, from benign prostatic hyperplasia) is common and readily treatable. Our aim was to investigate complications associated with prolonged waiting list times for outflow surgery (i.e. TURP, HoLEP). Material and Methods: Data were analysed for patients awaiting outflow surgery at our institution (n = 104). Outcome measures were: operation completion and cancellation rates, waiting list times, complication rates, and lengths of hospital stay. Result: Mean patient age was 71-years-old, and mean waiting list time was 127 days. Operations were completed in 8.7% of patients and cancelled in 4.8%; 86.5% remained on the waiting list. The following results are from patients whilst on the waiting list: 27 complications occurred in 11.5% of patients, resulting in 15 A&E attendances, six admissions, four clinic attendances and seven telephone consultations. The most prevalent complication was catheter blockage (4.8% of patients). The most serious complication was urosepsis (3.8% of patients), accounting for 26.7% of A&E attendances and 66.7% of admissions. Additional causes for admission in this cohort included: catheter blockage and small bowel obstruction. Adjusted mean hospital stay was 12.2 days. Other complications included: psychosocial stress, catheter-related issues (e.g. bypass, bag difficulties, irritation, problematic re-catheterisation), haematuria, epididymo-orchitis, and TWOC-failure. Conclusion: Capacity to undertake non-cancer work is restricted at our institution, resulting in protracted waiting times. Here, we demonstrate multiple complications associated with delayed bladder outflow surgery. Such complications may have considerable impact on patient well-being and expenditure, and as such draw attention to the focus that should be placed on reducing outflow surgery waiting times.

OP-25
Optimal multiparametric MRI sequence for fusion targeted prostate biopsy
Stejskal Jiří a, Záleský Miroslav a, Ryznarová Zuzana b, Votrubová Jana b, Zachoval Roman a
a Department of Urology, Thomayer Hospital, Prague, Czech Republic; b Department of Radiology, Thomayer Hospital, Prague, Czech Republic

Background: The aim of this pilot study was to determine the optimal sequence of multiparametric magnetic resonance imaging (mpMRI) for fusion of MRI and transrectal ultrasonography (TRUS) in targeted prostate biopsy. Material and Methods: We performed a fusion of MRI and TRUS images for targeted prostate biopsy in patients with suspected prostate cancer. Results were evaluated in 20 patients. MpMRI was done on a GE 1.5T Signa HDXT using surface and endorectal coil. TRUS and the fusion were performed using Toshiba Appio 500 with SmartFusion magnetic tracking system. Two reviewers evaluated the correlation of TRUS and MRI images during the fusion using T2 fast spin echo (FSE) sequence in a modified 2D axial and sagittal plane and T2 FSE 3D sequence in the axial plane. The comparison was based on the positional correlation of prede-terminated anatomical or pathological markers using a threepoint scale (very good correlation, sufficient correlation, insuffi- cient correlation). Result: Fusion using T2W 2D sequence in the sagittal plane was evaluated as insufficient in 90%, T2W sequence in the modified axial plane in the 10% and T2W 3D sequence in 0%. A very good correlation was observed in the fusion using T2W in the sagittal plane in 0%,
T2W modified axial plane in 60% and T2W 3D sequence in 75%. **Conclusion:** Based on this pilot study we recommend to use T2-weighted 3D sequence for MRI/TRUS fusion targeted prostate biopsy done by the Toshiba Appilio 500 SmartFusion ultrasound system. Supported by the AZVCR grant, project number 15-27047A.

**OP-26**

Robot-assisted sacrocolporectopexy for multi-compartment prolapse of the pelvic floor: A prospective cohort study evaluating functional and sexual outcome

Jan Van Iersel, Chris De Witte, Paul Verheijen, Ivo Broeders, Egbert Lenters, Esther Consten, Steven Schrafardt-Koops

Meander Medical Centre, Amersfoort, the Netherlands

**Background:** Pelvic floor disorders are a major public health issue. For female genital prolapse sacrocolpopexy is the golden standard. Laparoscopic ventral mesh rectopexy is a relatively new promising technique correcting rectal prolapse. There is no literature combining the two techniques robotically-assisted. This study aims to prospectively assess safety, quality of life, functional and sexual outcomes of robot-assisted sacrocolporectopexy (RSCR) for multi-compartment prolapse of the pelvic floor. **Material and Methods:** All sexually active patients undergoing RSCR between 2012 and 2014 were prospectively enrolled. Pre- and postoperative (12 months) questionnaires using the Urinary Distress Inventory (UDI-6), Pescatori Incontinence Scale, Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) and Pelvic Floor Impact Questionnaire (PFIQ-7) were completed. In addition Wexner and Vaizey Incontinence scores and the Wexner Constipation score were recorded at one year follow-up. **Result:** 51 patients (median follow-up 12.5 months) underwent RSCR. The simplified Pelvic Organ Prolapse Quantification (POPQ) improved significantly (p<0.0005) for all four anatomic landmarks. Both median fecal (pre- and postoperative Pescatori 4 vs. 3, p=0.002) and urinary incontinence (UDI score 28 vs. 22, p<0.0005) scores improved significantly at 12 months. In addition, acceptable median Wexner (3) and Vaizey incontinence (6) and Wexner Constipation (7) scores were noted postoperatively. A positive effect on sexual function (PISQ-12 score 32 vs. 37, p=0.002) and quality of life for each compartment (p <0.0005) was observed. One (2%) patient developed mesh erosion. There were no multi-compartment recurrences. **Conclusion:** RSCR is a safe and effective technique for multi-compartment prolapse in terms of functional outcome, quality of life and sexual function.

**OP-27**

Nipple Sparing Mastectomy and Immediate Implant Reconstruction using the Hemi-Y incision: Technique, Indications and Pitfalls

William Nabulyano, Sanjeev Hariparsad, Charles Malata, Parto Forouhi

Addenbrookes Cambridge University Hospital, Cambridge, United Kingdom

**Background:** Nipple-sparing mastectomy (NSM) is well established in risk-reduction surgery and allows excellent cosmetic outcomes. It is increasingly being adopted in breast cancer treatment. Traditional NSM involves either inframammary fold (IMF) or periareolar incisions. IMF incisions provide poor surgical access for removing tissues, particularly from the upper pole of the breast. Periareolar incisions give relatively limited access, particularly for reconstruction and are prone to nipple-areolar necrosis. We report an approach using a hemi-Y incision which avoids these shortcomings. **Material and Methods:** We reviewed the records of all NSMs performed by the senior author with a hemi-Y incision from November 2009– February 2015. The incision comprised a periareolar component (from 3-6 o’clock on the left breast and 6-9 o’clock on the right breast) with a vertical extension from 6 o’clock inferiorly onto the breast mound. All patients had immediate implant-based reconstruction. **Result:** 18 small-to-moderately sized breasts in 11 patients (BMI=21-26) underwent prophylactic NSM (4 contralateral breasts were treated with nipple removal for malignancy). Reconstruction was undertaken with expandable implants in 18 breasts, fixed-volume implants in 4 breasts. 14 reconstructions also utilised acellular dermal matrices. One breast developed wound dehiscence (returning to theatre) whilst the rest healed without depigmentation, scar hypertrophy or nipple projection problems. **Conclusion:** We present an innovative approach to NSM that optimizes surgical access, takes cognisance of cosmesis and minimises nipple-areola necrosis rates. As NSM is increasingly being extended to breast cancer surgery, the hemi-Y incision will become a useful addition to the armamentarium of the oncoplastic and reconstructive breast surgeon.

**OP-28**

Comparison of Effectiveness of Bariatric Surgery for Obesity: Mid-term results from a Single Bariatric Centre in the UK

Nehemiah Samuel, Peter Vasas, Abdulzahra Hussain, Hammad Zaïdi, John Finnen, Katie Kirk, Srinivasan Balachandra

Doncaster Royal Infirmary, Doncaster, United Kingdom

**Background:** Among commonly performed bariatric procedures, the Laparoscopic Roux-en-Y Gastric Bypass(LRYGB) is
considered the gold standard with sustained long term results. Laparoscopic Adjustable Gastric Band (LAGB) and Laparoscopic Sleeve Gastrectomy (LSG) are relatively new but gaining popularity. This study aimed to compare the midterm effectiveness of these 3 procedures in improving morbidity associated with obesity. Material and Methods: Retrospective analysis of a prospectively maintained database was undertaken to include all consecutive bariatric procedures since 2010. Patients with at least 2 years follow-up were included. At each visit patient’s weight, BMI, excess body weight loss (EBWL) and ongoing co-morbidities were recorded. Result: A total of 353 patients were included in the analysis (75% Women), 65(18.4%) patients underwent LAGB, 70(19.8%) LSG and 218(61.8%) LRGB. The median (i.q.r) age was 51.3(41.3-60), 46.3(36.3-53.8) and 42.3(33.6-49.1) years respectively. At presentation, the median weight was 139.8(127.5-162.2), 142.5(131.9-158.9), 139.(125.7-150.3) kilos p=0.077; and BMI 52(48-55), 50.1(47.4-54.3), 50.3(46.8-53.3) kg/m2 respectively p=0.069. %EBWL at the end of 2 years was significantly higher for the LRYGB group; median (i.q.r) 68.5%(57.5-84) p<0.001. Complete diabetes remission was significantly higher in the LRYGB group 42/80(52.5%) p<0.001. Exercise tolerance had significantly improved in the LRYGB group with a median 3 flights of stair-climbing possible at the end of 2 years p=0.001. There was no significant difference between the groups in remission of Hypertension; Dyslipidaemia; Asthma; GORD and Depression p>0.05. Conclusion: The mid-term results for weight loss and resolution of obesity related co-morbidities is in favour of LRYGB. Long-term comparative results will help both surgeons and patients to make informed choices on the preferred type of treatment.

OP-29
Pouch size matters: The influence of pouch size on excess weight loss after laparoscopic gastric bypass surgery
Beata Reiber a, Mark Tenhagen b, Huib Cense a, Ahmet Demirkiran a
a Red Cross Hospital, Beverwijk, the Netherlands; b VU medical center, Amsterdam, the Netherlands

Background: To determine the influence of the use of a orogastric tube for calibration of the gastric pouch on the percentage excess weight loss (%EWL) one year after laparoscopic Roux-en-Y gastric bypass (LRYGBP). Material and Methods: A retrospective case-matched control study in 130 patients. The use of a 40 French orogastric tube to calibrate the gastric pouch (group A) was compared to a technique wherein no gastric tube was used (group B). Baseline characteristics were collected and matched. Postoperative %EWL was recorded at 3, 6, 9 and 12 months post-surgery. Pre-and postoperative follow-up were identical in both groups. Result: Baseline characteristics were comparable for each group; the mean age was 43.6 years, the percentage female was comparable (84%). Mean initial weight was 128 kg and BMI 44 kg/m2 for group A; 127 kg and 44.2 kg/m2 for group B. Presence of comorbidities was similar in both groups. At one year follow up %EWL was 80% in group A and 70% in group B which (p=0.03). Further analyses showed that age (β= -0.323, p <0.000) and initial BMI (β= -0.405, p<0.000) were positively correlated with lower %EWL. Backward regression analysis revealed that the use of a calibration tube, initial BMI and age predicted the %EWL best with R squared at 30.7%. Conclusion: This study suggests that the use of a calibration tube for creating the gastric pouch leads to a higher %EWL at 1-year follow-up. The standardization of the technique for LRYGBP is desirable to achieve the maximum success rate in the surgical therapy of morbid obesity.

OP-30
Tumor markers in colorectal cancer
Miroslav Levy a, Vladimir Visokai a, Ludmila Lipska a, Pavel Vodicka a, Ludmila Vodickova b, Linda Bartu b, Lucie Benesova c, Marek Minarik c, Barbora Belsanova c, Ondrej Topolcan d, Jaromir Simsa a
a Surgical Department, Thomayer Hospital, First Faculty of Medicine, Prague, Czech Republic; b Institute of Experimental Medicine, Academy of Sciences of the Czech Republic, Prague, Czech Republic; c Center for Applied Genomics of Solid Tumours, Genomac Research Institute, Prague, Czech Republic; d Department of Nuclear Medicine, Medical School and Teaching Hospital, Charles University Prague, Pilsen, Czech Republic

Background: While efficient surgical treatment is crucial for prolonged survival of colorectal cancer patients, post-surgical follow-up is important for early detection of relapsing disease or progression. Current follow-up systems, typically based on imaging (CT, PET, MR), is frequently supported by observation of tumor markers CEA, CA19-9. Due to their limited sensitivity and selectivity, better tools for monitoring of the disease are desirable. Material and Methods: Four studies concerning different tumor markers performed on author’s department and results of surgery for colorectal cancer relapse are reported. Tumor markers CEA, CA19-9, CA242, Thymidine kinase, TPS, TPA, ICAM-1, VCA-M1, IGF-1, and Adiponectin, Leptin, circulating tumor DNA, miRNA and mucins were studied. Result: The surveillance based only on CEA and/or CA19-9 was cost-effective, but failed to disclose 1/3 of patients suffering from relapse. Our results indicate a potential for the detection of circulating tumor DNA as a non-invasive test of metastatic liver disease. Moreover, CRC patients carrying the CC genotype in MUC21 gene displayed a shorter survival and higher recurrence risk. With intensive follow-up system and aggressive surgical approach the resectability of the relapse in all locations was 35%. Conclusion: Early diagnosis of local recurrence due to follow-up helps to improve resectability and may reduce the extent of surgery. The ctDNA appears a viable tool for monitoring of clinical progression of colorectal cancer in patients. MiRNA and mucins seems to be possible marker for
Background: Pelvic floor exenteration is the essential part of complex treatment strategy for advanced small bowel tumours, originating from colorectal, urology or gynaecology organs. Material and Methods: Retrospective analysis of patients group after total pelvic floor exenteration at The Department of Surgery in Thomayer’s Teaching Hospital, operated on between 1st January 1999 and 31st December 2015. Result: During the study period of 17 years (1st January 1999-31st December 2015), total pelvic floor exenteration was performed in 63 patients (100%). Complications were recorded in 30 persons, constituting morbidity rate 48%. Hospital mortality was 11% as 7 patients died in postoperative course. Overall 5-years survival rate was 49%, disease specific survival 59%. Median survival after surgery was 4.6 years. Disease free interval, recorded 5-years from the surgery, reached 46%. Conclusion: Pelvic floor exenteration is the only chance for long time survival in patients with local advanced (T4), primary or recurrent, rectal cancer, where the tumour mass cannot be removed by less invasive procedure. Moreover, for certain tumours of urology and gynaecology origin, persisting or recurring after primary radiotherapy, pelvic floor exenteration may offer treatment with curative intent.

OP-33
Deviating colostomy construction versus stent placement as bridge to surgery for malignant left-sided colonic obstruction
Femke J Amelung a, Frank Ter Borg b, Esther Cj Consten a, Peter D Siersma c, Werner A Draaisma a
a Meander Medical Center, Amersfoort, the Netherlands; b Deventer Hospital, Deventer, the Netherlands; c Radboud Medical Center, Nijmegen, the Netherlands

Background: Acute colonic decompression using a deviating colostomy (DC) or self-expandable metal stent (SEMS) seems to lead to fewer complications and permanent stomas compared to acute resection in elderly patients with malignant left-sided colonic obstruction (LSCO). However, no consensus exists on which decompression method is superior, especially in curative patients. This study aimed to compare both approaches in potentially curable LSCO patients. Material and Methods: All LSCO patients treated with curative intent between 2004-2013 in two teaching hospitals were retrospectively identified. In one institution, DC was the standard of care, whereas in the other all patients were treated with SEMS. Result: In total, 88 eligible LSCO patients were included; 51 patients were treated with SEMS and 37 with DC. All patients eventually underwent elective resection. 235 patients were excluded due to benign or inoperable disease. No significant differences were found for hospital stay, morbidity, disease-free and overall survival and mortality. Major complications were seen in 13/51 (25.5%) patients in the SEMS group and in 4/37 (10.8%) patients in the DC group (p=0.10). Long-term complication rate was significantly higher in the DC group.
(29.7% vs. 9.8%, p=0.01), especially more incisional hernias were reported. Fewer patients had a temporary colostomy following elective resection after SEMS placement (62.2% vs. 17.6%, p<0.01). Permanent colostomy rate was not significantly different. **Conclusion:** SEMS and DC are both effective decompression methods for curable LSCO with comparable short- and long-term oncological outcomes; however, more long-term complications are seen after DC construction leading to an increased number of surgical procedures in this group.

---

**OP-34**

Initial experience with peritoneal CO2 recirculating system for treatment of peritoneal metastases

**Javier Alcalá, Eudalda López-Tomassetti, Kedith Palacios, Orbinda Cáceres, Oliver Monzón, Juan Ramón Hernández**

Hospital Universitario Insular de Gran Canaria, Las Palmas de Gran Canaria, Spain

**Background:** The combination of cytoreductive surgery with hyperthermic intraperitoneal chemotherapy is currently the best treatment for patients with peritoneal metastases from colonic cancer, ovarian cancer recurrence and Pseudomixoma peritonei. Randomized trials are trying to assess its effectiveness on stomach cancer. **Material and Methods:** From June 2015 we operated on 10 patients: 4 ovarian cancer, 3 colon, 2 pseudomixoma peritonei and 1 stomach cancer. Patients were selected by a multidisciplinary board and preoperative planning of surgery, type of chemotherapy and dosage was assessed on each patient. After cytoreductive surgery, we use the closed technique for hypertermic intraperitoneal chemotherapy with CO2 to enhance temperature control and exposure of peritoneal surfaces to the chemotherapeutic drug. **Result:** Postoperatively, patients remained on average 24 hours at the reanimation unit under surveillance of the anesthetic team. Mean hospital stay was 8 days. Reoperation rate was 0. No mortality was found and no patient suffered any major complication due to the hyperthermic therapy. We observed 2 cases of neutropenia attributable to Mitomycin but no morbidity was due to Placitaxel. In the short followup all patients are alive with no recurrence detected. **Conclusion:** Cytoreductive surgery and hyperthermic intraperitoneal chemotherapy using the closed technique is a safe and feasible procedure in humans in the setting of a tertiary hospital programme with a multidisciplinary and experienced team. Postoperative care of this patients can be carried out by anesthesiologists without admission at the intensive care unit.

---

**OP-35**

Re-admissions for delayed complications after cytoreductive surgery and HIPEC

**John Spiliotis, Eleftherios-Orestis Argyriou, Evangelos Vafias, Vasiliki Manou, Nikolaos Vaos, Anastasios Datis, Elias Efstathiou**

MetaXa Cancer Hospital, Piraeus, Greece; Metaxa Cancer Hospital, Piraeus, Greece; York Teaching Hospital, York, United Kingdom; Hatzikosta General Hospital, Mesolongi, Greece

**Background:** Peritoneal metastasis is currently treated with the complex procedure of cytoreductive surgery and hyperthermic intra-peritoneal chemotherapy. This procedure presents high morbidity and mortality rates, but they have only been examined in the immediate post-operative period. The aim of our study is to describe and analyze the post-operative events, secondary to such a procedure, after the patients’ discharge from the hospital. **Material and Methods:** We examine retrospectively 219 patients who were discharged from our hospital from the initial 230 patients with PM, who were operated on from August 2005 until August 2015 and underwent CRS and HIPEC. Complications are investigated from the patient’s discharge date until the 90th post-operative day, and are categorized with the Clavien-Dindo classification. **Result:** We identified 17 patients (7.8%) who developed late complications. No major differences in patient characteristics were identified between this group of 17 patients and the rest, apart from a slightly higher PCI (23.5 vs. 22.3). Mean length of stay at the re-admission was 11.7 days. 5 of the patients (29.4%) had to be re-operated on, with a mortality of 11.8% (2/17 patients). The most common complications involved abdominal abscesses (17.6%), ureteral strictures (17.6%) and entero-cutaneous fistulae (17.6%). **Conclusion:** Our study highlights the late complications following CRS + HIPEC procedures, after the patient’s discharge from the hospital, an issue that has not been investigated thoroughly yet and may have serious impact on the post-operative quality of life. The role of adjuvant chemotherapy following these procedures in the onset of such complications appears to be important and needs further investigation.

---

**OP-36**

IgG4-associated cholangitis in patients resected for presumed perihilar cholangiocarcinoma

**Robert Js Coelen, Lowiek M Hubers, Joanne Verheij, Ulrich Hw Beuers, Thomas M Van Gulik**

Academic Medical Center, Amsterdam, the Netherlands

**Background:** Distinguishing perihilar cholangiocarcinoma (PHC) from benign forms of sclerosing cholangitis affecting the bile ducts is challenging. Preoperative histological con-
The application of preoperative liver simulation to perform safer and higher-quality hepatectomy

Toru Goto, Hiroaki Terajima
Tazuke Kofukai Foundation, Medical Research Institute, Kitano Hospital, Osaka, Japan

**Background:** We routinely perform preoperative liver simulation using MDCT images from 2013. The aim of this study is to evaluate whether simulation affected surgical outcomes. **Material and Methods:** This study is a retrospective study enrolling 99 patients who underwent open liver resection except for partial resection from January 2010 to November 2015 in our institute. The patients were divided into two groups, Group S undergoing hepatectomy after simulation by SYNAPSE VINCENT (Fujifilm) and Group C without simulation. **Result:** 1. Hemihepatectomy and trisectionectomy (Group S; n=32, C; n=25) There were no significant differences of age, gender, disease, operation time, frequency of posthepatectomy liver failure, postoperative complication, postoperative hospital stay and hospital death. However, the blood loss volume was significantly lower in Group S (250g vs. 710g, p<0.005). Case1: A 70's male with hilar cholangiocarcinoma. After PTP, left trisectionectomy with concomitant resection of right hepatic artery was successfully performed with negative surgical margins. 2. Segmentationectomy and sectionectomy (Group S; n=20, C; n=22) There were no significant differences in patients’ background and all the foregoing surgical records. But Group S had more minute and complicated cutting plane aimed at safer and less invasive hepatectomy. Case2: A 60's female with HCC at segment 7-8 in cirrhotic liver by NASH. We successfully performed right anterior sectionectomy by cutting four of five 4th order divisions of Glissonean pedicle of segment 8. **Conclusion:** The preoperative liver simulation enables us to plan more precise surgical strategies and perform safer and higher-quality resection in not only major hepatectomy but also anatomically limited hepatectomy.
OP-39
The ‘AbdoMAN’: A physical abdominal wall simulator for biomechanical studies on techniques for closure of laparotomy
L.F. Kroese a, C. Ordrenneau b, J.J. Harlaar c, J. Verhelst a, G. Guerin b, R.H.M. Goossens d, F. Turquier b, J. Jeekel a, J.F. Lange a, e, G.J. Kleinrensink a

a Erasmus University Medical Center, Rotterdam, the Netherlands; b Medtronic, Trévoux, France; c VU Medical Center, Amsterdam, the Netherlands; d University of Technology, Delft, the Netherlands; e Havenziekenhuis, Rotterdam, the Netherlands

Background: Incisional hernia remains a frequent complication after abdominal surgery associated with significant morbidity and high costs. The purpose of this study was to use a previously developed physical abdominal wall simulator to investigate closure modalities on the mechanical behaviour of the abdominal wall. It was hypothesized that a physical abdominal wall model would give new insights in commonly used suture techniques. Material and Methods: A synthetic abdominal wall was placed over an air filled balloon simulating the abdominal cavity. Six pneumatic cylinders simulated action of the lateral abdominal wall muscles resulting in intra-abdominal pressure (IAP). The ‘AbdoMAN’ is capable to vary and measure IAP and cough repeatable with physiological peak IAP. A fifteen centimetre incision was created and closed. 3x3mm, 5x5mm and 10x10mm bite sizes in continuous suturing were compared. Strain patterns were captured with 3D stereo correlation software. Result: The ‘AbdoMAN’ was perfectly able to simulate physiological conditions using intact samples; mean peak IAP was 74.9mmHg (65.3-88.3). Fifteen samples were closed after incision. Closure modality analysis showed no significant difference in mean maximal strain at stitches (13.65±1.09% for 3x3mm, 13.76±1.45 for 5x5mm and 15.88±2.04 for 10x10mm) or incision distension (0.24±0.21mm for 3x3mm, 0.34±0.11mm for 5x5mm and 0.32±0.13mm for 10x10mm). Conclusion: Intact sample testing demonstrated repeatable testing conditions. Strain and incision distention analysis showed no significant differences between bite sizes. However, decreased variance when decreasing bite size might explain the better clinical outcomes. The ‘AbdoMAN’ might be a promising alternative or precursor for animal and clinical studies on abdominal wall related aspects of abdominal surgery.

OP-40
Prophylactic mesh placement to avoid incisional hernias after stoma reversal – A systematic review
Leontine Van Den Hil a, Sebastiaan Van Steensel b, Marc Schreinemacher b, Nicole Bouvy a

a Maastricht University Medical Centre, Maastricht, the Netherlands; b Amsterdam Medical Center, Amsterdam, the Netherlands

Background: Stomas are created frequently and are an important cause for complications, like parastomal hernias. Even after closure of a temporary stoma, 30%-48% of the patients will develop an incisional hernia at the former stoma site. Hernias are at risk for several complications and often require surgical mesh repair. Preventive measures are therefore needed and prophylactic mesh placement might be one technique to reduce the incidence of stoma related hernias. The aim of this study was to provide an overview of available literature on prevention of stoma related hernias, with the use of prophylactic meshes. Material and Methods: A literature search of Pubmed, MEDLINE and EMBASE was performed. Search terms for stoma, enterostomy, mesh, prophylaxis and hernia were used. The primary outcome was the incidence of parastomal or incisional hernia formation during follow-up. Secondary outcomes were mesh related complications. Result: 171 articles were identified and 25 studies with 1439 patients were included. In the studies regarding parastomal hernia, 1253 patients were included and 725 of them received a mesh (58%). Of this group 115 patients (17%) developed a parastomal hernia, while in the control group 164 parastomal hernias (38%) were detected. In four studies, a prophylactic mesh was placed in 94 patients to prevent incisional hernias. Only four patients developed an incisional hernia (4%), while in the control groups 28 out of 100 patients (28%) developed a hernia. No mesh infections were observed. Conclusion: The use of a prophylactic mesh reduces the risk of the development of stoma related hernias, without an increased risk of complications.
Small (5-6cm) subcostal incision and 3-ports laparoscopic rectotomy. The access site was closed with OVESCO clip. Cholecystectomy was performed with double channel endoscope via NOTES (N=11), and sham groups (N=6). NOTES: cholecystitis were randomized into NOTES (N=14), open (N=11), laparoscopic (N=11) groups. An animals gallstones were inserted laparoscopically via cholecystotomy. A follow up at 3, 6, 12 and 24 months was completed in 90, 77, 50 and 26 patients. The primary outcome was treatment success defined as an Eckardt score < 3. Result: 3, 6, 12 and 24 months after POEM, treatment success was achieved in 87, 74, 49 and 22 patients respectively. Quality of life significantly improved according to Eyspach-Williams score. Heartburn was present in 22 patients (24%) and 23 patients (26%) have been treated with proton pump inhibitors. Three months after POEM, a mild reflux esophagitis (mostly LA A) was diagnosed in 33 patients (37%) and a pathological gastro-esophageal reflux (DeMeester score > 14) was detected in 32 (36%) patients. Conclusion: POEM is a safe and effective treatment modality in patients with achalasia with excellent short term results. However, the 24 months recurrence rate was 23%. Mild reflux esophagitis and pathological gastroesophageal reflux are present in more than one third of patients and regular treatment with a PPI should be considered in all patients after POEM.
hospital stay, no postoperative complications and no readmissions. The secondary endpoints were the determination of factors associated with being a GCAS and the creation of a predictive score for GCAS. Result: There were 55% of men with a median age of 58 years, a mean BMI of 25.6 Kg/m2. There was 60% of ileostomy, 79% of end-to-end anastomosis, 85% of handsaw anastomosis. The mean operative time for stoma closure was 83 min. The mean LOS was 7 days. The rate of postoperative leak was 4%, the rate of postoperative ileus was 4.9%. Among the study population, 41% (n=92) constitute the GCAS. In multivariate analysis, an age of less than 50 years old (OR: 3.3, CI95%: 1.4-7.9, p=0.005), no vascular comorbidities (OR=4, CI95%: 1.4-10.5; p=0.008) and handsaw anastomosis (OR: 5.1, CI95%: 1.04-25.8, p=0.04) were associated with being a GCAS. The rate for GCAS range from 20% to 62% for the score of 0 to 3 (p<0.001). Conclusion: 41% of patients were GCAS and a predictive score to select patients is available.

OP-44
Reducing the amount of blood tests on surgical inpatients in an emergency setting
Ruchir Mashar, Gabriella Long
Milton Keynes University Hospital, Milton Keynes, United Kingdom

Background: Blood tests are performed routinely, and are a simple and effective way of guiding patient management. No work has been done looking at improving the cost-efficiency of ordering blood tests peri-operatively in an emergency setting. We hypothesised that an educational intervention involving junior members of the team could improve the financial efficiency of ordering blood tests, alongside reducing the average duration of stay of inpatients. Material and Methods: The frequency of FBC, U&E’s, LFTs, CRP, clotting, INR, and amylase was monitored for patients admitted under emergency surgery over a 2-week period. The average duration of stay, the average amount spent per patient per day on blood tests was also calculated. Demographics on age and gender were collected to ensure no significant difference in cohorts. An educational intervention involving the junior colleagues was implemented, with repeat monitoring to evaluate any changes seen. Result: The average amount spent on blood tests per day per patient reduced from £16.30 to £9.80 (P<0.05) with no difference to the average length of stay (5.2 v. 4.9 days, P = 0.64). Significant reductions in frequencies (P<0.05) of blood tests were seen for clotting (34.0%), INR (33.1%) and LFTs (30.0%) with no significant difference in age or gender of the cohorts. Conclusion: A simple educational intervention involving junior members of the team can reduce the amount of blood tests on surgical inpatients. Though it does not reduce the duration of inpatient stay, it functions well as a cost-saving measure. This may also improve patient experience, but further research is required.

OP-45
Enhanced Recovery after Surgery (ERAS) in elective colorectal patients in a District General Hospital: systematic impact analysis post implementation
Richard Stevenson a, Joy Ngai b, Gillian Mccoll c, Michael Gillespie c, Shae Roddy b, Caroline Davidson b, Natrajan Manimaran d
Queen Elizabeth University Hospital, Glasgow, Scotland; b Inverclyde Royal Hospital, Greenock, Scotland; c Crosshouse Hospital, Kilmarnock, Scotland; d Victoria Hospital, Kirkcaldy, Scotland

Background: The Enhanced Recovery After Surgery (ERAS) pathway has sought to reduce both peri-operative morbidity and in-patient stay for patients undergoing major surgery. Despite limited evidence, ERAS has been widely adopted at a significant additional cost per patient. The aim of this study was to determine the impact of ERAS pathway on post-operative outcomes in elective colorectal resections in a Scottish District General Hospital. Material and Methods: All patients (n=277) who underwent elective colorectal resections between January 2010 and December 2014 were retrospectively reviewed. The cohort of patients pre-ERAS (n=193) were compared with those post-ERAS (n=84). Adherence to ERAS guidelines was determined through a National dataset obtained from the Scottish Government. Confounding factors were identified and adjusted for. Sub-group analyses were performed for the approach (laparoscopic versus open) and area of colon resected (right versus left side). Result: The combined analysis demonstrated that ERAS had significantly reduced the median (9 days pre-ERAS vs 8 days post-ERAS, p=0.007) post-operative length of stay. Overall complication rates, anastomotic leak rate, 30 day mortality and readmission rates were comparable. Once the confounding factors were adjusted for leaving ERAS as the only variable, direct comparison for all subgroups revealed no significant difference in any of the post-operative outcomes. Conclusion: ERAS has achieved neither objective of reducing morbidity or post-operative length of stay in our Institution. This could be due to insufficient patient numbers or a failure of implementation. Further studies are required to determine causation.

OP-46
Long-term functional results of low anterior resection with colonic J-pouch reconstruction for rectal cancer in elderly patients
Jin-Ichi Hida, Yasumasa Yoshioka, Fumiaki Sugiura, Koji Daita, Junichiro Kawamura, Kazuki Ueda, Tadao Tokoro, Ippei Matsumoto, Takushi Yasuda, Kiyotaka Okuno
Surgery, Kindai University School of Medicine, Osaka, Japan
Background: Bowel function after low anterior resection for rectal cancer with colonic J-pouch reconstruction is more normal than after conventional straight anastomosis. However, few reports have examined the function of colonic J-pouch reconstruction in the elderly. Good function would obviate the need for colostomy, which is sometimes performed because of concern about fecal incontinence, which increases with age. This study evaluated the function of colonic J-pouch reconstruction in elderly patients aged 75 years or older. Material and Methods: Functional outcome was compared in 20 patients aged 75 years or older (older group) and 27 patients aged 60 to 74 years (old group) and 60 patients aged 59 years or younger (young group). 3 years after colonic J-pouch reconstruction, using a functional scoring system with a 17-item questionnaire (score range, 0 (overall good) to 26 (overall poor)). Result: The functional scores in the three age groups were satisfactory and similar. Among patients with anastomoses 1 cm to 4 cm from the anal verge, all 17 categories on the questionnaire in the three age groups were similar. Among patients with anastomoses 5 cm to 8 cm from the anal verge, only the use of laxatives or glycerine enemas was more common in the older group than in the old and young group (90 vs 38.5 percent and 43.3 percent; P = 0.01). Conclusion: Low anterior resection with colonic J-pouch reconstruction provides excellent functional outcome, including continence, for elderly patients. Colonic J-pouch reconstruction is a highly preferable alternative to permanent colostomy in elderly patients undergoing low anterior resection.

---

**OP-48**  
Continuous Intrathecal Baclofen Delivery in Severely Disabling Spasticity

Hakan Simsek, Md, Assistant Prof a, Emre Zorlu, Md a, Mehmet Guney Şenol, Md, Associate Prof a, Selim Akarsu, Md, Associate Prof c, Gokhan Inanligi, Md, Assistant Prof a, Bulent Duz, Md, Associate Prof a

a Gülhane Military Medical Academy Haydarpaşa Teaching Hospital Department of Neurosurgery, Istanbul, Turkey; b Gülhane Military Medical Academy Haydarpaşa Teaching Hospital Department of Neurology, Istanbul, Turkey; c Gülhane Military Medical Academy Haydarpaşa Teaching Hospital Department of PM&R, Istanbul, Turkey; d Gülhane Military Medical Academy Haydarpaşa Teaching Hospital Department of Anesthesiology, Istanbul, Turkey

Background: To determine the efficacy of intrathecal baclofen treatment in the medically intractable spasticity as a consequence of cerebral palsy, brain injury, spinal cord injury, multiple sclerosis, aneurysm bleeding, and some other neurological disorders and present the challenges that we encountered during pump implantation surgery on the patients who are severely disabled because of spasticity. Material and Methods: 22 patients with severe spasticity who had at least a modified Asworth spasticity scale (MASS) score of 3 and underwent pump implantation surgery between 2012 and 2015 with minimum follow-up of six months were recruited from the clinic archives. 8 of the 22 patients were at pediatric age and all of them were nonambulant before surgery. Result: All of them underwent programmable intrathecal baclofen pump implantation surgery. Mean MASS scores improved from 3.59 to 1.32 (p < 0.001). Subarachnoid catheters were placed via percutaneous technique in 18 patients, where we had to perform partial hemicraniectomy in order to place the catheter into the dural sac in four patients. All the patients improved significantly and 5 began using upper extremities and three adults became ambulant following physical therapy. Conclusion: ITB therapy apparently increases quality of life and functional independence.
increases functional outcome. Therefore, patients with intractable spasticity should be given the chance of intrathecal baclofen treatment at the earliest period of their lifetime disability. Because of spinal abnormalities due to spasticity, partial hemilaminectomy to implant the pump should be considered in challenging cases. Thus potential benefit from physical therapy is, most of the time, realized.

OP-49
Testing a Novel Nucleus Pulposus Substitute: Biomechanical and In Vivo Studies

Background: Nucleus pulposus (NP) replacement therapy could offer a less invasive alternative to restore function of degenerated intervertebral discs. Numerous NP substitutes have been investigated as current testing methods often do not lead to efficient translation into clinical application. Here we present the evaluation of a novel NP substitute, consisting of a hydromed core and electrospun envelope. Material and Methods: We performed mechanical evaluations and an in vivo pilot experiment. Initially, swelling pressure of the substitute was assessed in confined compression. Next, substitutes were placed into mechanically damaged caprine lumbar intervertebral discs to determine biomechanical segment behaviour in bending and torsion. Subsequently, segments were tested in native, damaged and repaired conditions under dynamic axial compressive loading in a loaded disc culture system (LDCS). Finally, NP substitutes were implanted in live goat intervertebral discs using a transpedicular approach. Result: In confined compression, NP substitutes showed load-bearing capacity, but exhibited a much lower absolute pressure. In bending and torsion, substitutes could partly restore the mechanical response of the disc. During dynamic axial compression in the LDCS the substitute was not able to recover axial compressive behaviour towards the healthy situation. Moreover, substitutes did not remain in place in the in vivo situation but migrated out of the disc area. Conclusion: NP substitutes may mimic native disc behaviour in simple mechanical tests, yet fail in more realistic set-ups. Therefore, we recommend that biomaterials for NP-replacement be tested in several mechanical testing modalities of increasing complexity and in their relevant anatomical surroundings, for a more reliable prediction of clinical potential.

OP-50
The Amsterdam Wrist Rules: An Implementation Study
Marjolein Mulders, Monique Walenkamp, Carel Goslings, Niels Schep

a Academic Medical Center, Amsterdam, the Netherlands; b Maasstad Hospital, Rotterdam, the Netherlands

Background: Today, patients with wrist trauma are routinely referred for radiography of the wrist. Currently no guidelines exist to endorse decision-making regarding this referral. The Amsterdam Wrist Rules (AWR) is an externally validated clinical decision rule, which helps determine the need for radiography in patients with wrist trauma. The aim of the current study is to evaluate the implementation of the AWR at the Emergency Department (ED). Material and Methods: This implementation study was designed as a “before and after” prospective cohort study. All consecutive adult patients presenting with acute wrist trauma at the ED of one University and three teaching hospitals were included. Primary outcome was the reduction of radiographs requested. Secondary outcomes were the number of clinically relevant missed fractures, physician acceptability and compliance and patient satisfaction and experience. Result: From November 2014 till January 2016 a total of 399 patients were included. The median age was 50 years and 61% of patients were female. The absolute reduction in radiographs requested was 15,5%. One fracture was missed; however this fracture was not clinically relevant. In 4% the physicians adhered to the AWR. The main reason not to adhere was a suspected fracture of the scaphoid. Except for three patients, all patients felt secure with the fact they did not receive a radiograph of the wrist. Conclusion: Implementation of the AWR at the ED results in an absolute reduction in requested radiographs of the wrist of 15,5%, without missing any clinically relevant fractures. However, only 4% of physicians adhered to the recommendation of the AWR.

OP-51
Experimental treatment with Folic Acid for ischaemia-reperfusion injury induced with a lower limb tourniquet in a murine model
Inigo Cearra, Borja Herrero, Ignacio Garcia-Alonso, Felix Silio, Enrique Lobato

a Department of Traumatology and Orthopaedic Surgery. University Hospital of Basurto, Bilbao, Spain; b Laboratory of Experimental Surgery. University of the Basque Country, Leioa, Spain

Background: Limb ischaemia up to 3 hours is routinely performed in Orthopaedics, causing an undesirable ischaemia-reperfusion injury, with functional repercussion in the short term. Up to date, there is not any established prophylactic
method of identifying elderly patients at risk of hip fractures.

OP-53
Late tourniquet release and drain clamping reduces postoperative blood loss in total knee arthroplasty
Cemil Yildiz a, Necmettin Kocak b, Servet Tunay c, Mustafa Basbozkurt d, Kenan Koca e, Serkan Akipancar c

a Department of Orthopaedic Surgery, Gulhane Military Medical Academy, Ankara, Turkey; b Department of Public Health, Gulhane Military Medical Faculty, Ankara, turkey; c Department of Orthopedic Surgery, Gulhane Military Medical Faculty, Ankara, Turkey

Background: Many studies have investigated the effect of tourniquet release time and closed suction drainage in total knee arthroplasty (TKA). However, controversy remains as to the advisability of preclosure tourniquet release and the advisability of closed suction drain use following total knee arthroplasty. The aim of the study was to investigate if there is a benefit of performing tourniquet release after skin closure, along with drain clamping, for the first 6h following TKA. Material and Methods: Ninety-six patients underwent TKA between May2009 and April2010. Forty-two of these were excluded because of systemic diseases and simultaneous bilateral TKA. Twenty-nine of these were excluded due to use of a patellar component and posterior cruciate ligament (PCL)-sacrificing systems. Thus, 53 patients that underwent PCL-retaining cemented TKA were reviewed retrospectively. In the control group (group C), the tourniquet was released before skin closure, an attempt at hemostasis was made, and a compressive bandage was applied. The drain was not clamped in these patients. In the test group (group T) the tourniquet was released after skin closure and compressive dressing followed by 6h of drain clamping reduced postoperative blood loss in TKA surgery.

OP-52
Canal to Diaphysis Ratio as a Risk Factor for Hip Fractures and Hip Fracture Pattern
Prasad Ellanti, Kunal Mohan, Andrew Moriarity, Tom McCarthy

Department of Trauma & Orthopaedics, Saint. James’s Hospital, Dublin 8, Ireland

Background: Osteoporosis and related fractures constitute a significant burden in modern healthcare. The standard method of diagnosing osteoporosis; by dual energy x-ray absorptiometry (DEXA) scan, is limited by accessibility and expense. The thickness of the cortex of the proximal femur on plain radiographs has been suggested as an alternative method for indicating osteoporosis and as a risk factor of hip fractures in the elderly. Material and Methods: A retrospective study of plain radiographs was undertaken, with the primary objective of assessing the usefulness of the canal-diaphysis ratio (CDR) as a risk factor for hip fractures. The secondary objective was to assess whether there is any difference in the utility of measuring the CDR across fracture types. The CDR was measured in 50 neck of femur fractures, 50 intertrochanteric hip fractures and 50 patients who had a second hip fracture. These were compared to the CDR of 50 patients without a hip fracture. Result: In comparison to those without a hip fracture, there was a significant difference in the CDR of patients with a neck of femur fracture (p = 0.016) or an intertrochanteric fracture (p = <0.001). Additionally, we found a significant difference in patients with non-simultaneous bilateral hip fractures (p = < 0.001). Conclusion: In summary, we concluded that a CDR of >0.66 was a risk factor for neck of femur fractures, and a CDR >0.69 was a risk factor for intertrochanteric fractures. Measuring the CDR can hence be considered as a simple, inexpensive method of identifying elderly patients at risk of hip fractures.
OP-54
Prediction of scoring system for diagnosis of intra-abdominal injury after blunt abdominal trauma
Ankur Patni, Ankit Sharma, Darpan Dadheech, Prabha Om
Sawai Man Singh, Jaipur, India

Background: Abdominal injury is third most common cause of death from trauma. Blunt trauma remains commonest type of abdominal injury. Road traffic accident is most common cause of blunt trauma abdomen. Early diagnosis & treatment can reduce mortality significantly. So a scoring system is developed for diagnosing intra abdominal injury cases without going for expensive CT scan. Material and Methods: Study Area: Trauma Center of SMS Hospital, Jaipur. Study Design: Hospital based comparative validation type of observational study. Statistical analysis: Data analyzed and inferred with the help of computer with applying statistical methods as per data yield. Result: Hundred cases with blunt abdominal trauma (94% male), age 32.36 ± 15.25 (14 to 80 years) M:F ratio 15.6:1 were enrolled (42 cases of IAI). A 30-point Jaipur blunt trauma scoring system (JBTSS) was developed based on the obtained β score of each independent predictor for positive CT status using multivariate logistic regression. Patients were divided into three groups including low (score≤9), moderate (9≤score≤19) and high risk (score>20). Patients with score ≥20 should be highly suspected of having IAI. Scores between 9 to 19 were considered as moderate risk patients & needed additional observations & test. Low risk patients did not show positive CT-scans (specificity 100%). All high risk patients had positive CT-scan findings (sensitivity 100%). The ROC curve indicated a close relationship between the results of CT scan and JBTSS (AUC =0.935). Conclusion: This scoring system gives a good prediction diagnostic tool for BAT detection and has the potential to reduce unnecessary CT scan and health care costs.

OP-55
Acoustic radiation force impulse imaging for assessment of graft fibrosis after liver transplantation
Yukihiro Okuda, Kajiro Taura, Kenji Yoshino, Yoshinobu Ikeno, Takahiro Nishio, Gen Yamamoto, Kazutaka Tanabe, Satoru Seo, Etsuro Hatano, Toshimi Kaido, Hideaki Okajima, Shinji Uemoto
Department of Surgery, Graduate School of Medicine Kyoto University, Kyoto, Japan

Background: Liver biopsy has been the gold standard for assessing graft fibrosis; however, less invasive method would be ideal. We aimed to evaluate the usefulness of non-invasive liver stiffness measurement by acoustic radiation force impulse imaging (ARFI) for the assessment of graft fibrosis. Material and Methods: We performed ARFI on 205 consecutive post liver-transplant patients (primary diseases: 67 viral hepatitis/cirrhosis, 62 biliary atresia, 38 PBC/PSC, and 38 others) undergoing liver biopsy. ARFI examination was performed in the right intercostal space, except 65 cases in which the liver was observable only by subcostal or epigastric scan. Liver stiffness expressed as shear wave velocity (Vs, m/s) as well as routine laboratory test was compared with Metavir fibrosis score (F0–F4), and the predictive powers for graft fibrosis were evaluated using receiver operating characteristic (ROC) analysis. Result: F2≤ was observed in 52 patients. Vs was significantly higher in F2≤ than in ≤F1 (p<0.0001). Vs predicted F2≤ better than any hematological/biochemical parameters (area under the ROC curve [AUROC]: 0.75). Multivariate analysis identified Vs, international normalized ratio of prothrombin time (PT-INR) and total protein (TP) as the significant factors associated with F2≤. The AUROC of the compound index incorporating Vs, PT-INR, and TP was 0.78, which was better than that without Vs (0.71, p=0.02). Confined to the intercostal examination (n=140), the AUROC for the prediction of F2≤ improved to 0.82 with Vs alone and 0.85 with Vs, PT-INR, and TP, indicating intercostal scan provided more reliable measurement. Conclusion: ARFI examination was useful for assessing graft fibrosis after liver transplantation.

OP-56
Abdominal wall closure after intestinal and multivisceral transplantation: A review of 47 consecutive cases
Kai Yuen Wong, Jonathan Maw, Andrew Butler, Amer Durrani, Richard Price
Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

Background: Primary abdominal wall closure after visceral organ transplantation is not always possible. This results from factors such as extensive intra-abdominal adhesions and loss of abdominal domain from enterocutaneous fistulation and previous operations including laparostomy, and donor-to-recipient (DR) weight mismatch. Failure to successfully primarily close the abdominal wall can be associated with significant morbidity and mortality. We review our experience of abdominal wall closure following intestinal or multivisceral transplantation. Material and Methods: All patients (1996–2013) who received an intestinal graft either in isolation or part of a cluster of abdominal organs including liver (multivisceral transplant, MVT) or excluding liver (modified multivisceral transplant, MMVT) at a single tertiary hospital were identified. The method and timing of abdominal wall closure was retrospectively correlated with patient demographics, DR weight ratio, DR body mass index ratio, number of preoperative and postoperative surgeries, comorbidities, complications, inpatient length of stay and outcomes. Result: 43 patients (25 MVT, 12 isolated intestinal grafts, 10 MMVT; 55% male) with a mean age of 44 years (range 19-65) were evaluated. Primary abdominal closure was achieved in 44 cases (94%) including 1 case using donor
OP-57
Abdominal free flap breast reconstruction outcomes and cost analysis: A review of 172 consecutive cases
Kai Yuen Wong a, Tom Paterson a, Karim Alame b, Sam Kyung Min Lee b, Charles Durrant a, Simon Heppell a
a Salisbury NHS Foundation Trust, Salisbury, United Kingdom; b Southampton Medical School, Southampton, United Kingdom; c Queen Alexandra Hospital, Portsmouth, United Kingdom

Background: The deep inferior epigastric artery perforator (DIEP) free flap is considered the gold standard for autologous breast reconstruction. However, its economic viability remains controversial. We present the outcomes and cost analysis of abdominal free flap breast reconstruction (FFBR) at a single hospital. Material and Methods: All abdominal FFBRs performed (July 2010- September 2014) by the senior authors were evaluated. Outcomes including hospital stay and complications were retrospectively correlated with patient demographics, comorbidities, tumour characteristics, use of adjuvant therapy, reconstruction type, surgical technique and timings. Actual costs were compared with reimbursement from Health Resource Group tariffs associated with each episode of care. Cost estimates for staffing, consumables, equipment, overheads and inpatient bed stay were provided by our finance department. Result: A total of 172 patients with mean age 52 years (range 28-79) underwent 193 FFBRs (21 bilateral, 151 unilateral; 110 delayed, 83 immediate) including 2 transverse rectus abdominis myocutaneous (TRAM), 7 muscle sparing TRAM, 6 superficial inferior epigastric artery and 178 DIEP flaps. Mean total theatre time was 331 min (unilateral delayed), 339 min (unilateral immediate) and 452 min (bilateral). Average inpatient stay was 4.4 days. Complications occurred in 31 patients (18%) including 3 flap failures (1.6%). Compared to received reimbursement, the average actual costs for unilateral delayed (£4540), unilateral immediate (£4787) and bilateral (£6205) FFBRs resulted in net profits of £2899, £2652 and £1367 per case respectively. Conclusion: Our study allowed us to identify areas to improve service delivery and efficiency.

OP-58
Genomic and prognostic associations of E-cadherin in breast cancer: an immunohistochemical study of 3273 patients, systematic review and meta-analysis
Sabrina H. Rossi a, Raza Ali a, Prof Carlos Caldas b, Prof Paul Pharoah a
a Centre for Cancer Genetic Epidemiology, University of Cambridge, Cambridge, United Kingdom; b Cancer Research UK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom

Background: Few sufficiently powered studies have been published on the significance of E-cadherin in breast cancer survival, generating conflicting evidence. The relevance of loss of CDH1 relative to genomic subtypes of breast cancer has not been systematically investigated. Material and Methods: We assessed CDH1 alterations and protein expression relative to IntClust subtypes in 732 patients from The Cancer Genome Atlas. We also performed a systematic review and meta-analysis of 1299 articles identified in the PubMed database, including previously unpublished estimates from two large studies (SEARCH and NEAT). Result: E-cadherin protein expression was significantly lower in patients with CDH1 mutations compared to wild type (p<0.0001). CDH1 methylation was negatively correlated with E-cadherin expression (p = 0.02). Substantial heterogeneity was observed (I squared = 66% and 64% respectively). CDH1 methylation was negatively correlated with E-cadherin expression (p = 0.02). Substantial heterogeneity was observed (I squared = 66% and 64% respectively). The method for assessing E-cadherin protein expression is strongly influenced by mutation and moderately influenced by methylation, with little contribution from copy number alterations. Reduced E-cadherin expression is a significant predictor of poor survival, albeit with a relatively small effect size.
Continuous wound infiltration versus epidural analgesia after hepato-pancreato-biliary surgery (POP-UP): A multicentre, randomised controlled, open-label, non-inferiority trial

Timothy H. Mungroo a, Denise P. Veelo a, Olivier R. Busch a, Susan Van Dieren a, Thomas M. Van Gulik a, Tom M. Karsten b, Steve M. De Castro b, Marc B. Godfried b, Bram Thiel b, Markus W. Hollmann a, Philipp Lirk a, Marc G. Besselink a

a Academic Medical Center, Amsterdam, the Netherlands; b OLVG Oost, Amsterdam, the Netherlands

Background: Epidural analgesia is the international standard for pain treatment after laparotomy. Although some studies advocated continuous wound infiltration with local anesthetic because of alleged fewer disadvantages, robust evidence is lacking, especially on patient reported outcome measures. We aimed to determine the effectiveness of continuous wound infiltration in open hepato-pancreato-biliary surgery. Material and Methods: In this multicenter, randomized controlled, open-label, non-inferiority trial (NTR4948), we enrolled patients undergoing open hepato-pancreato-biliary surgery in two Dutch hospitals. Patients were centrally randomized (1:1) to either pain treatment by continuous wound infiltration (CWI) with bupivacaine plus patient controlled analgesia (PCA) with morphine or epidural analgesia (bupivacaine/sufentanil). The primary outcome was the mean Overall Benefit of Analgesic Score (OBAS) from day 1-5, a validated composite endpoint of pain scores, opioid side effects and patient satisfaction (range 0(best)-28(worst)). To establish non-inferiority, the upper bound of a one-sided 90% confidence interval for the difference of the mean OBAS had to be less than +3.0. Result: Between Jan-Sept 2015, we randomly assigned 102 patients. The mean OBAS had a median of 3.0 [IQR 2.0-4.8,n=55] vs 4.0 [IQR 2.4-5.8,n=47] in favor of the CWI group, with the upper bound of the one-sided 90% CI +0.13 (95% CI: -1.54/+0.30), meeting the criteria for non-inferiority (p<0.0001). There were no significant differences in (serious) adverse events although one patient in the CWI group developed temporary hypotension and arrhythmia after bolus injection. Perioperative vasopressor requirement was lower with CWI. Conclusion: Continuous wound infiltration is non-inferior to epidural analgesia in open hepato-pancreato-biliary surgery concerning quality of analgesia and patient reported outcomes.

Over 10 years of Islet Allogenic Transplantation for uremic patients in Lille

Mikael Chetboun, Marie-Christine Vantyghem, Julie Kerr-Conte, Thomas Hubert, Robert Caiazzo, Valéry Gmyr, Violeta Raverdy, Francois Pattou

Inserm U1190, Recherche Translationnelle sur le Diabète, University Hospital of Lille, Lille, France

Background: Islet allogenic transplantation is an eligible therapy for brittle Type 1 Diabetic (T1D) patients with hypoglycemia unawareness or with previous Kidney transplantation. We compared the long term outcome of intraportal islet transplantation in uremic (Islet After Kidney, IAK) patients and non-uremic (Islet Transplantation Alone, ITA) patients according to the Edmonton immunosuppressive regimen protocol. Material and Methods: 33 T1D were enrolled in a single-center phase 2 clinical trial. 19 T1D received an allogenic ITA with multiple sequential radiologic or surgical intra-hepatic infusions and 14 T1D received an allogenic IAK transplantation for end-stage renal disease and were followed up for up to 12 years. Result: 33 patients received mean Islet cell mass of 13.5±2.8 x 1000 150µm-islet equivalents per kg of body weight in 2.7±0.1 sequential infusions. 32 T1D patients achieved insulin-independence (I-I) with mean I-I duration of 1538±219 days. Graft function (fasting C-peptide > 0,3 ng/mL) was maintained in 25 patients (13 ITA and 12 IAK), and 11 patients remained I-I (4 ITA and 7 IAK) at follow-up. The Kaplan-Meier estimated proportions of patients with graft function / insulin independence after ITA and IAK were respectively at 5 years / 10 years: 0.86 vs 0.86 / 0.71 vs 0.64 (P=0.53; Log-rank test) and 0.43 vs 0.57 / 0.19 vs 0.29 (P=0.46). Mean estimated glomerular filtration rate (MDRD) remained stable in both groups up to 10 years. Conclusion: The present study validates that excellent long term outcomes can be obtained after intraportal IAK in uremic patients with the Edmonton protocol.

Does the effect of matrix remodeling after liver regeneration impair the decellularization process?

Franziska MulbBach a, Utz Settmacher b, Olaf Dirsch c, Chichi Xie a, Uta Dahmen a

a University Hospital Jena, Department of General, Visceral and Vascular Surgery, Experimental Transplantationsurgery, Jena, Germany; b University Hospital Jena, Department of General, Visceral and Vascular Surgery, Jena, Germany; c Klinikum Chemnitz gGmbH, Institute of Pathology, Dr. Panofsky-Haus, Chemnitz, Germany

Background: The decellularization and repopulation of liver scaffolds is an innovative strategy in the field of liver engineering. Liver resection leads to a liver regeneration and matrix remodeling. We aim at assessing the impact of matrix
remodeling on decellularization using a regenerated liver longterm after partial hepatectomy. We want to assess the integrity of the vascular tree by subjecting the sample to micro-CT. **Material and Methods:** Explanted normal (n=10) and regenerated livers (n=6) more than 6 months after 70% partial hepatectomy from C57Bl/6N-Mice were subjected to portal perfusion with 1% Triton X-100 followed by 1% SDS (1ml/min). When the resulting scaffolds appeared translucent samples were taken for histological analysis (HE, EvG, PAS, Laminin) and DNA quantification. The scaffolds were injected with Microfil® and subjected to ex vivo imaging using µCT. For visualization of the vascular tree on the organ scale we used electron microscopy. **Result:** Decellularization using perfusion with Triton X-100 and SDS was successful in normal and regenerated livers. Upon histological examination, the scaffolds were free of cellular or nuclear components. Similarly, the amount of residual DNA was virtually undetectable. The integrity of the extracellular matrix and the vascular tree in the acellular scaffolds was also similar in both cases. **Conclusion:** This study demonstrated the feasibility of the decellularization irrespective of a comparatively mild pathological impairment. Matrix remodeling as indicated by histology did not impair the decellularization process. The imaging data also confirmed the integrity of the vascular tree. Our results build the foundation for further studies using organs with more severe pathological conditions.

**OP-62**
Cytotoxicity of cyanoacrylate-based tissue adhesives and preclinical in vivo biocompatibility in abdominal wall repair

Bárbara Pérez-Köhler a, b, Sandra Sotomayor c, d, b, Gemma Pascau a, b, Marta Rodríguez a, b, Andrée Kuhnhardt a, Mar Fernández-Gutiérrez a, b, Julio San Román d, b, Juan Manuel Bellón a, b

a Department of Surgery, Medical and Social Sciences. Faculty of Medicine and Health Sciences. University of Alcalá, Madrid, Spain; b Biomedical Research Networking Centre on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain; c Department of Medicine and Medical Specialities. Faculty of Medicine and Health Sciences. University of Alcalá, Madrid, Spain; d Biomaterials Group, Institute of Polymer Science and Technology (ICTP-CSIC), Madrid, Spain

**Background:** Cyanoacrylate(CA)-based tissue adhesives, although not widely used, are a feasible option to fix a mesh during abdominal hernia repair, due to their fast action and great bond strength. Their main problem, toxicity, is being solved increasing the length of their alkyl chain. The objective was to assess cytotoxicity and in vivo biocompatibility, of different CAS (Glubran II(n-butyl)/Ifabond(n-hexyl)) and a non-marketed longer side-chain CA (OCA(n-octyl)). **Material and Methods:** Formaldehyde release, cytotoxicity of unpolymerized(UCA) and polymerized CAS(PCA) were evaluated by flow cytometry and alamarBlue assays. In preclinical evaluation partial defects were created in the rabbit abdominal wall and repaired fixing polypropylene meshes using CAS. 14 days post-implant, animals were euthanized for morphological studies, macrophage response and cell damage analysis. **Result:** Formaldehyde release was lower as the molecular weight of the monomer increased. The longest side-chain(OCA), showed the highest cytotoxicity in contact with UCA. However, after polymerization, was the one which showed better behavior. In vivo all CAS promoted optimal mesh fixation without displacements or detachments. Seroma was evident in Glubran, (four of six animals:4/6) and Ifabond (2/6), in OCA was reduced (1/6). Significantly greater macrophage response was observed in groups fixed with Glubran/Ifabond vs. suture/OCA. TUNEL-positive cells were significantly higher in Glubran/OCA vs. suture. **Conclusion:** The OCA, although mild formaldehyde released, was the most cytotoxic during polymerization but the least once cured. CAS promoted proper mesh fixation, to replace suturing techniques in hernia repair, showing good tissue integration and effective short term biocompatibility, with the slightest seroma and macrophage response shown by OCA. Acknowledgments: Financial support for this research was provided by the Spanish Ministry of Economy and Competitiveness through the research project SAF2014-55022-P.

**OP-63**
Micro-rheological and organ microcirculatory investigations for evaluating the effect of various treatment methods of abdominal compartment syndrome in a porcine model

Norbert Nemeth c, Gabor Varga b, Adam Deák b, Adrienn Csiszko c, Klaudia Balog c, Viktoria Sogor a, Zoltan Goda c, Katalin Peto b, Zsolt Szentkereszty c

a Department of Operative Techniques and Surgical Research, Faculty of Medicine, University of Debrecen, Debrecen, Hungary; b Department of Operative Techniques and Surgical Research, Faculty of Medicine, University of Debrecen, Debrecen, Hungary; c Institute of Surgery, Faculty of Medicine, University of Debrecen, Debrecen, Hungary; d Department of Information Technology, Faculty of Informatics, University of Debrecen, Debrecen, Hungary

**Background:** Surgical treatment of abdominal compartment syndrome (ACS) is still a huge challenge in the clinical practice. In application of negative pressure wound therapy (NPWT) the microcirculation of intraabdominal organs and the related micro-rheological alterations are not completely known. We aimed to investigate this issue in a porcine model (permission: 13/2014/DEMAB). **Material and Methods:** Juvenile Hungahib pigs were anesthetized and tracheostomy for assisted ventilation, unilateral cannulation of external jugular vein and femoral artery for hourly blood samplings/hemodynamic measurements, and epicystostomy for urine collection were performed. Via a suprapubic incision a
silicone bag was placed intraabdominally and filled with physiological saline solution up to 30 mmHg pressure. After 3 hours the bag was sliced-up, and median laparotomy happened. The temporary abdominal wall closure (for 2 hours) was done by suturing Bogota-bag (n=6), or vacuum Vivano-sets at -50 mmHg (n=7), -100 mmHg (n=7), or -150 mmHg (n=6). Implanted sensors monitored the intraabdominal pressure. Hematological and hemorheological panels were determined. Before and after treatment laser Doppler flowmetry was applied on the liver, kidney, small bowel, greater omentum and the pancreas. Result: Blood viscosity increased in -150 mmHg group by the end of treatment. Erythrocyte aggregation increased in Bogota and -150 mmHg groups (M10s index; -150 vs.-100: p=0.024, and deformability worsened (EImax/SS1/2 parameter; -150 vs.-100: p=0.002, vs.-50: p=0.006). The NPWT groups' microcirculatory values showed better results on intestine and on greater omentum. Conclusion: In summary, applying the Bogota-bag and the -150 mmHg vacuum set showed deteriorative microcirculatory and micro-rheological results compared to the settings at -100 or -50 mmHg.

OP-65
Effect of nanoparticles-induced hyperthermia for colorectal liver metastases on the healthy liver tissue

Borja Herrera De La Parte a, Ignacio García-Alonso Montoya b, Mireia Irazola Duñabeitia c, Nestor Etzebarri Loizate b, Eneko Garoio d, Irati Rodrigo Arrizabalaga d, Tarik Chaoui-El-Kaid e, Francisca Javier Aguayo Gre-dilla e, Alberto Saiz-López f, Jose Javier Ecevaria Uraga f

a Department of Surgery and Radiology UPV/EHU, Leioa, Spain; b Department of Analytical Chemistry UPV/EHU, Leioa, Spain; c Department of Applied Physics II (UPV/EHU), Leioa, Spain; d Department of Applied Physics II UPV/EHU, Leioa, Spain; e University Hospital of Basurto, Bilbao, Spain; f Hospital of Galdakao-Usansolo, Bilbao, Spain; g Hospital of Galdakao-Usansolo, Galdakao, Spain

Background: We have successfully used magnetic-nanoparticles-induced hyperthermia (HT) to treat colorectal liver metastases in rats. To check if HT induces damage to the liver we have analysed serum enzymes and metabolites of liver tissue. Metabolomic is the study of endogenous small molecules (< 1,500 Da) found in biofluids, tissues, organs or organism for the understanding of metabolic pathways and biological processes in response to stressing factors. Material and Methods: Five groups rats (n=5) have been used: control, saline-infused (12h), tumour + HT (12h), tumour + HT (10d), healthy + HT (10d). After 12h or 10d, blood was retrieved and the liver removed. 1H-nuclear-magnetic-resonance spectroscopy (1H-NMR) was used to search for possible diagnostic biomarkers of HT effects on the rat liver tissue. All the data obtained from the hydrophilic fraction of the tissues were analysed and modelled using chemometric tools. Result: Liver enzymes (ALT, AST) were significantly increased both in saline-infused (128 UI/l, 202 UI/l) and in tumour + HT groups after 12h (137 UI/l, 426 UI/l), but not after 10d (35 UI/l, 98 UI/l). CK and LD were also increased in saline infused after 12h (180 UI/l, 208 UI/l), but not in the other groups. The 1H-NMR metabolomic study showed that control liver and tissue from saline infused animals present a different distribution of glutamine, glutamate, choline, phosphatidylcholine, taurine, glucose, lactate and alanine SEMS, however, did have significantly fewer temporary stomas constructed (p=0.04). No SEMS-related complications occurred in BTS patients, in the palliative group, however, one stent-related perforation, three stent migrations and five stent re-obstructions were observed. Three re-obstructions could be treated with re-stenting, all other complications required surgical intervention. Conclusion: SEMS placement for MOPC appears to be a relatively feasible and safe alternative for emergency resection in both the curative and palliative setting. SEMS provides rapid relief of obstruction and avoids stoma construction, which could positively influence quality of life.

OP-64
A Case-Matched Comparative Study of Self-Expandable Metal Stent placement and Emergency Resection in the management of Malignant Obstructions of the Proximal Colon

Femke J Amelung a, Werner A Draaisma b, Esther Cj Consten c, Peter D Sierssema b, c, Frank Ter Borg d

a Meander Medical Center, Amersfoort, the Netherlands; b Radboud Medical Center, Nijmegen, the Netherlands; c Academic Medical Center Utrecht, Utrecht, the Netherlands; d Deventer Hospital, Deventer, the Netherlands

Background: Traditionally, patients with a malignant obstruction of the proximal colon (MOPC) are treated with emergency resection. However, recent data suggest that Self-Expandable Metallic Stent (SEMS) placement could lower mortality and morbidity rates. This study aimed to compare both treatment options for MOPC. Material and Methods: All consecutive patients that underwent SEMS placement for MOPC between 2004-2015 were retrospectively identified and matched (1:4) according to age, gender, ASA-score, tumor location, surgical approach and pTNM-stage with patients treated with emergency resection. SEMS placement is the standard of care at our institution; emergency resection is only performed when colonic perforation is suspected. Result: In total, 41 patients received SEMS placement for MOPC; in 19 patients SEMS served as a definite palliative measure and in 22 as bridge to surgery (BTS). Technical and clinical success rate were 90.5% and 88.1%, respectively. No significant differences between SEMS and emergency resection were found regarding morbidity and mortality rates, the number of radical resections and the number of primary anastomoses. Patients treated with
among others. **Conclusion:** Both surgical manipulation of the liver pedicle for nanoparticles infusion and HT, induce certain damage to the liver, but 10 days after the treatment it cannot be observed anymore.

**OP-66**

Mechanical properties of an explanted mesh used in pelvic prolapse: Influence of healing time

Lilia Bougherara a, b, Guillaume Doucée a, b, Annie Morch c, d, Mathias Briëu c, d, Michel Cosson a, e, Chrystèle Rubod a, e

a Department of Gynecology, Jeanne de Flandre hospital, Lille, France; b University of Lille 2, Lille, France; c Ecole Centrale Lille, Lille, France; d LML – CNRS UMR 8107, Lille, France; e LML – CNRS UMR 8107 – Ecole Centrale de Lille, Lille, France

**Background:** Healing process changes the mechanical behaviour of meshes used in pelvic prolapse. Moreover, mechanical properties of meshes play a key role in the functional outcome of surgical treatment. However, there is little information about influence of healing time on these properties. This is why we built an experimental protocol on rats to study influence of healing time on the mechanical behaviour of meshes. This project has been sponsored by the French National Agency for Research (ANR-13-TEC-0003-01). **Material and Methods:** A polypropylene mesh was implanted in the muscle wall of 30 rats for 4, 6, 8, 12 and 20 weeks. Uni-axial tension tests were performed on explanted tissue to study mechanical behavior of meshes, according to Rivlin-Mooney’s model. This involves two stiffness coefficients for high and low deformation (C1 and C0) that we checked against different implantation times. A p-value of 0.05 was considered significant. Our project received a favorable opinion from the Ethics Committee. **Result:** 6.66% of deaths and 16.6% of mesh exposure were registered. Explants rigidity evolved over time: C0 was not influenced by time of implantation (p = 0.4) unlike C1 which increased significantly during the first 3 months (p = 0.03) before stabilizing (p = 0.89). **Conclusion:** A minimum of a 12-weeks implantation time is required on rats in order to stabilize meshes’ mechanical properties. This new data will be useful to design better meshes for genital prolapse.

**OP-67**

Monoclonal Antibody Against Transforming Growth Factor Beta – 1 Does Not Influence Liver Regeneration after Resection in Large Animal Experiment

Richard Palek a, b, Vaclav Liska a, b, Jan Bruha a, b, Ondrej Vycital a, Zbynek Tonar a, b, Hynek Mirka c, Kristyna Bajcurova c, Lenka Haidingerova c, Jan Benes c, Martin Skala a, Vladislav Treska a

a Department of Surgery and Biomedical Center, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic; b Department of Histology and Embryology and Biomedical Center, Faculty of Medicine in Pilsen, Charles University in Prague, Pilsen, Czech Republic; c Department of Imaging Methods and Biomedical Center, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic; d Department of Anesthesiology and Biomedical Center, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic

**Background:** In this study, we wanted to establish a large animal model of toxic liver injury and test the ability of a monoclonal antibody against TGFβ (MAB-TGFβ) to increase liver regeneration capacity. The second aim was to evaluate the degree to which early preoperative administration of MAB-TGFβ influenced hepatic parenchyma regeneration following healthy liver resection in a swine experimental model. **Material and Methods:** Methods and results were divided in two parts to reach intelligibility of experiment. Toxic liver injury was induced by alcohol consumption and intraperitoneal administration of carbon tetrachloride to piglets for 10 weeks. Twenty-four hours after liver resection, MAB-TGFβ was administered to the experimental group and a physiological solution to the control group. In the second part of the study either MAB-TGFβ or a saline solution control were administered at 12 and 6 days prior to liver resection. Observation and follow up including ultrasound and biochemical tests was performed throughout the entire experiment. **Result:** MAB-TGFβ didn’t influence regeneration capacity of liver parenchyma in both experiments. However we found no side effects of MAB-TGFβ administration. **Conclusion:** We established a large animal model of toxic liver injury comparable with CASH. The achieved toxic injury was probably more extensive than occurs in CASH, and there was no effect on liver regeneration by the MAB-TGFβ administration. The usage of MAB-TGFβ in oncological treatment could be promising as we found no side effects after administration of this monoclonal antibody. The work was supported by the project CZ.1.05/2.1.00/03.0076 from European Regional Development Fund.
OP-68
FXR agonist obeticholic acid induces liver growth but exacerbates biliary injury in rats with obstructive cholestasis

P.B. Olthof a, R.F. Van Golten a, D.A. Lionarons b, c, M.J. Reiniers d, J. Verheij e, P.L. Jansen f, S.W. Olde Damink d, F.G. Schaap g, T.M. Van Gulik a, M. Heger a

a Academic Medical Center, Amsterdam, the Netherlands; b Tygat Institute for Gastrointestinal and Liver Research, Amsterdam, the Netherlands; c London Research Institute, London, United Kingdom; d NUTRIM School for Nutrition, Toxicology and Metabolism, Maastricht University, Maastricht, the Netherlands

Background: Obstructive cholestasis impairs liver regeneration following major hepatectomy and compromises postoperative outcomes. The bile salt receptor FXR (farnesoid X-receptor) is a key mediator of liver regeneration for which synthetic agonists have recently been developed. We examined the effect of FXR-agonist obeticholic acid (OCA) on liver regeneration in a rat model of bile duct ligation (BDL) and partial hepatectomy. Material and Methods: Male Wistar rats (300-325g) were subjected to either sham-surgery or BDL at t=0, followed by partial hepatectomy (PHx) with restoration of the enterohepatic circulation at t=7. BDL rats received either daily oral gavage with OCA (10mg/kg) or vehicle from t=0 until sacrifice. Rats were sacrificed on days 2, 5, 9, 10, or 12. Outcome parameters included liver weight, histological scoring, clinical chemistry, and transcriptional analysis of regeneration pathways. Result: At t=7, liver weight was higher in the BDL-OCA group than in the control and BDL-vehicle group (6.6±0.4 versus 4.0±0.1, and 5.3±0.5g respectively, P<0.001). Increased proliferation at t=7 was reflected by more Ki67+-hepatocytes and increased cyclinD1 mRNA expression in the BDL-OCA group (P<0.01, respectively). OCA transiently increased alkaline phosphatase (~8-fold), and alanine aminotransferase (~3-fold) levels at t=7 in BDL rats. Histological assessment of hepatocellular necrosis, ductular reaction, and fibrosis did not differ between BDL-OCA and BDL-vehicle groups (P=0.176). After PHx, liver regrowth was impaired in BDL-vehicle rats at t=12 (P<0.05) whereas OCA-BDL rats reached similar liver size as control rats. Conclusion: OCA induces liver growth in cholestatic rats but exacerbates biliary injury during obstructive cholestasis. Treatment after biliary drainage might improve liver regeneration in post-cholestatic patients undergoing liver resection.

OP-69
Establishment of a ALPPS Model in Rats

Weiwei Wei a, Tianjiao Zhang a, Sara Zafarnia b, Andrea Schenk c, Chichi Xie a, Chunyi Kan a, Olaf Dirsch d, Utz Settmacher b, Uta Dahmen a

a Jena University Hospital, Jena, Germany; b RWTH Aachen University, Aachen, Germany; c Fraunhofer Institute for Medical Image Computing MEVIS, Bremen, Germany; d Chemnitz hospital, Chemnitz, Germany

Background: We established a model of Associating Liver Partition with Portal vein ligation for Staged-hepatectomy (ALPPS) in rats and examined the role of revascularization in intrahepatic size regulation. Material and Methods: Anatomical study was performed using imaging technique. The ALPPS procedure consisted of a 70% portal vein ligation (PVL, occluding the left median, left lateral and right lobes), parenchymal transection (median lobe) and 10% hepatectomy (PHx, caudate lobe). Rats in control group were subjected to 70% PVL and 10% PHx only. The extent of hepatic atrophy or regeneration of individual liver lobes was measured. The formation of collaterals within the portal vein system was examined by visualizing the vascular tree. Result: Anatomical study revealed a close spatial relationship between the demarcation line and the middle median hepatic vein. Transection was achieved via stepwise clamping, followed by 2-3 parenchyma-preserving piercing-sutures on both sides of the clamp. Atrophy of the ligated liver lobes was significantly enhanced after ALPPS compared to the control group. In contrast, the non-ligated lobes experienced a significantly higher increase in relative weight and a higher proliferation index on the first postoperative day. Porto-portal collaterals were only observed in the control group. Conclusion: We developed an anatomically precise technique for parenchymal transection. The lack of a dense vascular network between the portalized and deportalized lobes may play an important role in augmenting atrophy and accelerating regeneration.

OP-70
Developing ALPPS models: Question marks and pitfalls

Oliver Koos a, Andras Fulop M.D. a, Andras Budai M.D. a, Tibor Kovacs M.D. a, Dora Tihanyi a, Kristof Illes b, Pekli Damján M.D. a, Péter Önody M.D. b, Attila Szijarto M.D. b

a Experimental Research Centre, 1st Department of Surgery, Semmelweis University, Budapest, Hungary; b HPB Surgical Research Center Hungary, 1st Department of Surgery, Semmelweis University, Budapest, Hungary

Background: ALPPS (Associating Liver Partition and Portal vein Ligation for Staged hepatectomy) is a novel, effective yet risky two-staged hepatectomy. To better understand the working mechanics and to develop patient safety, suitable
animal models must be created. Our aim was to compare the different ALPPS animal models designed and established by our research group by their surgical applicability.

**Material and Methods:** Male wistar rats and swine were used. The rats underwent 75–80% portal deprivation by the occlusion of the branches leading to the right and left lateral, right medial and caudal lobes, liver splitting was carried out according to the falciiform ligament. As for swine the left lateral and medial lobes (involving 55–60% of liver) and medial part of the medial lobe were portal ligated, and the right lateral lobe (accounting for 20–24%) was partially resected. Medial lobe was transected in the midline. **Result:** Critical remnant liver volume can be reached easily in both species. In swine the localization of the caval vein allows only left hepatectomies. Because of the lobular structure of the rat liver humanization by ligatures is essential to have a human-like lobe. It can only be done preserving the portal circulation of the medial lobe complex (35% of the liver) although it is not fully applicable to human anatomy. Both species presented minuscule number of porto-portal anastomoses which makes human interpretation doubtful. **Conclusion:** According to our results the rat model is superior in answering basic experimental questions concerning ALPPS, while the porcine model seemed to be unfitting for translational research purposes.

**OP-71**

**Liver function and hepatobiliary scintigraphy following portal vein ligation – more than what meets the eye**

Tibor Kovacs MdB, Andras Fulop MDb, Andras Budai MDb, Kristof Illies C, Oliver Kos C, Gabor Lotz MDb, Attila Szijarto Md, Attila Szijarto MdPhd

**Background:** Risk reduction of posthepatectomy liver failure following extended tumorous liver resection often necessitates surgical induction of liver regeneration. The selective portal vein ligation (PVL) of infiltrated liver segments is a successful method in inducing ipsilateral atrophy and contralateral hypertrophy of liver lobes. In contrast to the consensus on morphological changes following PVL, literature data on the alteration of hepatic function remains controversial. Aim of the study was the evaluation of temporal characteristics of hepatic function and morphology following PVL.

**Material and Methods:** PVL affecting approximately 80% liver parenchyma was performed on male Wistar rats (Σn=36). Indocyanine green (ICG) clearance, liver weight and histopathological analysis (HE; Ki-67) were determined preoperatively and 24h/48h/72h/168 hours after surgery (n=6 each). Different animals (n=6) were subjected to serial radiological diagnostics in the above time points. MRI-volumetry visualised liver morphological changes, whereas 99mTc-mebrofenin hepatobiliary scintigraphy (HBS) quantified global uptake (B1/2, excretion: DSTART) and regional (Tmax, T1/2) hepatic function. **Result:** Ligated (L) lobes under went atrophy (mL/mBODY%_0h=3,83%±0,27%; mL/mBODY%_168h=0,92%±0,22%), while non-ligated (NL) lobes hypertrophied (mNL/mBODY%_0h=1,0%±0,1%; mNL/mBODY%_168h=3,29%±0,22%) and weight changes strongly correlated with MRI volumetric data (p<0,01). ICG-clearence (PDR, RT15) and HBS (B1/2, DSTART) both displayed transitional suppression of global hepatic function, which recovered by the 168thh. PVL decreased regional mebrofenin excretion in both lobes, however, after 72h, NL lobes gradually retained their original values, ultimately exceeding excretion rates of L lobes by the 168thh (CpsNL/L0h=1,3; CpsNL/L168h=3,2). **Conclusion:** Following PVL-induced liver regeneration, 99mTc-mebrofenin HBS verified a shift in hepatic function towards NL lobes, which is in accordance with ICG-clearence and the observed morphological changes.

**OP-72**

**Temporal characteristics of drug metabolism following portal vein ligation**

Andras Fulop Md, Kristof Illies C, Andras Budai Md, Tibor Kovacs Md, Attila Szinvai C, Kristof Kovacs C, Attila Szajart MdPhd

Experimental Research Centre, 1st Department of Surgery, Semmelweis University, Budapest, Hungary

**Background:** Portal vein ligation (PVL) is a suitable method in preventing hepatic failure after extended liver resections. Selective ligation of portal branches simultaneously provokes ipsilateral atrophy and contralateral hypertrophy of the respective liver lobes. Although the morphological alterations of liver regeneration are well-known, their relation to certain hepatic functions like drug metabolism, characterised by cytochrome p450 (CYP450) enzyme activities, is still poorly documented. The aim of this study was to evaluate the changes of hepatic drug metabolism following PVL.

**Material and Methods:** Male Wistar rats (n=30) underwent pentobarbital sleeping test to measure induction- (ti) and sleeping (ts) times before and 24/48/72/168/336 hours after PVL affecting approximately 80% of liver parenchyma. Blood and tissue samples were collected. The ligated (L) and non-ligated (NL) liver lobes were weighed; the intensity of necroapoptosis (Suzuki-score) and mitosis was determined by histopathological analysis, and CYP450 mRNA expression was measured with PCR. **Result:** During the sleeping tests, over the first three days ti shortened and ts was prolonged (p<0,05). From then on, ti recovered to exceed its starting value (t0=3,33±0,39; t24=2,69±0,1); 1336=6,1±3,7 minutes) while ts slowly decreased (t0=68±8; t72=110±22; t336=79,12±12 minutes) (p<0,05). L lobes underwent necropoaptotic atrophy (mL/mBODY%0=3,77±0,3%; mL/mBODY%336=0,62±0,3%), while NL lobes showed excessive mitotic activity causing hypertrophy (mNL/mBODY%0=1,17±0,1%; mNL/mBODY%336=3,37±0,3%).
OP-73
Effect of partial hepatectomy on the seeding and growing of liver metastases in a rat model

Fedoriv Ivan a, Ignacio García-Alonso b, Borja Herrera De La Parte b, Mikel González-Arribas b, Iñigo Cearea b

a Ivanо-Frankivsk national medical university, Ivano-Frankivsk, Ukraine; b Dpt. of Surgery and Radiology, Faculty of Medicine UPV/EHU, Leioa, Spain

Background: Partial hepatectomy (PH) is the best therapeutic option for patients with liver metastases. However, liver resection causes the release of growth factors (GF), which can promote the proliferation of the tumoral cells still present in the patient. Material and Methods: Under isoflurane anesthesia, a midline laparotomy was performed for clamping the left lateral lobe artery (LLA) of 18 WAG/RijCrI male rats. After that, tumour induction was done by seeding 250,000 syngeneic CC-S31 cells into the spleen; five minutes later splenectomy was performed in all animals and another 10 minutes the clamp of the LLA was removed and, in the PH-group, the left lateral lobe of the liver was excised. Result: The percentage of liver surface covered with metastases was statistically significantly higher in the animals that were subjected to partial hepatectomy, compared to animals which were not hepatectomised (46.98 ± 8.76% vs. 18.73 ± 5.65%; p<0.05). The right lateral lobe (RL) showed no difference in both hepatectomised and no hepatectomised animals (45.38 ± 11.24% vs. 32.69 ± 10.19%; p>0.05). The paramedian (PL) and caudate lobe (CL), showed significant differences in liver surface occupied by metastases in both groups of animals. Finally, analyzing the left lateral lobe (LL) surface of non-hepatectomized animals occupied by metastases, it may be seen that it is statistically significantly lower than any of the other lobes, only 7.28 ± 2.55%. Conclusion: In this experimental model, the process of seeding & growth of colorectal cancer cells in the liver clearly benefits from the growth factors produced following partial liver resection.

OP-74
Effectively targeting mitochondrial dysfunction with L-alpha glycerylphosphorylcholine during liver ischemia-reperfusion

Gerda Strifler a, Eszter Tolyol b, Mihaly Boros a, Petra Hartmann b

a Institute of Surgical Research, University of Szeged, Szeged, Hungary; b drhartmann.petra@gmail.com, Szeged, Hungary

Background: The mitochondrion is major source of intracellular reactive oxygen species (ROS) formation mainly at the level of Complexes I and III, but current strategies are not effective in ameliorating mitochondrial oxido-reductive stress-mediated diseases. We hypothesized that L-alpha-glycerylphosphorylcholine (GPC), a deacylated derivative of phosphatidylcholine, can influence the respiratory activity of liver mitochondria and by this way can exert hepatoprotective effects. Material and Methods: Sprague-Dawley rats were subjected to sham operation or standardized liver ischemia-reperfusion (IR), with or without GPC administration (50 mg/kg iv; n=6/group). Liver biopsy samples were subjected to high-resolution respirometry (Oroboros, Austria) for detailed investigation of mitochondrial electron transport chain functions. The activities of major ROS producing enzymes, such as tissue xanthine oxidoreductase (XOR), NADPH-oxidases and myeloperoxidase (MPO) and ROS formation in parallel were reduced. Conclusion: Mitochondrial dysfunction is primary in the chain of IR-induced events. GPC by preserving the mitochondrial Complex I function reduces the activities of major intracellular superoxide generating enzymes and the biochemical signs of oxidative stress. Overall the data suggest that GPC is a mitochondria-targeted compound that maintains mitochondrial energetics and suppresses ROS production. Supported by OTKA grant K104656.

OP-75
Prevention of postoperative intraperitoneal adhesion by a Pectin-Honey Hydrogel

Gessica Giusto, Cristina Vercelli, Andrea Audisio, Rosangela Odore, Emanuela Morello, Selina Iussich, Marco Gandini

Department Veterinary Sciences, University of Turin, Grugliasco (TO), Italy

Background: Background: Adhesions formation are post-operative surgical complications. Liquid honey has been used intraperitoneally to reduce their incidence. Since solid
barriers are considered more effective than solutions in decreasing postoperative intra abdominal adhesion formation, a new pectin-honey hydrogel (PHH) was produced and its effectiveness evaluated in a rat cecal abrasion model. **Material and Methods:** Material and Methods: Standardized cecal/peritoneal abrasion was performed thought laparotomy in n° 48 Sprague Dawley adult rats to induce peritoneal adhesions. Rats were randomly assigned to a control (C) and a treatment (T) group. In group T, PHH was placed between the injured peritoneum and cecum. Animals were sacrificed post surgery at day 15. Adhesions were evaluated macroscopically and adhesion score recorded and compared among groups. Inflammation, fibrosis and neovascularization were histologically graded and compared. **Result:** Results: In group C 17 out of 24 (70.8%) animals developed adhesions between cecum and peritoneum, while in group T only 5 out of 24 (20.8%) did (p=0.0012). In group C one rat had adhesion score 3, sixteen had score 2, and seven rats had score 0. In group T four rats had adhesion score 2 and one rat had an adhesion score 1. Significant lower grades of inflammation, fibrosis, and neovascularization were seen in group T (p= 0.007, p=0.001, p=0.002, respectively). **Conclusion:** Conclusion: PHH is a novel absorbable barrier that proved effective in abdominal adhesions prevention in a cecal abrasion model in rats.

**OP-76**
The effects of Disba-01 on the wound healing and extracellular matrix in incisional hernia model in rats

Ilkin Ismayilov a, Tugba Taskin Turkmenoglu b, Mahir Nasirov b, Kursat Dikmen c, Hasan Bostanci c, Osman Yuksel a, Emin Ersoy a

a Gazi University Medical School Department of Surgery, Ankara, Turkey; b Diskapi Training Hospital Department of Pathology, Ankara, Turkey

**Background:** Incisional hernias (IH) are usually found as a complication of about 11% of abdominal wall closures. Matrix metallopeptidases (MMPs) were also suggested to have an important role in the pathogenesis of IH. Integrins connect the ECM components and the cell cytoskeleton. Disintegrins may also bind to integrins and block their functions. The hypothesis is that the Disba-01 (Disintegrin) would be helpful in the tissue repair by the blockage of the increasing MMP-2 activity and tissue remodeling. **Material and Methods:** Thirty-six female Wistar-Albino rats were divided into four groups. Group 1 were fed rat chow and allowed water ad libitum for 7 days + laparotomy 7 days later(control); group 2 were fed rat chow and allowed water ad libitum for 7 days + laparotomy 7 days later and received 12 mg/kg/day i.p. 5-FU on 0, 1 and 2nd day after the operation; group 3 were fed rat chow + 100 mg/day glutamine and allowed water ad libitum for 7 days + laparotomy 7 days later ; group 4 were fed rat chow + 100 mg/day glutamine and allowed water ad libitum for 7 days + laparotomy 7 days later + received 12 mg/kg/day i.p. 5-FU on 0, 1 and 2nd day after the operation. The abdominal layers and skin incision were closed en bloc with a running 3-0 monocryl (Ethicon®) suture. Sutures were removed on postoperative day 7 in all groups, and the abdominal bursting pressures were measured and recorded. Tissue samples were taken from the incision line for histopathological evaluation and hydroxyproline content measurement. **Result:** The bursting pressure was significantly lower in group 2 than other groups. The lowest mean tissue hydroxyproline and bursting pressure were reported in group 2. Histopathological findings were better in groups of glutamine. **Conclusion:** The perioperative dietary supplement of glutamine improved impaired wound healing in adjuvant 5-FU-treated rats.

**OP-77**
Oral glutamine improves incisional wound healing in 5-fluourouracil treated rats

Burak Kavakaloglu a, Ferid Muftu b, Omer Faruk Demir c, Mevlut Recep Pekcici d, Halil Yaman e

a Kudret International Hospital, Ankara, Turkey; b Dr. Dt. Ferid Muftu Dentistry Clinic, Ankara, Turkey; c Ankara Etlik Maternity and Women’s Health Teaching Hospital, Ankara, Turkey; d Ankara Training Hospital, Ankara, Turkey; e Clinical Biochemistry at Turkish Armed Forces, Gölhane Military Medical Academy, Ankara, Turkey

**Background:** Adjuvant treatment is often given for advanced malignancies. Antineoplastic agents impair the wound healing. It has been reported that dietary glutamine supplement improves wound healing. Therefore, we investigated the effects of perioperative oral glutamine supplement on abdominal wounds impaired by 5-fluorouracil. **Material and Methods:** Thirty-six female Wistar-Albino rats were divided into four groups. Group 1 were fed rat chow and allowed water ad libitum for 7 days + laparotomy 7 days later(control); group 2 were fed rat chow and allowed water ad libitum for 7 days + laparotomy 7 days later and received 12 mg/kg/day i.p. 5-FU on 0, 1 and 2nd day after the operation; group 3 were fed rat chow + 100 mg/day glutamine and allowed water ad libitum for 7 days + laparotomy 7 days later ; group 4 were fed rat chow + 100 mg/day glutamine and allowed water ad libitum for 7 days + laparotomy 7 days later + received 12 mg/kg/day i.p. 5-FU on 0, 1 and 2nd day after the operation. The abdominal layers and skin incision were closed en bloc with a running 3-0 monocryl (Ethicon®) suture. Sutures were removed on postoperative day 7 in all groups, and the abdominal bursting pressures were measured and recorded. Tissue samples were taken from the incision line for histopathological evaluation and hydroxyproline content measurement. **Result:** The bursting pressure was significantly lower in group 2 than other groups. The lowest mean tissue hydroxyproline and bursting pressure were reported in group 2. Histopathological findings were better in groups of glutamine. **Conclusion:** The perioperative dietary supplement of glutamine improved impaired wound healing in adjuvant 5-FU-treated rats.
**OP-78**

Possible effects of platelet rich plasma and mesenchymal origin stem cells on the disrupted wound healing

Oktyay Aydin a, Gokhan Karaca a, Faruk Pehlivanli a, Canan Altunkaya b, Ibrahim Tayfun Sahiner c, Huseyin Ozden a, Hafize Uzun c, Mevlut Recep Pekcici f

a Assistant Professor, Kirikkale University, Faculty of Medicine, Department of General Surgery, Kirikkale, Turkey; b Assistant Professor, Kirikkale University, Faculty of Medicine, Department of Pathology, Kirikkale, Turkey; c Assistant Professor, Hittit University, Faculty of Medicine, Department of General Surgery, Corum, Turkey; d General Surgeon, Alaca State Hospital, Department of General Surgery, Corum, Turkey; e Professor, Istanbul University, Department of Biochemistry, Istanbul, Turkey; f Associate Professor, Ankara Training and Research Hospital, Department of General Surgery, Ankara, Turkey

**Background:** Platelet rich plasma (PRP) and mesenchymal origin stem cells (MSC) have known antiinflammatory and antioxidative effects. We aimed to investigate the possible promoting effects of the PRP and MSC on the wound healing.

**Material and Methods:** 48 wistar type male rats were divided into four groups as sham, control, MSC and PRP groups. 10 mg/kg hydrocortisone was injected for disrupting the wound healing to all rats except in the sham group. Dorsal 4 cm full thickness skin incision was performed on all rats. In the MSC group, 3 million cells/1 ml saline was applied to the incision. Then all the incisions were sutured. On the 10th day, all the incision areas were removed en bloc.

Tissue hydroxyproline (OHP), TNF-α and interleukin 1 (IL-1) levels were measured. Pathologic investigation was also performed.

**Result:** Fibroblast and collagen fiber counts were higher and inflammatory changes were more severe in the PRP group than the control and MSC groups. Reepithelialization wasn’t significantly different between the groups. OHP levels were higher than the control group either in the MSC or in the PRP groups. OHP levels were also higher in the MSC group than the PRP group. IL-1 levels weren’t different between control, MSC and PRP groups but were significantly higher compared to sham group. There wasn’t any significant difference between the MSC and PRP groups about IL-1 levels. TNF-α levels weren’t different between the groups.

**Conclusion:** Although MSC and PRP have some effects it is difficult to say that they are exact positive effects on disrupted wound healing.

---

**OP-79**

The Effects of Dextran on Ischemic Colonic Anastomotic Healing in Rats

Tebessum Cakir a, Ali Kemal Kayapinar b, Ummuhani Ozde c, Tulay Temucin Keklik d, Erdal Birol Bozanci e

a Department of Gastroenterological surgery, Turkey Yuksek Ihtisas Training and Research Hospital, Ankara, Turkey; b Department of Gastroenterological surgery, Turkey Yuksek Ihtisas Training and Research Hospital, Ankara, Turkey; c Mugla Sitki Koçman University, Mugla School of Health Sciences Department of Nutrition and Dietetics, Ankara, Turkey; d Department of Pathology, Turkey Yuksek Ihtisas Training and Research Hospital, Ankara, Turkey

**Background:** Beneficial effects of dextranol (Dx) on oxidative stress and wound healing were demonstrated. Dx administration might improve ischemic colon anastomosis healing.

**Material and Methods:** Left-sided ischemic colonic anastomoses were carried out in 70 rats and randomized into three groups, left colon anastomosis (L); ischemic left colon anastomosis (I); ischemic left colon anastomosis+ 250 mg/kg dextranol (ID); ischemic left colon anastomosis+ 500 mg/kg dextranol (IDD). Half of the rats in every group were sacrificed on the third post-operative day (POD), and half of them were sacrificed on the seventh POD. Oxidant stress markers, histopathological parameters of healing, collagen content, and anastomosis bursting pressures examined.

**Result:** Total sulfhydryl values were lower in group I than in the L, ID and IDD groups at POD7 (p<0.001). Advanced oxidation protein product concentration, hydroxyproline levels were also similar in all groups at POD 3 and POD7. Bursting pressures were similar in all groups. Neangiogenesis were higher in Group IDD than in Groups I and ID (p<0.001 and p<0.001) at POD7. The Chiu score was lower in the ID and IDD groups than in the L and ID groups (p<0.001) at POD 7. The collagen percentage was higher in Group ID and IDD than in the L group at POD3 and POD7 (p<0.001; p<0.001; p=0.005; p<0.001). The collagen percentage was higher in the IDD group than the L group at POD3 (p=0.012). Collagen maturities were similar for all groups.

**Conclusion:** Dx improved anastomosis healing mainly by decreasing oxidative stress and necrosis and increasing vascularization and collagen content.
OP-80
Sealing insufficient colonic anastomoses with cyanoacrylate tissue adhesive: An in-vivo study
Konstantinos Vakalopoulos a, Joanna Bosmans b, Kevin Van Barneveld b, Zhquiao Wu a, Ruben Vogels b, Marion Gibjels b, Johannes Jeekel a, Johan Lange a
a Erasmus MC, Rotterdam, the Netherlands; b Maastricht University Medical Centre, Maastricht, the Netherlands

Background: Tissue adhesives (TA) may be useful to strengthen colorectal anastomoses, thereby preventing anastomotic leakage (AL). Previous studies have identified potential TAs for in vivo use. In this study, the effect of 3 promising cyanoacrylate TAs on the leakage rate, strength and healing capacity of a colonic anastomosis is investigated. Material and Methods: 55 Wistar rats underwent laparotomy and transection of the proximal colon. An anastomosis was created with 4 interrupted sutures followed by either application of Histoacryl Flex, Omnex, Glubran 2 or no TA seal. A control group was included with 12 sutures and no TA seal. After 7 days rats were euthanized and scored for presence of AL. Secondary outcomes were: occurrence of bowel obstruction or adhesions, anastomotic bursting pressure and histological evaluation. Result: The highest AL rate was found in the 4-sutures group without TA (5/11) and in the Glubran 2 group (7/11). Histoacryl Flex showed the lowest AL rate (2/11). In the control group only 1 rat showed signs of AL. Histologically, the highest inflammation was found in the 4-suture group without TA and for Omnex and Glubran 2. Histoacryl Flex caused more mature collagen deposition compared to the other TA groups. Conclusion: Histoacryl Flex showed the lowest leakage rates compared to the other TA groups and to the 4 suture control group. Glubran 2 showed the highest AL rate and a high inflammatory response. Histoacryl Flex was associated with a higher and more mature collagen deposition, and seems to promote anastomotic healing.

OP-81
Hyperbaric oxygen therapy improves colorectal anastomotic healing
Zhquiao Wu a, Geesien S.A. Boersema b, Leonard F. Kroese b, Hans Jeekel b, Johan Lange b
a Peking University Cancer Hospital and Institute, Beijing, China; b Erasmus University Medical Center, Rotterdam, the Netherlands

Background: Hyperbaric oxygen treatment (HBOT) has been found to improve the healing of poorly oxygenated tissues. This study aimed to investigate the influence of HBOT on the healing in ischemic colorectal anastomosis. Material and Methods: Forty Wistar rats were randomly divided into a treatment group that received HBOT for 10 consecutive days (7 days before and 3 days after surgery), or in a control group, which did not receive the therapy. Colectomy with an ischemic anastomosis was performed in all rats. In each group, the rats were followed for 3 or 7 days after surgery to determine the influence of HBOT on anastomotic healing. Result: Five rats from each group died during follow up. No anastomotic dehiscence was seen in the HBOT group, compared to 37.5% and 28.6% dehiscence in the control group on postoperative day (POD)-3 and 7 respectively. The HBOT group had a significantly higher bursting pressure (130.9 ± 17.0 mmHg) than the control group (88.4 ± 46.7 mmHg; p = 0.03) on POD3. On POD3 and POD7 the adhesion severity was significantly higher in the control groups than in the HBOT groups (p < 0.005). Kidney function (creatinine level) of the HBOT group was significantly better than of the control group on POD7 (p = 0.001). Interestingly, a significantly higher number of CD206+ cells (marker for type 2 macrophages) was observed in the HBOT group at the anastomotic area on POD3. Conclusion: Hyperbaric oxygen enhanced the healing of ischemic anastomoses in rats and improved the postoperative kidney function.

OP-82
Local application of adipose derived mesenchymal stem cells improves outcomes of surgical treatment of intestinal fistula – experimental study
Ondrej Ryska a, Zuzana Serclova b, Ondrej Mestak b, Eva Matouskova c, Pavel Vesely b, Iveta Mrazova d
a Horovice Hospital, Horovice, Czech Republic; b Hospital Bulovka, Prague, Czech Republic; c 3rd Medical Faculty Charles University, Prague, Czech Republic; d Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Background: Conservative and surgical treatment of perianal fistulas in patients with Crohn’s disease is effective in about 40-60%. Local administration of adipose tissue derived stem cells (ADSCs) represents a new approach in human fistula treatment with mixed results. The combination of surgical (fistula tract ligation) and cell therapy can be beneficial. The aim of the study was to compare results of surgical treatment of intestinal fistula with and without additional application of ADSCs. Material and Methods: Costomty was used as a fistula model in 24 Lewis rats. These subject were randomized into two groups where fistula tract ligation without (group A) or with peristifur ADSCs application (2ml of suspension) was performed (group B). The inguinal adipose tissue was harvested from transgenic donor expressing firefly luciferase (LEW-Tg(Rosa-luc)11Jmsk; Jichi Medical School, Japan). Suspension of vital ADSCs (1-2*106 cells/ml) was obtained using collagenase technique. Fistula drainage assessment (FDA) was used to evaluate the fistula healing after 30 days. Rats were imaged in IVIS Lumina XR camera during follow-up. Result: There was no mortality after interventions. Fistula was healed in 6 (50,0%) and 11 (92%) rats in group A and B, respectively. The signal
Sevoflurane protects against hepatic inflammatory and apoptotic response secondary to lung resection surgery with one-lung ventilation

Celia Muñoz a, Francisco González-Moraga b, Lisa Rancon a, Luis Huerta a, David Rincon a, Jorge Guzman a, Carlos Simon c, Ignacio Garutti c, Elena Vara a

Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University, Madrid, Spain; a Service of Thoracic Surgery, Hospital General Universitario Gregorio Marañón, Madrid, Spain; c Service of Anesthesiology and Intensive Care, Hospital General Universitario Gregorio Marañón, Madrid, Spain

Background: Lung resection surgery (LRS) with one-lung ventilation (OLV) is associated with an intense local and systemic inflammatory response that can affect distant organs. Liver seems to be sensitive to the ischemia reperfusion injury hence it could be affected during LRS. Sevoflurane is a commonly used halogenate anesthetic that has proved to possess anti-inflammatory activity in several disorders. The aim of this study was to investigate a possible protective effect of sevoflurane on liver injury caused by LRS. Material and Methods: Twenty-four pigs undergoing LRS with OLV have been randomly assigned to receive anesthesia with propofol (control group) or with sevoflurane (sevoflurane group). Two additional groups of 12 animals each underwent thoracotomy without LRS or OLV (Sham-A), and without lobectomy but with OLV (Sham-B). Liver biopsies were taken in order to measure mRNA and protein expression of IL-1, TNFα, NFkB, IL-10, BAD, BAX, BAK and Bcl2. Result: Sham-B group showed a higher liver expression of TNFα (p<0.01), IL-1 (p<0.01), and NFkB (p<0.05) compared to Sham-A. This increase was even higher in the control group (p<0.05). On the contrary, IL-10 expression was decreased. These effects were prevented by sevoflurane administration. OLV also increased liver expression of BAD (p<0.01), BAX (p<0.01), and BAK (p<0.05), and again, these effects were absent in sevoflurane group. Conclusion: These results indicate the presence of both inflammatory and apoptotic liver response to LRS+OLV which can be attenuated by sevoflurane administration, suggesting a possible protective effect for this anesthetic against liver injury secondary to LRS. Supported by FISSPI13/00700 and PI13/0002.
Background: Despite modern surgical techniques insufficient hemostasis after liver trauma is still a major cause of morbidity and mortality after injury. Therefore, efficient hemostatic agents are indicated. In this study, we compared a novel synthetic wound sealant (MAR-VIVO-107) based on polyurethane to a widely used fibrin sealant (Tisseel). Material and Methods: Twelve German Landrace pigs were randomly assigned to two groups: a.) MAR VIVO-107 and b.) Tisseel. Anaesthesia was induced by Azaperone (3-4 mg/Kg), Atropine (0.1 mg/Kg), Ketamine (15 mg/Kg), Isoflurane (1.0-1.4 vol%) and Fentanyl (0.2-0.3 μg/Kg) were used to maintain the anaesthesia/analgiesia. The animals were operated under sterile conditions. A midline laparotomy was performed and the left liver lobe was isolated and resected, using a surgical scissor, in order to induce hepatic trauma. MAR VIVO-107 or Tisseel was applied to the resected lobe. The animals were monitored for 60 min; thereafter, the animals were sacrificed under anaesthesia. Blood and tissue samples were collected pre and post-resection for biochemical, haematological and histopathological analyses. Result: (mean±SEM; MAR VIVO-107 vs. Tisseel) Post surgical survival rate was 100% in both groups. Bleeding time was significantly higher in Tisseel (600.4±130.93s) compared to MAR VIVO-107 (244.6±48.52s). Blood loss was in trend less in the MAR Group (54.30±15.57 g vs. 75.60±23.93 g). AST levels were significantly higher in Tisseel group (69±10.98 U/L) when compared to MAR VIVO-107 (39±3.98 U/L). Conclusion: The efficacy of MAR VIVO-107 and comparable performance to the gold standard fibrin sealant Tisseel. MAR VIVO-107 permits hemorrhage control within seconds, even in a wet environment.

OP-86
A Direct Comparison of Porcine (StratticeTM) and Bovine (SurgimendTM) Acellular Dermal Matrices in Implant-Based Immediate Breast Reconstruction
Jessica Ball a, Yezen Sheena a, Dina Tarek b, Parto Forouhi c, Sarah Benyon a, Michael Irwin a, Charles Malata a, d

a Department of Plastic & Reconstructive Surgery, Cambridge University Hospital, Cambridge, United Kingdom; b Elective Medical Student, Clinical School of Medicine, University of Cambridge, Cambridge, United Kingdom; c Cambridge Breast Unit, Cambridge University Hospital, Cambridge, United Kingdom; d Postgraduate Medical Institute, Faculty of Medical Sciences, Anglia Ruskin University, Cambridge & Chelmsford, United Kingdom

Background: Acellular dermal matrices (ADMs) improve the results of immediate post mastectomy implant based breast reconstruction. Porcine (Strattice) and Bovine (Surgimend) derived ADMs are commonly used, however comparative data for different ADMs is limited. This study is the first to compare the use of Strattice and Surgimend ADMs in IBBR. Material and Methods: Method: Patients having undergone skin sparing mastectomy with immediate ADM/implant breast reconstruction from November 2013 to March 2016 were identified from a prospective register and data regarding demographics, adjuvant therapies, operative details, postoperative management and outcomes were collected retrospectively. Mastectomies were performed by an oncological breast surgeon, followed by reconstruction by one of three plastic surgeons. Result: 119 breasts were reconstructed in 81 patients (38 bilateral, 43 unilateral). Strattice was used in the first 30 breasts (25%) and Surgimend in the next 89 (75%). Mean patient age was 45 years (r=24-70). There was no difference in patient or disease characteristics or the type of auxiliary surgery. Five breasts in the Surgimend group had had previous radiotherapy (RT). 13 Surgimend and 7 Strattice breasts required adjuvant RT (p=0.24). Skin erythema was significantly less common in the Surgimend group (6% vs 20% p=0.03), with a trend towards fewer other complications including seroma (6% vs 10%), haematomas requiring return to theatre (1% vs 7%) and infections (6% vs 10%). Conclusion: This study supports experience of higher complication rates in post-mastectomy breast reconstruction with Strattice compared with Surgimend. More data comparing different ADM outcomes is needed to inform best practice.

OP-87
Human Aortic Valve Sclerosis vs Stenosis: A Comparative transcriptome profiling
Giovanni Ferrari a, Juan B Grau b

a University of Pennsylvania, Philadelphia, United States; b Valley Hospital, Ridgewood, United States

Background: Thirty to fifty percent of patients over the age of 65 present with remodeling of the Aortic Valve (AV), a condition known as AV sclerosis (AVSc). Ten percent of those patients develop symptomatic Aortic Stenosis (AS) in less than a decade. We aim to identify key signaling mechanisms that differentiate slow and fast progressors and shed lights into the differences between patients that develop AS and those that do not. Material and Methods: RNA sequencing (RNA seq) was performed on 8 AV tissues (4 slow and 4 fast progressors) from age- and gender-matched patients. The genes were considered as differentially expressed only if their adjusted p value (q value) less or equal than 0.05, and the gene enrichment analysis in Gene Ontology and biological pathways were done by DAVID. Result: There are 257 differentially expressed genes (q value \( < 0.05 \)) including 182 protein coding genes. Gene Ontology analysis, showed those genes are enriched in ECM organization (q value \( = 5.7E-4 \)); collagen fibril organization (q value \( = 5.7E-2 \)). Among those 182 genes, 116 (64%) has higher expression in stenosis and 66 (36%) has higher expression in sclerotic. 5 gene modules were generated based on WGCNA algorithm. Multiple functional enrichments of biological processes were showed for 59 genes including...
the IMMUNE disease category, cell adhesions, Reactive Oxygen Species, Matricellular proteins, and ECM receptor interaction

**Conclusion:** Here we identify additional key pathways responsible for this early pathological transition that could hold the key to delay symptoms occurrence.

---

**OP-88**

Carotid chemoreceptor oxygen sensing is imperative in hypoxia-mediated anapyrexia and hypometabolism in mice

Sebastiaan D. Hemelrijk, Thomas M. Van Gulik, Michal Heger

Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands

**Background:** Induction of hypothermia and consequent hypometabolism in mammals by pharmacological downmodulation of the thermostat could be protective in various medical situations that include ischemia/reperfusion injury. Systemic hypoxia is a trigger of thermostat downregulation, which is sensed through carotid chemoreceptors (i.e., carotid bodies, CBs). We hypothesized that carotid chemoreceptors are involved in hypoxia-mediated hypothermia. **Material and Methods:** Mice were randomly divided over four groups. Animals in group A (N=9) and B (N=8) underwent CB resection or sham operation, respectively. After 2d, animals in group A and B as well as non-operated animals (group C, N=8) were exposed to a hypoxic atmosphere (FiO2 2% for 1h, followed by recovery in a normoxic atmosphere for 2h. Non-operated animals in group D (N=8) underwent the same procedure under normoxic (FiO2 21%) conditions. The body temperature (Tb) was measured thermographically. **Result:** All CBs were successfully resected in group A, confirmed by a hypoxic ventilatory response test and histological analysis. During 1h of hypoxia exposure, the animals in group A-C dropped their Tb to 2.6±0.2°C, 4.1±0.4°C, and 3.7±0.2°C, respectively, above ambient temperature (P<0.001 versus group D). During normoxic recovery, animals in group B and C restored their Tb to group D levels within 2h (P>0.05), whereas the Tb of group A declined further to the ambient temperature (P<0.01 versus group B–D). **Conclusion:** The carotid chemoreceptors fulfill an imperative role in the central regulation of hypoxia-induced hypothermia in mice.

---

**OP-89**

MAPKs activation can modulate glyocalyx injury induced by ischemia/reperfusion

Lisa Rancan a, Javier Casanova b, Cruz García c, Luis Huerta d, Priya Shahani a, Cesar Montero e, Guillermo Sánchez-Pedrosa b, Ignacio Garutti b, Carlos Simon d, Elena Vara a

a Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University, Madrid, Spain; b Service of Anaesthesiology and Rehabilitation, Gregorio Marañón University General Hospital, Madrid, Spain; c Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University, M, Spain; d Service of Thoracic Surgery, Gregorio Marañón University General Hospital, Madrid, Spain; e Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University of Madrid, Madrid, Spain

**Background:** Ischemia/reperfusion (I/R) injury leads to major complications after lung transplantation. Recent evidence showed that a damage of the endothelial glyocalyx contributes to the I/R injury pathophysiology. Cytokines, free radicals, and several physiological enzymes modulate the glyocalyx structure activating endothelial cell signalling cascades, some of which involve the mitogen-activated protein kinases (MAPKs) pathway. The aim of this work is to investigate a potential involvement of MAPKs pathway in lung glyocalyx injury secondary to I/R, in a lung auto-transplantation model. **Material and Methods:** Seven large-white pigs underwent lung auto-transplantation surgery (control group) while seven pigs only underwent thoracotomy (sham-operated group). All animals received the same anaesthesia. Lung biopsies were taken before pulmonary artery clamp, before reperfusion, 30 and 60 minutes post-reperfusion in order to analyse pulmonary MAPKs (AKT, p38-MAPK, PI3K and ERK) expression and glyocalyx components. **Result:** Lung I/R significantly increased protein expression of AKT and p38-MAPK, while no changes on PI3K and ERK were observed. p38-MAPK and AKT phosphorylation was significantly increased after ischemia and a further increase was observed after reperfusion. I/R also increased ERK phosphorylation in the control group, but this effect was observed only after 30 min of reperfusion. These changes were accompanied by a significant reduction of the levels of syndecan-1 and heparan sulphate in the lung samples of control group, while increased levels of heparanase were observed. **Conclusion:** These results indicate that glyocalyx damage secondary to I/R injury could be mediated by MAPKs activation, suggesting that the modulation of MAPKs signalling may help reducing I/R-induced lung injury. Supported by FISSPI13/00700, PI13/0002.
OP-90
Experimental chronic lung allograft rejection — which mouse model is reliable?

Yoshito Yamada, David Kenkel, Jae-Hwi Jang, Christine Opelz, Ilhan Inci, Andreas Boss, Walter Weder, Wolfgang Jungraithmayr
University Hospital Zurich, Zurich, Switzerland

Background: Several protocols are currently proposed for the induction of chronic rejection (CR) in experimental mouse lung transplantation (Tx). Due to a significant inconsistency between CR models available, the aim of this study was to investigate experimental mouse Tx combinations to test their reliability. Material and Methods: Mouse lung Tx was performed using the following 3 protocols: minor histocompatibility antigen-mismatched Tx (MINOR, C57BL/10 as donor, C57BL/6 as recipient) analyzed on week 4 (n=15), 8 (n=10) and 12 (n=7), major histocompatibility antigen-mismatched Tx (MAJOR, BALB/c as donor, C57BL/6 as recipient) treated by low-dose cyclosporine and analyzed on week 8 (n=12), and syngeneic Tx (SYN, C57BL/6 as dono and recipient) analyzed on week 8 as controls. Blood gas analysis, HE histology and immunohistochemistry were performed. Result: Chronic rejection lesions were most prominently induced in the MAJOR Tx group at 8 weeks (75%), which was significantly more compared to all other groups (p<0.05). MINOR Tx did not have CR at 4 weeks, but at 8 (20%) and at 12 weeks (14.3%). SYN had no CR. Also, MAJOR Tx had significantly higher acute rejection score compared to all other groups (p<0.05). MINOR Tx had significantly lower PaO2/FIO2 ratio than MINOR Tx at 4 and 8 weeks (p<0.05). Conclusion: Among experimental CR models, the Major histocompatibility mismatched combination treated by low-dose cyclosporine is the most reliable CR model. At the same time, this model reflects the best the clinical situation thus making it useful in the research for finding new therapeutics against CR in lung Tx.

OP-91
The impact of sevoflurane preconditioning in experimental mouse lung transplantation

Yoshito Yamada, Isabelle Laube, Jae-Hwi Jang, John Bonvini, Ilhan Inci, Beatrice Beck-Schimmer, Walter Weder, Wolfgang Jungraithmayr
University Hospital Zurich, Zurich, Switzerland

Background: Although it has been evaluated that sevoflurane ameliorates reperfusion injury in various organs, the data available for post-transplant effects are rare, particularly for lung. We evaluated if preconditioning by sevoflurane could potentially protects from primary graft dysfunction (PGD) or acute rejection (AR) after lung transplantation (Tx). Material and Methods: Two experimental approaches employing the mouse single lung Tx model with 18 hours of graft cold storage were performed: syngeneic Tx (C57BL/6, Syn-Tx, n=12) to mimic PGD, and allogeneic Tx to mimic AR (BALB/c as donors and C57BL/6 as recipients, Allo-Tx, n=12). Before lung retrieval, donor animals were exposed (preconditioned) for 2 hours to sevoflurane (Sevo group) or fentanyl (Control group). We analyzed Syn-Tx grafts on day 1 and Allo-Tx grafts on day 3 for histology, immunohistochemistry, oxygenation and cytokines. Result: In Syn-Tx animals of the Sevo group showed significantly lower plasma levels of IL-6 (p=0.01), and at the same time higher levels of IL-10 in lung tissue (p=0.001). Also, relatively lower levels of lactate dehydrogenase (p=0.35) and MCP-1 (p=0.26) were found, however, without reaching statistical significance. In Allo-Tx, grafts in the Sevo group showed pronounced attenuation of AR with significantly lower rejection scores in histology (p=0.03), fewer classical macrophages (F4/80+), but increased numbers of anti-inflammatory alternative macrophages (CD206+), (p<0.01, both). Also functionally, the Sevo group presented with improved oxygenation (p=0.16). Conclusion: Sevoflurane preconditioning showed protective effects on lung transplants in PGD and AR. These promising data should lead to further research, elucidating mechanisms and bringing this promising technique to scenarios of clinical trials.

OP-92
Different lung microRNA profiling in human uncontrolled non-heart-beating donors and brain-dead donors

Alberto Calvo a, Yoko Olmedilla b, Lisa Rancan c, Cruz García c, Priya Shahanu c, Guzmán López De Hontanar c, Sergio D. Paredes a, Irene García a, José María Balibrea a
a Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University of Madrid, Madrid, Spain; b Service of Endocrinology and Nutrition, Gregorio Marañón University General Hospital, Madrid, Madrid, Spain; c Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University, Madrid, Spain; d Department of Physiology, School of Medicine, Complutense University, Madrid, Spain; e Service of General Surgery, Vall de Hebron Hospital, Barcelona, Spain

Background: Lung transplantation is the only treatment that can prolong life of patients with end-stage pulmonary disease. The shortage of organs has forced to consider lungs from non-heart-beating donors (NHBD), whose vulnerability to ischemia reperfusion injury (IRI) — the major cause of graft failure after immunological rejection — may be higher than that of normal lungs. The pathophysiological mechanisms of IRI are complex and not fully established. Recent studies observed that alterations in microRNA expression might be involved in the response to IRI suggesting that changes of microRNA expression could be used as a marker of organ injury. The aim of this study was to investigate the expression of some microRNAs in lung biopsies obtained from NHBD and to compare the findings with
those obtained from brain-dead donors (BDD). **Material and Methods**: Lung samples from seven NHBD and seven BDD were obtained at the end of cold storage. Samples were analysed for different microRNAs (miR126, miR142-5p, miR223, miR192, miR182, miR155, miR142, miR145, miR107, miR21, miR103, miR152, miR16, and let7) using RT-qPCR. Results were normalized using miR92a. **Result**: Expression of miR142-5p, miR223, miR145, miR21 and miR16 was significantly higher in NHBD. By the contrary, miR192 and miR152 expression was higher in BDD. The expression of miR142-5p, miR223, miR145, miR21 and miR16 was similar in NHBD and BDD. **Conclusion**: Our results suggest that microRNAs play a role in the modulation of the cell-injury status of the lungs obtained from NHBD suggesting the possibility that changes in microRNA expression could be used as biomarkers for IRI.

---

**OP-94**

**Analysis of risk factors for posthepatectomy liver failure in right lobe living donors for liver transplantation**

Kenji Yoshino, Kojiro Taura, Ikreno Yoshitobu, Yukihiro Okuda, Takahiro Nishio, Gen Yamamoto, Kazutaka Tanabe, Iwaisako Keiko, Etsui Hatano, Shinji Uemoto

Kyoto university, Kyoto, Japan

**Background**: Right lobe donor hepatectomy is at high risk of complications including posthepatectomy liver failure (PHLF). Currently, the minimum volume of the remnant to be secured is uniformly set at 30% of the whole liver in our institution. The present study retrospectively analyzes the risk factors of postoperative complications in right lobe living donor to see if the minimum remnant volume should be adjusted depending on the potential risk factors such as age and preoperative liver function tests. **Material and Methods**: Between October 2005 and March 2015, 232 donors who underwent right hepatectomy without middle hepatic vein in Kyoto University Hospital were enrolled in this study. The clinical data was collected retrospectively. **Result**: The median donor age was 46.0 (range: 20–66) years old. Percentage of the remnant (Rem) was 36.6% on average. None of the donors had grade 4 or 5 complications or clinically significant PHLF (grade B–C). Grade A PHLF occurred in 30 donors (12.9%). The gender (p=0.03), preoperative platelet count (PLT) (p=0.04), Rem (p=0.02), and blood loss during operation (p=0.01) were significant risk factors for PHLF in univariate analysis. PLT (p=0.04), Rem (p<0.01), and blood loss during operation (p=0.04) remained significant in multivariate analysis. **Conclusion**: Right lobe donor hepatectomy is safely performed with acceptable morbidity under the current selection criteria. Among preoperative liver function parameters, only PLT is associated with occurrence of PHLF. Slight modification of the current criteria for the minimum remnant volume by PLT may be justified to minimize donor risk while maximizing availability of right lobe living donor.

---

**OP-95**

**Clinical outcome of adult living-donor liver transplantation**

Taku Iida, Koji Masuda, Takehisa Matsuyasu, Shunpei Harada, Tsukasa Nakamura, Katsuhire Koshino, Tomoyuki Suzuki, Shuji Nobori, Hidetaka Ushigome, Norio Yoshimura

Division of Transplantation and Regeneration Surgery, 1Department of Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan

**Background**: Living-donor liver transplantation (LDLT) for patients with end-stage liver disease has gradually become established worldwide. However, clinical problems remain.
Material and Methods: From October 2003 to December 2015, 97 patients underwent LDLT in our institute. We evaluated the clinical outcomes in 78 adult LDLT recipients, excluding pediatric and deceased-donor liver transplant recipients. Result: The mean age of patients was 53.4 years (range, 18–72; 51 men and 27 women). The etiology of liver disease was hepatocellular carcinoma in 33 patients, viral liver cirrhosis in 18, metabolic liver disease in 19, fulminant liver failure in 5, and other in 3. In all patients, the overall survival (OS) rate was 88.2% at 1 year, 80.1% at 5 years, and 63.5% at 10 years. The OS rate of recipients with viral liver cirrhosis was particularly poor (69.3% at 5 years, 46.2% at 10 years). There were no significant differences in OS between ABO-incompatible (n = 11) and identical/compatible patients (n = 67) or between LDLT with right-lobe grafts (n = 47) and left-lobe grafts (n = 30). The most common cause of death was graft dysfunction (n = 13), and the most common cause of graft dysfunction was relapse of hepatitis C (n = 4). The OS rate of recipients with preoperative infections within 1 month was significantly poorer than that of recipients without infections (1 year, 65% vs 93.2%; 5 years, 43.3% vs 85.8%; p = 0.0002). Conclusion: Because preoperative infection and relapse of hepatitis C after LDLT deteriorate recipients’ survival, countermeasures are required to resolve these problems.

OP-96
Treatment of Acute Liver Failure by Hepatocyte Transplantation in Lewis Rats

Eva Koblihová a, Luděk Červenka b, Iveta Mrázová b, Miroslav Ryska c

a Department of Surgery, Second Faculty of Medicine, Charles University and Central Military Hospital, Prague, Czech Republic; b Center for Experimental Medicine, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; c Department of Surgery, Central Military Hospital, Prague, Czech Republic

Background: Acute liver failure (ALF) is a clinical syndrome resulting from widespread damage of hepatocytes, with extremely high mortality rate. Urgent orthotopic liver transplantation is the most effective therapy for ALF. This treatment is limited by scarcity of organ donors. Therefore, hepatocyte transplantation (Tx) has emerged as a new therapeutic approach for ALF. Our aim was to examine if hepatocytes isolated from transgenic “firefly luciferase” Lewis rats into the recipient liver would attenuate the course of thioacetamide (TAA)-induced ALF in Lewis rats. Material and Methods: We have four experimental groups of Lewis rats, 20 animals in each group. Acute liver failure was induced by intraperitoneal administration of TAA. Isolated hepatocytes in the amount 2 x 106 cells dissolved in Williams medium were implanted into the liver through the portal vein. Plasma levels of albumin, bilirubin, alanine aminotransferase (ALT), aspartate aminotransferase (AST) and ammonia level (NH3) were determined. Result: Untreated Lewis rats after TAA administration showed a profound decrease in survival rate; no animal survived 54 h. Hepatocyte Tx attenuated the course of TAA-induced ALF in Lewis rats which was reflected by improved survival rate and reduced degree of liver injury showing as lowering of elevated plasma ALT, AST, NH3 and bilirubin levels and increasing plasma albumin. In addition, bioluminescence imaging analyses have shown that in the TAA-damaged livers the transplanted hepatocyte were fully viable throughout the experiment. Conclusion: Results of this study show that the hepatocyte Tx into the liver can attenuate TAA-induced ALF in Lewis rats. This project was supported by MO 1012.

OP-97
The significance of preoperative body composition in living donor liver transplantation

Yuhei Hamaguchi, Toshimi Kaida, Atsushi Kobayashi, Shinya Okumura, Shintaro Yagi, Hideaki Okajima, Shinji Uemoto

Kyoto University, Kyoto, Japan

Background: Sarcopenia has been shown to be an independent predictor of lower survival in various diseases. In surgical fields, however, the significance of other body components including visceral and subcutaneous adipose tissue remains unclear. Material and Methods: This study comprised 250 adult patients undergoing living donor liver transplantation (LDLT) between January 2008 and April 2015. Using preoperative CT imaging, the quantity and quality of skeletal muscle were evaluated by skeletal muscle mass index (SMI) and intramuscular adipose tissue content (IMAC) at the third lumbar vertebra, respectively. At the same level, visceral to subcutaneous adipose tissue area ratio (VSR) was calculated. 1) The correlations among SMI, IMAC and VSR, 2) the overall survival rate in patients classified according to SMI, IMAC or VSR, and 3) the risk factors for poor survival after LDLT were analyzed. Result: 1) There was a significantly negative relationship between SMI and VSR in both males (r = -0.371, p < 0.001) and females (r = -0.291, p = 0.001). 2) The overall survival rate in patients with low SMI (p < 0.001), high IMAC (p < 0.001), or high VSR (p < 0.001) was significantly lower than in each normal group. 3) Multivariate analysis revealed that preoperative low SMI (Hazard ratio [HR] = 2.585, p = 0.001), high IMAC (HR = 1.822, p = 0.021) and high VSR (HR = 5.204, p < 0.001) were the independent risk factors for death after LDLT. Conclusion: Preoperative high VSR as well as low muscularity were closely involved with posttransplant mortality.
Background: Interest in aortic sutureless bioprosthesis is growing. Here, we evaluate the feasibility for patient with unsuitable anatomy. Material and Methods: Of the 72 Perceval.S® valve implantations carried out in our institution during 2015, 13 patients underwent concomitant “off label” surgery: reduction aortoplasty for dilated ascending aorta (DAA) in 5 patients, aortic annulus reconstruction for active endocarditis (AE) in 3 patients and mitral valve bioprosthesis replacement (MVR) in 5 patients. Result: The mean age, mean logistic EuroSCORE and mean cross-clamping time were respectively in the DDA group (76.6 years, 12.2, 49 min), in the AE group (64 years, 56, 78 min) and in the MVR group (67.8 years, 16, 139 min). One recabling was neither with repositioning of the valve in the AE group. There was no residual aortic paravalvular leak. The mean aortic gradient was 11 mmHg (range, 8 to 20 mmHg). Paccemaker implantation was required in 1 Case (7,7%). There was no evidence of mitral dysfunction in the MVR group. In the DAA group systematic pre and post procedure CT scan reported reduction of the ascending aorta from 43 mm to 33 mm and a satisfactory fitting of the prosthesis to the aortic root. Initial follow up of 8 months (range, 1–14 month) showed no new aortic regurgitation, no recurrent endocarditis and the overall survival was 100%. Conclusion: Perceval.S® Sutureless valve implantation combined with mitral valve replacement, reduction aortoplasty and annulus reconstruction appears feasible and the results presented are encouraging. These procedures have the potential to simplify surgery in high-risk patients.

Background: The aim of this study was to determine the risk of micro-fractures arising during two different thawing protocols of the cryopreserved aortic root homografts. Aortic walls and aortic valve leaflets were examined. Material and Methods: The experiment was performed on cryopreserved aortic root homografts. Two thawing protocols were used: 1. aortic root homograft was placed directly into a water bath at 37°C. 2. aortic root homograft was thawed at a room temperature at 23°C. After all the samples were thawed, aortic leaflet and part of aortic wall were fixed in a 4% formaldehyde solution and sent for electron microscope testing. Result: Twelve cryopreserved aortic homografts were tested: 1. six homografts were thawed in a water bath: all samples showed severe basal membrane damage with circular defects, one (16%) graft had showed no basal membrane with severe damage to the internal elastic lamina. Five (83%) aortic valve leaflet showed no damage to the basal membrane. One (16%) sample showed significant damage to the basal membrane of the aortic valve leaflet. Conclusion: All of the samples thawed at the room temperature showed significantly lower damage to the basal membrane when compared to the samples thawed in a water bath.

Background: Today, transcatheter aortic valve implantation appear as a valuable alternative to surgery for high-risk patients. However, when a trans-femoral approach is impossible, trans-carotid approach is less invasive and an interesting alternative. Material and Methods: This is a retrospective study from February to December 2015, 18 patients (4 women, mean age: 81,05 years old (range, 60-93)) under-
went implantation of a bioprosthesis Edwards Sapiens 3 (Irvine, CA, USA), through a trans carotid approach. Sixteen procedures were performed via the left common carotid artery and 2 procedures via the right common carotid artery. A transverse mini cervicotomy was performed. Seventeen procedures were performed under general anesthesia and one procedure under sedation for morbid obesity. Eight implantations were performed using the transfemoral catheter Commander® and 10 implantations with the transapical catheter ascendra+®. Nine procedures were performed without aortic valve predilatation Result: The mean duration of the procedure was 2 hours (range, 1h03-3h24). It was noted five cases of cervical small hematoma did not require revision surgery and one case of left laryngeal paralysis. The transthoracic echocardiography control objectified 6 cases of minimal para prosthetic regurgitation and 1 case of moderate para prosthetic regurgitation. Two patients had a complete atrioventricular block in post procedure for which a pacemaker was implanted. No stroke or transient ischemic attacks were identified. The mean duration of hospital stay was 6.33 days [range, 2-28]. There was no hospital mortality. Conclusion: When the femoral approach is not accessible, the primitive carotid approach is an alternative of choice without additional morbidity and mortality.

**OP-101**

A Novel Technique of Subclavian Artery Cannulation for VA Extracorporeal Membrane Oxygenation

Umit Kervan a, Sinan Sabit Kocabeyoglu a, Dogan Emre Sert a, Emre Aygun a, Kemal Kavasoglu b, Mehmet Karahan a, Ertekin Utku Unal a, Mustafa Pac b

a Türkiye Yüksek İhtisas Hospital, Cardiovascular Surgery and Heart Transplantation Unit, Ankara, Turkey; b Dr. Siyami Ersek GKDC Hospital, Istanbul, Turkey

**Background:** The common femoral artery is the standard site for immediate vascular access when initiating adult veno-arterial extracorporeal membrane oxygenation. However, this approach is fraught with problems such as femoral artery occlusion, distal limb ischemia, reperfusion injury resulting in compartment syndrome, retroperitoneal hemorrhage, thrombosis, embolization, and most importantly, pulmonary edema. We prefer using the subclavian artery with a side graft, as a different cannulation technique for outflow of extracorporeal membrane oxygenation, to avoid the complications associated with different access techniques. Material and Methods: Between September 2013 and December 2014, veno-arterial extracorporeal membrane oxygenation was established via subclavian arteryperrcutaneous femoral vein cannulation in 11 patients (81.1% men). Mean age was 33 ± 11.1, (range: 16 - 55) years. Subclavian artery is slung by retro-tapes proximally and distally before arteriotomy. Subsequently an 8 mm Dacron graft is sutured in "end-to-side" fashion. The proximal retro-tape is sutured in “end-to-side” fashion. The proximal retro-tape is

associated with right arm hyperperfusion. Result: After establishing veno-arterial extracorporeal membrane oxygenation, decrease in central venous pressure and lactate levels, and improvement in arterial blood gas parameters are maintained. Conclusion: Our protocol for veno-arterial extracorporeal membrane oxygenation cannulation is subclavian artery for arterial access provides a safe and perhaps improved means for providing veno-arterial extracorporeal membrane oxygenation support.

**OP-102**

Animal model experiment on pig with using ECC and few months follow up

Pavel Piler a, b, Christopher McGregor a, c, Guerard Byrne c, Robert Wagner a, b, Petr Fila a, b, Jiří Ničovský a, b, Petr Pokorný a, b, Vítězslav Pavlíček a, Anna Zirnčová a, Michal Crha a, Petr Rauser a, Jan Motlík a, Petr Němec a, b

a Mezinárodní centrum klinického výzkumu, Fakultní nemocnice u sv. Anny v Brně, Brno, Czech Republic; b Centrum kardiovaskulární a transplantační chirurgie Brno, Brno, Czech Republic; c University College London, London, United Kingdom; d Veterinární a farmaceutická univerzita Brno, Brno, Czech Republic; e Ústav živočišné fyzikologie a genetiky AV ČR, v. v. i. Liběchov, Liběchov, Czech Republic

**Background:** In the context of research in the field of xenotransplantation was created a pig model with the knock-out alpha-GAL epitope. It was hypothesized that this epitope is responsible for increased degeneration of these tissues in the human body and therefore, the tissues from this modified porcine animal subject to considerably less degeneration. At the same time the number of patients operated for degenerative aortic valve stenosis increases currently significantly. This disease is nowadays most frequently solved by replacement of the valve by mechanical or biological prosthesis. The mechanical prostheses require anticoagulation treatment with all the risks and complications, and contrary bioprosthesis degenerates with time. Creating a model of a new generation of flap using tissue from GM animals (pigs) would bring these patients a significant profit. Material and Methods: Two types of pigs were used – wild type (WT) and genetically modified type (GMO) of weight from 55 kg to 90 kg. For testing of the hypothesis was created a model of animal experiment, where we took part of RVOT, pulmonary artery valve and part of pulmonary artery from one animal (pig – donor) and implanted into other animal (pig – recipient). Result: We used 22 donor-recipient procedures, the whole long follow-up was 45,5% (in the last series survived 5 of 6 pigs). Conclusion: There was created a model of experiment on pigs by replacing the RVOT, pulmonary valve and a part of pulmonary artery with a long-term survival (months). This model is applicable and able to give sufficient information about the immunologic and histologic processes.
Background: Chest wall tumours encompass a diversity of neoplasms and remain a challenge for thoracic surgeons. The purpose of this study is to report a single-centre experience with chest wall resection and reconstruction in patients with cancer involving the chest wall. **Material and Methods:** Medical records of 56 patients who underwent chest wall resections for cancer between 2005 and 2015 were retrospectively reviewed. **Result:** Mean age was 62±15 years. Surgical indications included primary lung cancer (41 patients), mesothelioma (2 patients), chest wall sarcoma (11 patients) and breast cancer (2 patients). Mean number of ribs resected was 3±1 and one patient required partial sternal resection. Resection margins were clear in 21 patients (38%). 46 patients underwent concurrent lung resection. Resection margins were clear in 21 patients (45%). One patient required re-intervention for chest wall repair due to lung herniation. **Conclusion:** Chest wall resection with reconstruction utilizing synthetic mesh with/without local myocutaneous flaps can be performed as a safe, effective one-stage surgical procedure for a variety of cancers involving the chest wall.

**OP-103**

**Chest wall resection and reconstruction – a 10-year single centre experience**

*Ana-Catarina Pinho-Gomes, Abdul Nasir, Rajesh Shah*

University Hospital of South Manchester, Manchester, United Kingdom

**Background:** Chest wall tumours encompass a diversity of neoplasms and remain a challenge for thoracic surgeons. The purpose of this study is to report a single-centre experience with chest wall resection and reconstruction in patients with cancer involving the chest wall. **Material and Methods:** Medical records of 56 patients who underwent chest wall resections for cancer between 2005 and 2015 were retrospectively reviewed. **Result:** Mean age was 62±15 years. Surgical indications included primary lung cancer (41 patients), mesothelioma (2 patients), chest wall sarcoma (11 patients) and breast cancer (2 patients). Mean number of ribs resected was 3±1 and one patient required partial sternal resection. Resection margins were clear in 21 patients (38%). 46 patients underwent concurrent lung resection. Resection margins were clear in 21 patients (45%). One patient required re-intervention for chest wall repair due to lung herniation. **Conclusion:** Chest wall resection with reconstruction utilizing synthetic mesh with/without local myocutaneous flaps can be performed as a safe, effective one-stage surgical procedure for a variety of cancers involving the chest wall.

**Result:** Mean age was 62±15 years. Surgical indications included primary lung cancer (41 patients), mesothelioma (2 patients), chest wall sarcoma (11 patients) and breast cancer (2 patients). Mean number of ribs resected was 3±1 and one patient required partial sternal resection. Resection margins were clear in 21 patients (38%). 46 patients underwent concurrent lung resection. Resection margins were clear in 21 patients (45%). One patient required re-intervention for chest wall repair due to lung herniation. **Conclusion:** Chest wall resection with reconstruction utilizing synthetic mesh with/without local myocutaneous flaps can be performed as a safe, effective one-stage surgical procedure for a variety of cancers involving the chest wall.

**OP-104**

**Focused Parathyroidectomy Versus Open four-gland Parathyroid Exploration for Primary Hyperparathyroidism: A Systematic Review and Meta-analysis**

*Marcel Jinih a, Emer O’Connell b, Donal P. O’leary b, Aaron Liew b, c, Henry P. Redmond a*

a Cork University Hospital (CUH), Cork, Ireland; b National University of Ireland Galway (NUIG), Galway University Hospital, Galway, Ireland; c Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, United Kingdom

**Background:** Currently either FP or OP remains the surgical options for patients with primary hyperparathyroidism (PHPT). However, the relative risk of recurrence, persistence, overall failure, reoperation, and any complications associated with either FP or OP is unclear. We aim to determine the clinical outcomes and complications after focused parathyroidectomy (FP) and open parathyroidectomy (OP) for patients with PHPT. **Material and Methods:** PUBMED and EMBASE were searched for studies comparing these outcomes between FP and OP. A meta-analysis was performed using Revman software version 5.3. Published data were pooled using the DerSimonian random-effect model and results were presented as odds ratio (OR) or mean difference (MD) with 95% confidence interval (CI). **Result:** A total of 12,743 patients from 19 studies were included in this meta-analysis. In comparison with OP, the FP arm has comparable rates of recurrence (OR: 1.08; 95% CI: 0.59-2.00; p=0.80; n=13 studies), persistence (OR: 0.89; 95% CI: 0.58-1.35; p=0.56; n=12), overall failure (OR: 0.88; 95% CI: 0.58-1.34; p=0.56; n=9) and reoperation (OR: 1.05; 95% CI: 0.25-4.32; p=0.95; n=4). The operative time is significantly shorter (OR: -39.94; 95% CI: -53.05 to -26.84; n=9) with lower overall complication rate in the FP arm (OR: 0.35; 95% CI: 0.15-0.84; p=0.02; n=12). The latter is attributed predominantly to a lower risk of transient hypocalcaemia (OR: 0.36; 95% CI: 0.14-0.90; p=0.03; n=9). There was a significant heterogeneity among these studies, for all outcomes. **Conclusion:** Compared with OP, FP has a similar recurrence, persistence and reoperation rates, but significantly lower overall complication rates and shorter operative time.

**OP-105**

**Anastomotic leak and stricture after hand-sewn versus linear stapled intrathoracic oesophagogastric anastomosis: single center analysis of 415 oesophagectomies**

*Tomas Harustiak, Alexandr Pazdro, Martin Snajdauf, Alan Stolz, Robert Lischke*

3rd Department of Surgery, First Faculty of Medicine of Charles University in Prague and University Hospital Motol, Prague, Czech Republic

**Background:** The aim of our study was to compare surgical outcomes of intrathoracic side-to-side linear stapled (LS) and end-to-end hand-sewn (HS) anastomosis after transcervical oesophagomyotomy. **Material and Methods:** We conducted a retrospective review of all patients undergoing Ivor Lewis oesophagectomy with LS or HS anastomosis for neoplasia at our institution from 2005 to 2012. A propensity score matched analysis of HS and LS groups was done and multivariable analyses of the associations of anastomotic technique and other preoperative and pathological variables with anastomotic leak and endoscopically identified anastomotic stricture were performed. **Result:** There were 415 patients, 134 with HS and 281 with LS anastomoses. Anastomotic leak occurred in 56 patients (13.5%), significantly more after HS than LS technique (20.9% versus 10.0%;
for primary hyperparathyroidism (PHPT). There is
considerable challenge in the intraoperative identifica-
tion of parathyroid adenomas, and the use of frozen section, Minimally-
invasive Radioguided Parathyroidectomy (MIRP) following a Sestamibi (MIBI) scan, and intraoperative parathyroid hor-
mone (ioPTH) monitoring has, either alone or in combina-
tion, become the standard of care to aid intraoperative di-
agnosis. The use of the radionucleotide probe (RNP) as an
adjunct has been described, but is not commonly employed. Conclu-
sion: Our study showed that linear stapled anastomotic technique is the preferred method of in-
trathoracic oesophagogastric anastomosis due to a de-
creased overall anastomotic leak rate and anastomotic stric-
ture formation compared with hand-sewn technique.

**OP-106**  
The Radionucleotide Probe is a Useful Adjunct to Aid Intraoperative Diagnosis in Parathyroidectomy for Primary Hyperparathyroidism  
Ming-Sheng Lim, Marcel Jinih, Paul Redmond  
Cork University Hospital, Cork, Ireland  

Background: Parathyroidectomy is the definitive treatment for primary hyperparathyroidism (PHPT). There is consid-
erable challenge in the intraoperative identification of para-
thyroid adenomas, and the use of frozen section, Minimally-
invasive Radioguided Parathyroidectomy (MIRP) following a Sestamibi (MIBI) scan, and intraoperative parathyroid hor-
mone (ioPTH) monitoring has, either alone or in combina-
tion, become the standard of care to aid intraoperative di-
agnosis. The use of the radionucleotide probe (RNP) as an
adjunct has been described, but is not commonly employed. Material and Methods: We retrospectively analysed data from a prospectively maintained database and compared the sensitivities of MIBI-MIRP, ioPTH monitoring, and the RNP in identifying parathyroid adenomas. All patients un-
dergoing parathyroidectomy for PHPT, with all three of the
same day MIBI performed, ioPTH monitoring, and the RNP used were included. Patients with previous neck surgery, concomitant thyroidectomy, MEN syndrome, eGFR <30, or who were on Lithium medication were excluded. Result: A total of 155 patients were selected, the majority of which were female (80% F, n=124), with a mean age of 60. The use of ioPTH monitoring alone had a 76% sensitivity. The use of MIBI-MIRP alone had a 64% sensitivity. The use of the RNP alone had a 92% sensitivity. When taken as a group, the sensi-
tivity increases to 97%. 96% of patients had a good out-
come, 2% had persistence of disease and 2% had recur-
rence, over a mean follow-up period of 28 months. Conclu-
sion: The RNP is a useful adjunct to aid intraoperative diag-
nosis in parathyroidectomy for PHPT and should be em-
ployed if possible.

**OP-107**  
Factors associated with gene-expression profile use in Dutch breast cancer patients  
Anne Kuijer a, b, Kay Schreuder c, Emiel Rutgers d, Sabine Siesling e, Thijs Van Dalen a  
Dianonessenhuis, Utrecht, the Netherlands; b University Medical Centre, Utrecht, the Netherlands; c Comprehensive Cancer Center, Utrecht, the Netherlands; d Netherlands Cancer Institute, Amsterdam, the Netherlands; e Comprehensive Cancer Organization, Utrecht, the Netherlands  

Background: Gene-expression profiles (GEPs) are increas-
ingly used to aid chemotherapy decision-making in early-
stage breast cancer patients. The Dutch national guideline suggests GEP use in estrogen-receptor positive patients with a dubious indication for adjuvant chemotherapy based on traditional prognostic factors. However, only a limited proportion of patients actually receives a GEP. The aim of the present nation-wide study is to assess which patient-, tumor- and hospital-characteristics are associated with GEP use. Material and Methods: Female patients, surgically treated for primary invasive breast cancer between 2011 and 2014 eligible for GEP use were identified in the Neth-
ernlands Cancer Registry database. Multivariable logistic re-
gression analysis was performed to assess which patient-, tumor- and hospital characteristics were independently as-
associated with GEP use. Result: 5110 primary breast cancer patients were eligible for GEP use of whom 27% (n = 1360) received a GEP. Ductal instead of lobular morphology, ab-

ence of axillary micro-metastases (OR 0.56), intermediate instead of low malignancy grade (OR 1.62) and small tumor
size were independently associated with GEP use. In addi-
tion, patients of young age (OR 0.97 for every year increase in age), high socioeconomic status (OR 1.53) or more recently diagnosed were more likely to receive a GEP. GEP use was more frequent in peripheral instead of university hospit-
als, institutions with a higher patient-volume and hospitals situated in the Northern part of the Netherlands. Conclu-
sion: Considerable variation exists in GEP use in ER+ Dutch breast cancer patients eligible for GEP use. Patient-, tumor- and hospital associated factors influence deployment of GEPs.

**OP-108**  
Diagnostic aspects of Anterior Cutaneous Nerve Entrapment Syndrome in children  
Murid Siawash, Rudi Roumen, Marc Scheltinga  
Maxima Medical Center, Veldhoven, the Netherlands  

Background: Abdominal pain due to anterior cutaneous nerve entrapment syndrome (ACNES) in children is severe and interferes with normal daily activities, school attend-
ance and sports. Early recognition is essential but symptoms
and signs are poorly described. The objective is to identify high risk patients and to report on diagnostic characteristics allowing for an early diagnosis in pediatric patients with abdominal pain due to ACNES. **Material and Methods:** Prospectively obtained data of patients <18 years and diagnosed with ACNES during two following years at a tertiary referral center were analysed. **Result:** 73 children were included (77% female; median age 15, range 8-17 years). Diagnostic delay was 10 months (median, range 1-60). Pain was severe (mean 7.4 ±0.9SD), sharp (84%), aggravated by physical activity (91%) and mostly (97%) at one location. The right lower abdominal quadrant was most frequently affected (75%). Carnett’s test was positive in 97% of the children. Hypo-/hyperesthesia (85%) or a positive skin pinch test (88%) were found at the skin overlying the painful spot. Routine blood tests, urine analysis and medical imaging were negative in all. Irritable bowel syndrome was a leading diagnosis in more than half of the cases. **Conclusion:** Females between 12-18 years with chronic right lower abdominal pain and a negative routine work up are at risk for ACNES. A sharp, stabbing or burning pain at one spot that is provoked by physical activity and relieved following rest may suggest ACNES. Positive Carnett’s sign and skin pinching tests support the diagnosis.

---

**OP-109**

**Effect of portal vein ligation on liver function determined by selective biliary drainage**

Dóra Tihanyi a, András Fűlöp a, András Budai a, Zsolt Turóczki a, Zoltán Czigány a, Gábor Lotz b, Katalin Dezso c, Sándor Poku c, d, László Harsányi a, Attila Szijártó a

a 1st Department of Surgery; Semmelweis University, Budapest, Hungary; b 2nd Department of Pathology; Semmelweis University, Budapest, Hungary; c 1st Department of Pathology and Experimental Cancer Research; Semmelweis University, Budapest, Hungary; d 2nd Department of Pathology; Semmelweis University, Budapest, Hungary

**Background:** The selective portal vein ligation (sPVL) is a well-used method to avoid post-hepatectomy liver failure. The occlusion of a portal branch provokes hemodynamic changes resulting in atrophy of the portal deprived liver lobes and a compensatory hypertrophy of the portally perfused ones. The resulting mass changes are well-documented, nevertheless the effects on liver function are contested. Our aims were to investigate the effect of the sPVL on the morphology and function of the liver. **Material and Methods:** Male Wistar rats (n=36) underwent sPVL. Before the sPVL and after 24h, 48h, 72h, 120h, 168h liver weight and standard histological assessments were performed, laboratory blood tests, hepatic bile flow, biliary indocyanine-green (ICG) plasma disappearance rate (PDR) and biliary excretion assessments were carried out. **Result:** The non-ligated lobes were decreased. Accordingly, the microcirculation was significantly increased in the non-ligated lobes and was decreased in the ligated. The laboratory parameters and the total hepatic bile flow did not change significantly. However, PDR and ICG excretion showed to be temporarily impaired after the intervention and normalized by the 5th day. The bile production and biliary ICG excretion of ligated lobes decreased after the intervention and remained suppressed, while the secretory function of the perfused lobes increased in a greater extent than the weight of the liver lobes. **Conclusion:** The sPVL induced functional increase in non-ligated lobes was more pronounced than suggested by the degree of the volume gain.

---

**OP-110**

**Uterin model for artificial delivery for educational purposes**

Sarah Mizrahi a, Estelle Jean-Dit-Gautier a, Elodie Blanchard b, Olivier Mayeur c, Michel Casson a, Chrystèle Rubod a

a Lille University Hospital, Lille, France; b Ecole Centrale, Lille, France; c Laboratoire de Mécanique de Lille, Lille, France

**Background:** Our team has already worked on modeling the feminine pelvis, in particular during pregnancy using MRI at different ages of the pregnancy with a special software. The aim of our project is to use the modeling of the uterus and elaborate a silicone uterus that will be adapted on a mannequin to help young obstetricians to practice on doing artificial deliveries in a safety environment before experiencing the technique on real patients. **Material and Methods:** The first steps consisted on modeling the gravid uterus. We used different MRI cuts. Once the model completed, it has been used as a mold to elaborate a silicone-made uterus. The next steps consisted on attaching our model to a mannequin to help young obstetricians to practice on artificial delivery. **Result:** The residents of the Lille University Hospital experienced our uterine model and a survey was collected concerning their experience. The questions asked concerned their experience with our model and the realistic aspect. **Conclusion:** It is now a known fact that simulation on mannequins is a safe and interesting method to learn and to train young doctors. Our uterine model is the first known model for educational purposes and preliminary results show a positive impact on the training of young obstetricians.
OP-111
Experimental Photodynamic Therapy on Xenotransplanted Human Tumours
Karol Sutoris a, Robert Gurlich b, Pavla Pouckova c

a Institute for Clinical and Experimental Medicine, Transplant Surgery Department, Prague, Czech Republic; b Charles University in Prague, Third Faculty of Medicine, Department of Surgery of Royal Vršovice Faculty Hospital, Prague, Czech Republic; c Charles University in Prague, First Faculty of Medicine, Institute of Biophysics and Informatics, Prague, Czech Republic

Background: In today’s clinical practice oncological indications of photodynamic therapy (PDT) are limited primarily to palliative treatment and used as an adjunct to conventional oncological routines with the aim of improving the quality of life and prolonging patient survival. Material and Methods: The efficacy of experimental PDT on xenotransplanted human tumours has been proven in our in vivo study on nu/nu mice. One particular cell line of mammary carcinoma (MDA-MB-231) and two biologically different cell lines of prostate carcinoma (LNCaP, PC-3) were tested. The key aspect of our experiment was the application of newly developed photosensitizer – hydroxy-aluminum phthalocyanine (AlOH-Pc) in the form of liposomal gel designed for locotopical application. Result: Therapy achieved complete remission in 90% of mice with mammary carcinoma xenografts and in 100% of those with prostate carcinoma xenografts. The new photosensitizer, unlike the older ones, has minimal drug-light interval and does not cause photosensitivity or organ toxicity. We were able to process and verify models of optimal phthalocyanine dosage for tested human malignancies. Conclusion: In contrast to all contemporary oncological modalities, PDT is fully capable of selective tumour destruction being the cheapest and safe to surrounding healthy tissues. Photodynamic therapy seems to be a very promising therapeutic tool especially for the treatment of smaller primary or recurrent and metastatic breast and prostate cancer. Excellent anatomical accessibility of their cutaneous metastases makes it an ideal indication for the application of PDT with locotopical photosensitizer.

OP-112
A comparison of patient satisfaction (using the Breast-Q questionnaire) with bilateral breast reconstruction following risk-reducing or therapeutic mastectomy
Fawz Kazzazi a, Rebecca Haggie a, Parto Forouhi b, Lynda Wyld c, Nazar Kazzazi c, Charles Malata b, d, e

a University of Cambridge, Cambridge, United Kingdom; b Cambridge Breast Unit, Addenbrooke’s Hospital, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom; c Jasmine Breast Center at Doncaster Royal Infirmary, Doncaster, United Kingdom; d Department of Plastic & Reconstructive Surgery, Addenbrooke’s Hospital, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom; e Postgraduate Medical Institute, Faculty of Medical Sciences, Anglia Ruskin University, Cambridge & Chelmsford, Cambridge, United Kingdom

Background: Patients undergoing mastectomy and immediate breast reconstruction (IBR) for cancer may be expected to have different perceptions of long term outcomes compared with those who elect to have this operation as a risk reducing measure. There are no reports directly comparing patient satisfaction between therapeutic and risk-reducing bilateral mastectomy and IBR. Material and Methods: Patients undergoing mastectomy and reconstruction from 2008-2014 at the Cambridge Breast Unit, were identified from a prospective register. The validated Breast-Q™ questionnaire was mailed to all following the “total Dillman method” of administering postal questionnaires. Q-SCORE software was utilised to analyse patient satisfaction and compare the two groups. Result: Of the 368 patients (median age=55 years, r=29-81) 82.5% (304) had unilateral and 64 (17%) bilateral surgery. Of the bilateral reconstructions 20% were therapeutic (median age=52) and 80% were risk-reducing (median age=38). 10% of bilateral patients fell in a combined aetiology group of risk-reducing in one breast and therapeutic contralateral mastectomy. The response rate was 61% and patient satisfaction rates were (mean/median out of 100) 75/77 for the entire series; 75.2/76.6 for the unilaterals and 74.6/77 for the bilaterals. The therapeutic group had a higher mean Q-score (76.3) compared to the prophylactic group (71.5). Conclusion: RRM and immediate reconstruction has been a major advance in the management of patients who may later suffer cancer. The decision to have bilateral RRM is in many patients’ minds is facilitated by the availability of IBR. Our study suggests it is important to counsel these patients well because of their lower satisfaction rates.

MP-1
Can we predict physical fitness from the preoperative CT scan in colorectal cancer patients?
Annefleur Berkel a, Sanne Prins b, Joost Kloase a, Bart Bongers a, b, Nico Van Meeteren a, b, c

a Medisch Spectrum Twente, Department of Surgery, Enschede, the Netherlands; b University Maastricht, Department of Epidemiology, School for Public Health and Primary Care (CAPHRI), Maastricht, the Netherlands; c Health~Holland, Topsector Life Sciences and Health, The Hague, the Netherlands

Background: Cardiopulmonary exercise testing (CPET) and skeletal muscle measurements have been used for risk stratification before major abdominal surgery. However, the CPET is quite complex and an additional examination for the
patient. The aim of this study is to investigate if the anaerobic threshold can be predicted with the skeletal muscle measurements derived from the preoperative CT scan in patients undergoing colorectal surgery. **Material and Methods:** Data of patients ≥60 years old with colorectal cancer who have performed a preoperative CPET were included. The CPET was performed on a cycle ergometer. Skeletal muscle mass was measured as total psoas area (TPA) and total abdominal muscle area (TAMA) on the preoperative CT-scan at the level of the third lumbar vertebra. Skeletal muscle quality was measured using corresponding mean Hounsfield Units (HU) for TAMA. **Result:** Data of 39 patients were included. There was a moderate correlation between a decreased TAMA and a decreased anaerobic threshold (R2=17.2%), a decreased absolute peak oxygen uptake (VO2peak) (R2=23.8%) and a decreased oxygen uptake efficiency slope (OUES) (R2=18%) and between a decreased HU of the TAMA and the anaerobic threshold (R2=15.5%). The best predictors for the chance of a low anaerobic threshold (≤10 mL/kg/min) were body mass index (BMI) (OR 1.5; P=0.009) and TAMA (OR 0.8; P=0.007). **Conclusion:** Based on this study, it cannot be assumed that the CPET variables can be exactly predicted with skeletal muscle measurements, although the TAMA and BMI together seems to be promising predictors for the chance of a low anaerobic threshold (≤10 mL/kg/min).

**MP-2**

Perirenal fat surface area is a simple and reliable technique for pre-operative visceral adipose tissue evaluation

Jonathan Douissard a, Frederic Ris a, Francesco Volonte b, Nicolas C. Buchs a, Philippe Morel b, Minoa Jung a

a University Hospital of Geneva, Geneva, Switzerland; b Clinica Sant’Anna, Sorengo, Switzerland

**Background:** Visceral adipose tissue (VAT) is an independent risk factor of morbidity in abdominal and pelvic surgery and of general metabolic disorders. CT VAT surface quantification at L2-L3 is the gold-standard method for VAT evaluation but remains time consuming and technically demanding. Perirenal adipose tissue (PRAT) surface area is a quick and simple measure. We aim to prove that PRAT is a reliable method for simplified VAT evaluation. **Material and Methods:** We ran a prospective observational cohort study. 100 consecutive patients undergoing elective colorectal surgery were identified and pre-operative CT scans were obtained. VAT surface was measured at the L2-L3 level. Fat tissue was defined by a threshold range of -190 to -30 Hounsfield Units. PRAT surface was measured on an axial CT slice at the level of the left renal vein. BMI and waist-to-hip ratio (WHR) were measured. Correlation study using Spearman rank correlation coefficient (r) was done. Correlation coefficient r above 0.80 was chosen as acceptable to validate PRAT as a reliable evaluation of VAT. **Result:** Spearman rank correlation coefficient between VAT and PRAT was r=0.87. Correlations between BMI and VAT (r=0.70), WHR and VAT (r=0.61) were tested and statistically significant (r=0.326), but the correlation between PRAT and VAT is statistically stronger than the correlation between BMI and VAT (p-value BMI-PRAT 3.1.10e-5), or between WHR and VAT (p-value WHR-PRAT 2.2.10e-7). **Conclusion:** Perirenal fat surface area measurement is a simple and reliable method for visceral adipose tissue evaluation and can be used as a surrogate of time-consuming measurement of visceral adipose tissue.

**MP-3**

Experience and outcomes of self-expanding metallic stents (SEMS) for colonic obstruction in a large District General hospital (DGH)

Yan Li Goh, Ali Eker-Moustafa, Chee Yip Kan, Paul Sutton, Conor James Magee, Jeremy Wilson

Wirral University Teaching Hospital NHS Foundation Trust, Wirral, United Kingdom

**Background:** Colonic obstruction has significant mortality and morbidity. SEMS can prevent palliative resection or allow symptom relief in those unfit for surgery as well as providing a “bridge to definitive surgery”. This study reviews the outcomes of colonic SEMS in a large DGH. **Material and Methods:** Three-year retrospective analysis of SEMS outcomes from 2012 to date. SEMS were placed using a combined radiological/endoscopic technique. Data were collected on patient demographics, length of stay, success, complication and survival rates. **Result:** Thirty-one patients (21 male;10 female) with a median age of 74(range 51-98) years were stented. Median length of stay was 43(0-22) days and 16(0-76) days for elective and emergency placement respectively. Intention was palliative in 65% and as a bridge to surgery in 35%. The obstruction was primarily colorectal cancer (90%) located in the rectosigmoid (81%), with 18(56.2%) stents placed electively and 14(43.8%) emergently. Technical success was achieved in all but one where the stent was unable to pass through the tumour and clinical success was achieved in all but one due to stent blockage from extrinsic compression of peritoneal carcinomatosis. There were 4(13%) early (<30 days) and 4 (13%) late complications. Early complications were perforation (n=3) and occlusion (n=1). Late complications were stent migration (n=2) and perforation (n=2). Our perforation rate dropped to 5% in the latest 20 cases. Median follow-up following SEMS insertion was 6.5 (0-37) months, with 58% of patients studied alive to date. Definitive surgery was performed in 9 cases. **Conclusion:** SEMS has acceptable short-term morbidity and should be considered for the relief of colonic obstruction.
MP-4
Cytokines as early markers of colorectal anastomotic leakage: A systematic review and meta-analysis
Zhouqiao Wu a, Cloé L. Sparreboom b, Adem Dereci b, Gert-Jan Kleinransink b, Johan Lange b
a Peking University Cancer Hospital and Institute, Beijing, China; b Erasmus University Medical Center, Rotterdam, the Netherlands

Background: CAL (colorectal anastomotic leakage) is one of the most severe complications after colorectal surgery. Delay in diagnosis of CAL is common and contributes to high rates of morbidity and mortality. Biomarkers that could early predict CAL are highly needed. This meta-analysis evaluates whether systemic or peritoneal inflammatory cytokines may contribute to early detection of CAL. Material and Methods: A meta-analysis was conducted according to the PRISMA guidelines. Studies evaluating systemic and peritoneal levels of TNF-α, IL-1β, IL-6 and IL-10 for early detection of CAL were included. Medline, Embase, the Cochrane Library, Web of Science and Google Scholar libraries were searched for relevant literature. Result: Seven articles were included. A meta-analysis was performed of 5 articles evaluating peritoneal cytokine levels. Peritoneal levels of IL-6 were significantly higher in patients with CAL compared to patients without CAL on postoperative day 1, 2 and 3 (P ≤ 0.05). Similar results were found for peritoneal levels of TNF-α on postoperative day 3, 4 and 5 (P ≤ 0.05). Articles analyzing systemic cytokine levels after colorectal surgery did not report significant differences between patients with or without CAL. Conclusion: Postoperative levels of peritoneal IL-6 and TNF-α levels are significantly associated with CAL and may contribute to the early detection of CAL.

MP-5
Irreversible electroporation around a metal stent
Jantien Vogel a, Hester Scheffer a, Willemien Van Den Bos a, Robert Neal a, Krijn Van Lienden a, Marc Besselink a, Martin Van Gemert a, Cees Van Der Geld a, Martin Meijerink b, Johan Klaassens b, Rudolf Verdaasdonk b
a Department of Surgery, Academic Medical Center, Amsterdam, the Netherlands; b Department of Radiology and Nuclear Medicine, VU University Medical Center, Amsterdam, the Netherlands; c Department of Urology, Academic Medical Center, Amsterdam, the Netherlands; d Department of Radiology, The Alfred Hospital, Melbourne, Australia; e Department of Radiology, Academic Medical Center, Amsterdam, the Netherlands; f Department of Biomedical Engineering and Physics, Academic Medical Center, Amsterdam, the Netherlands; g Department of Mechanical Engineering, Eindhoven University of Technology, Eindhoven, the Netherlands; h Department of Physics and Medical Technology, VU University Medical Center, Amsterdam, the Netherlands

Background: Irreversible electroporation (IRE) uses short, high-voltage electrical pulses to induce cell death. The technique is used for ablating unresectable pancreatic and hepatobiliary cancer. Metal stents are often used for biliary drainage in these patients, but are currently an absolute contraindication for IRE due to the risk of heating the metal. This study investigates the thermal and tissue viability changes due to a metal stent during IRE. Material and Methods: IRE was performed in a polyacrylamide-gel tissue-model, without and with a metal stent perpendicular and parallel to the electrodes, delivering 90-270 pulses (15-35A; 90µsec, 1.5cm tiplength, 1.5cm interelectrode distance, 1000-1500V/cm, 90pulses/min), and in-vivo in a porcine liver (4 ablations). Temperatures were measured with an infrared thermal camera and fiber-optic probes. Tissue viability after in-vivo IRE was investigated macroscopically using 5-triphenyltetrazolium chloride (TTC)-staining. Result: In gel, direct stent heating was not observed. Contrarily, presence of a metal stent led to a higher increase in median temperature near the electrodes (23.2°C vs 13.3°C [90pulses] and 33.1°C vs 24.8°C [270 pulses], p=0.031). In vivo, no temperature difference was observed with and without stent. Tissue examination showed white coagulation 1mm around the electrodes in both. A rim of vital tissue remained around the stent, whereas ablation without stent resulted in complete tissue avitality. Conclusion: IRE in the vicinity of a metal stent does not cause notable direct heating of the metal, but results in higher temperatures around the electrodes and remnant viable tissue. Future studies should determine for which clinical indications IRE in the presence of metal stents is safe and effective.

MP-6
Feasibility and acceptability of a rectal cancer decision aid to promote shared decision-making
Jelle Willem Lut, D.T. Ubbink
Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands

Background: Two surgical options are available for rectal cancer: sphincter-saving resection with primary anastomosis with or without a deviating ostomy, or perineal resection with a permanent stoma. As oncologic and quality of life outcomes are similar, decision-making should involve the informed patients’ preferences regarding benefits and risks, like anastomotic leakage, stoma-related complications and low anterior resection syndrome. A rectal cancer decision aid (RCDA) may support this shared decision-making process. We studied feasibility and acceptability of this RCDA among stakeholders. Material and Methods: The original RCDA was translated into Dutch and digitalized. It provides
Clinical-pathologic Features of Patients with Colorectal Cancer: Differences Between Emergency and Elective Surgical Cases

Nail Ersoz a, Eyup Duran a, Mustafa Tanriveren c, Mehmet Ince a, Ali Harlak a, Orhan Kozak a

a Department of General Surgery, Gulhane Military Medical Academy, Ankara, Turkey; b Department of General Surgery, Balikesir Military Hospital, Balikesir, Turkey; c Department of General Surgery, Diyarbakir Military Hospital, Diyarbakir, Turkey

Background: Ileus resulting from colorectal cancer is a serious complication. Patients who undergo emergency surgery have higher mortality and morbidity rates compared with elective surgery. The aim of this study was to compare the clinicopathologic features between emergency and elective surgical cases. Material and Methods: Patients undergoing emergency and elective surgery for colon and rectal cancer from February 2002 to December 2012 were included. Patient characteristics were compared for emergency and elective cases. Data were reviewed prospectively. Result: 299 patients undergoing curative resection of colorectal cancer were eligible for study. Of the patients, 56 cases presented with complete obstruction (mean age 60.6) while 243 cases presented with non-obstructive colorectal cancer (mean age 58.8). There weren’ t significant differences in proportions of age and gender between two groups (P<0.05). The following characteristics were found higher in emergency compared with elective cases: depth of invasion, regional lymph node metastasis, distant metastasis, American Joint Committee on Cancer (AJCC) stage. Conclusion: Emergency cases are associated with a more aggressive histopathological results and a more advanced stage than elective cases.

Surgical treatment of patients with rectal cancer at University Hospital Královské Vinohrady Prague

Pavel Lisy a, David Lukas b, Bohumil Mlynák b, Petr Sladecek b, Robert Gurlich b

a University hospital Královské Vinohrady, Prague, Czech Republic; b University Hospital Královské Vinohrady, Prague, Czech Republic

Background: Colorectal cancer is a leading diagnosis responsible for deaths of patients with malignant diseases in the Czech Republic. Material and Methods: Authors would like to present a prospective study based on results of all patients, who were operated for diagnosis of rectal cancer at the surgical department of University Hospital Královské Vinohrady in the period from January 2013 till December 2015. Result: Authors collected prospective data from all patients operated for diagnosis of rectal cancer with focus on thirty-day mortality, anastomotic leak, stage of disease and type of operation. Authors as well started with the detection and testing of CTCs (circulating tumor cells) as a prognostic and predictive biomarkers. For patients who have been tested for CTC we are continuing with the collecting of results during their follow up. Conclusion: We hope that personalized oncology and multidisciplinary approach could bring better results to patients.

Cautery knives and gastrotomies: an explosive combination

W. J. Bom a, I.C.H. Post b

a Tergooi ziekenhuizen, Hilversum, the Netherlands; b Academic Medical Center, Amsterdam, the Netherlands

Background: In 1964 Carroll described the first case of an intraoperative gastric explosion. Only seven cases were described during gastro-intestinal surgery using cautery knives. Intraoperative explosions will pose a threat to the patient as well as the surgical team. Material and Methods: A 59-year old man was presented to the surgical department with a stenotic adenocarcinoma of the pyloric part of the stomach. Excessive gastric retention was noted from the obtained CT-images. Therefore, orogastric lavage with manual manipulation was performed prior to the gastrotomy. When opening the emptied stomach using a cautery knife, an explosion ripped apart the ventral gastric wall spreading the apparently remaining gastric content in the abdominal cavity and operating theatre. Inspection showed a gastric rupture from the lesser to larger curvature without additional injuries. The post-operative course was complicated by subphrenic and paracolic abscesses that could be resolved by ultrasound-guided percutaneous drainage. Result: Gastric explosion are rare, but always caused by the...
cautery knife. Stomach gasses due to stasis of the gastric content and the subsequent fermentation/bacterial overgrowth. Hamond et al revealed an explosive mixture of 56% CO2, 28%, hydrogen, 6.8% methane, and 9.2% oxygen in a patient with pyloric stenosis. **Conclusion:** Extensive rinsing of the stomach via a oro/nasogastric tube is necessary even if the stomach appears emptied. Furthermore, in every occasion with gastric obstructive disease, the cautery knife must be avoided. Flushing the stomach with CO2 can dilute the O2-content and can be considered in order to avoid ignition if a cautery knife is used.

---

**MP-10**

**Enteroegenous cyst of the small bowel mesentery: A case report**

Jolanta Zacharic a, Donatas Danys a, Raminta Martinaityte b, Eligijus Poskus a, Tomas Poskus a, Kestutis Strupas a

a Center of Abdominal Surgery, Vilnius University Hospital Santariskiu Clinics, Vilnius, Lithuania; b Vilnius University, Vilnius, Lithuania

**Background:** Enteroegenous cysts are a very rare congenital abnormality that can be found anywhere within the gastrointestinal tract, most commonly in the small intestine. The exact incidence is unknown, but if present literature review consists of solitary case reports or small case series. Enteroegenous cyst diagnostic characteristics include (1) a well-developed coat of smooth muscle, (2) an epithelial lining of alimentary tract mucosa, and (3) intimate anatomic association with some portion of gastrointestinal tract. They are usually diagnosed in the first 2 years of life manifesting with abdominal pain or palpable masses or incidentally as asymptomatic during adulthood. **Material and Methods:** A 23-year-old woman presented with slightly painful mass in right inguinal region of 5 months duration. CT scan and ultrasound revealed cystic formation in right retroperitoneal space. Based on radiological findings, retroperitoneal cystic lymphangioma was diagnosed and the patient had undergone surgery. **Result:** During laparotomy, 7 x 7 x 5 mm cystic mass was identified on mesentery and excised. Histological results showed thick cyst coat with smooth muscle fibers. The final pathological diagnosis: enterogenous cyst with inflammation. **Conclusion:** Complete excision of the enterogenous cyst is the optimal treatment. The correct diagnosis usually emerges after the operation and histological examination of the cyst.

---

**MP-11**

**Serum microRNA expression profile as a novel diagnostic biomarker for esophageal squamous cell carcinoma**

Yutaka Shimada a, Yashinori Takei a, Kazuaki Watanabe a, Tomoyuki Okumura b, Takuya Nagata b, Kazuhiro Tsukada b, Haruka Fujinami b, Miwako Arima c, Tetsuya Abe d, Yasumasa Niwa d, Masahiro Tajika d, Tetsuo Sudo a, KazuHaru Shimizu a

a Kyoto University, Kyoto, Japan; b University of Toyama, Toyama, Japan; c Saitama Cancer Center Hospital, Saitama, Japan; d Aichi Cancer Center Hospital, Nagoya, Japan

**Background:** The findings of a recent analysis of microRNA (miRNA) suggest that serum miRNA has potential as a biomarker of esophageal squamous cell carcinoma (ESCC). In order to exclude several extrinsic and intrinsic factors, we focused on samples from superficial ESCC patients who underwent endoscopic mucosal resection (EMR). **Material and Methods:** Fifty-eight patients were enrolled between 2011 and 2015. After obtaining written informed consent, we successfully collected paired (pre and post treatment) serum samples from 43 superficial ESCC patients. Forty patients underwent EMR and were confirmed as stage 0 or Stage 1a. Microarray analyses of serum samples were performed using the 3D-Gene miRNA microarray platform (Toray). Normalization was achieved using the Quantile method, and 3 paired samples were excluded from the analysis because of poor quality. We then compared miRNA expression before and after EMR. We also compared post EMR serum (37 cases) to pre treatment serum from patients with advanced ESCC (22 cases). **Result:** Eight miRNAs significantly differed (P<0.01) between pre EMR and post EMR. On the other hand, 315 miRNAs significantly differed (p<0.01) between advanced ESCC and post EMR. The top 29 miRNAs clearly identified advanced ESCC cases from post EMR cases. Furthermore, 8 miRNAs were selected in superficial and advanced cases. **Conclusion:** Our results suggest that selected miRNAs may be useful biomarkers for the detection of ESCC.

---

**MP-12**

**Myocardium thermal evolution assessment by infrared camera, thermocouples and ultrasonic probe simultaneously during cardiac surgery**

Aniss Seghrouchni a, Celine Engrand b, Jean Claude Singquet a, Hubert Thaillades a, D Laux a, Emanuel Le Ciez a, Roland Demaria a

a Department of thoracic and cardiovascular surgery, A. de Villeneuve hospital, Montpellier, France; b IES, Montpellier university, Montpellier, France; c Laboratory of experimental surgery, Montpellier university, Montpellier, France
**Background:** Myocardial temperature was usually studied in only one point. The aim of this study is to evaluate both surface and in-depth myocardial temperature in real time during surgery. **Material and Methods:** Sternotomies were performed on swines and cardiopulmonary bypass instituted between right atrium and ascending aorta. Aorta was clamped and blood cardioplegia instituted. The myocardium thermal evolution was then studied in a multi-physical approach. A FLIR® SC-645 infrared camera was positioned fifty centimeters above the heart. Images of the thermal evolution were recorded every second during one hour. Simultaneously, thermocouples were positioned near the surface of the right and left ventricles to obtain reference values comparable to the infrared measurements. Finally, an ultrasonic probe was set into contact of the left ventricle in conjunction with an in-depth thermocouple. Both inspecting the same area, they provide information on the in-depth thermal behavior of myocardium. **Result:** Multi-physical measurements of the thermal evolution of the myocardium were performed in depth and on the surface of the heart. They reproduce the rapid decrease in temperature induced by the cardioplegia and the following global warming. The comparison between the different measurements proved that while the infrared camera provides information on the surface of the heart and can be implemented into a surgical block, the ultrasound allows the measurement of complementary data on the interior warming of the myocardium. **Conclusion:** Accurate non-invasive per operative measurements of surface and in-depth myocardial temperature are possible and should in the future be used to define real tool for decision support of new cardioplegia instillation.

**MP-13**

*Levitronix CentriMag LVAD Implantation through Left Minithoracotomy without CPB*

Umit Kervan a, Sinan Sabit Kocabeyoglu a, Mehmet Korahan a, Dogan Emre Sert a, Emre Aygun a, Ahmet Temizhan b, Mustafa Pac a

a Türkiye Yüksek İhtisas Hospital, Cardiovascular Surgery and Heart Transplantation Unit, Ankara, Turkey; b Türkiye Yüksek İhtisas Hospital, Cardiology and Heart Transplantation Unit, Ankara, Turkey

**Background:** We present the case of a patient in whom Levitronix CentriMag VAD cannulation was achieved through a left minithoracotomy, without the use of cardiopulmonary bypass (CPB). **Material and Methods:** A 54-year-old male with dilated cardiomyopathy was admitted to our department. Due to rapid aggravation of his condition while admission at our intensive care unit (ICU), we initiated intraaortic balloon pump counterpulsation via the left femoral artery. Despite maximum hemodynamic support, the heart showed no evidence of recovery. Furthermore the patient progressed to multiple organ failure. We decided on urgent CentriMag (Levitronix LLC, Waltham, MA, USA) implantation to rapidly decompress and support LV. We prefer using the subclavian artery (SA) with a side graft, as a different cannulation technique for outflow of Levitronix, to avoid the sternotomy. An anterolateral left minithoracotomy through the fifth intercostal space was performed to gain access to the apex of the heart. We used a circular Teflon felt of 5 cm diameter as a sewing ring to fix by bioglue on the Edwards inflow cannula to apex. **Result:** The LV apex cannulation was preferred for maximum flow and complete left ventricular decompression. Once no air bubbles were detected into the left ventricle by transesophageal echocardiography, the pump was started. The patient was transferred to the ICU. **Conclusion:** Our opinion is that the Levitronix CentriMag system is a reliable and facile temporary circulatory support system as a bridge to decision, and minithoracotomy and SA approach are safe cannulation without CPB technique in patients with refractory cardiogenic shock.

**MP-14**

*The use of platelet rich plasma (PRP) and platelet poor plasma (PPP) to aid haemostasis in a Jehovah’s witness patient undergoing emergency aortic aneurysm repair*

Agni Salem, Ahmed Moosa, Thomas Theologou, Seema Agarwal, Debbie Harrington, Manoj Kuduvalli, Aung Oo, Mark Field

Thoracic Aortic Aneurysm Service, Liverpool Heart & Chest Hospital, Liverpool, United Kingdom

**Background:** We present the case of a 56-year-old male presenting with an acute Type-A aortic dissection with an intramural haematoma requiring an emergency operation. The patient expressed his desire to have no blood products. However after discussion he consented to receive blood and blood products if required. Despite his consent the operating team felt it would be beneficial to attempt the surgery without allogeneic transfusion. **Material and Methods:** Cell salvage and anti-fibrinolytics (Aprotinin) were utilised. After induction of anaesthesia 1000mls of blood was collected into a citrated-bag. This was centrifuged into Platelet Rich Plasma (80mls) Platelet Poor Plasma (500mls) and Red Cells. The red cells were re-infused prior to the start of cardiopulmonary bypass. At the end of CPB, after the administration of protamine, both the PRP/PPP were re-infused together with 1500IU of Octaplex and 2g of Fibrinogen Concentrate. The TEG performed after this was normal except for prolongation of the R time, so an additional of 1000Units of Prothrombin Complex was administered. Guidance to the staff in ITU post-operative was not to use allogeneic blood however if the Hb was below 7g/dl to give IV iron. **Result:** The patient was extubated after 4 hours. Notably the patient refused transfusion when he was awake on the ITU. His sputum cultured pseudomonas but was treated with two days of IV antibiotics and switched to oral after that. A single episode of acute epistaxis was managed conservatively and the patient was put on iron supplement therapy and discharged 6 days postoperatively. His Hb dropped to 75mg/dl.
so an IV iron infusion in the ward has been established. **Conclusion:** This case demonstrates that the use of PRP/PPP in high risk surgery is beneficial and if combined together with Factor Concentrates it is possible to avoid allogeneic transfusions and reduce transfusion costs.

---

**MP-15**

**Predictors of mortality following above knee amputation for lower limb ischaemia**

*Adam Hague, Ana-Catarina Pinho-Gomes, Jonathan Ghosh*

Department of Vascular Surgery, University Hospital of South Manchester, Manchester, United Kingdom

**Background:** Above-knee amputation (AKA) is a last-resort operation with high post-operative morbidity and mortality. The aim of this study was to identify preoperative risk factors for mortality in patients undergoing AKA for lower limb ischaemia. **Material and Methods:** Medical records of all patients who underwent AKA for limb-threatening ischaemia at University Hospital of South Manchester between the 1st September 2014 and the 31st December 2015 were retrospectively reviewed. Patients were followed-up until the 31st January 2016. **Result:** A total of 65 patients (33 male; median age 75 [IQR 65-82] years) were included. 54 were treated for critical limb ischaemia, and the remainder for acute ischaemia. Hypertension, ischaemic heart disease, chronic obstructive pulmonary disease and type 2 diabetes mellitus were common (prevalence of 71%, 37%, 40% and 47%, respectively). Median length of stay was 27 [IQR 17-56] days and the proportion of patients requiring long-term residential care significantly increased from admission to discharge (p=0.005). In-hospital mortality was 17% (11 patients), in all cases due to septic complications, most commonly from respiratory and wound sources. 90-day mortality was 30% (19 patients). Heart failure (OR 9.5% CI 2.1-36.8; p=0.003) and eGFR<30 (OR 11.9 95% CI 1.4-101.6; p=0.023) were independent predictors for 90-day mortality. At a median follow-up of 7.5 [IQR 2-16] months, all-cause mortality was 38% (25 patients) and median survival was 60 [IQR 29-102] days. **Conclusion:** AKA performed for limb-threatening ischaemia is associated with high morbidity and mortality and hence it imposes a major health-care burden. Patients with renal impairment and heart failure on admission have a significantly increased mortality risk.

---

**MP-16**

**Characteristics and surgical treatment of cutaneous vascular lesions**

*Sabahattin Destek a, Vahit Onur Gul b, Serkan Ahioglu b*

a Via Hospital, Istanbul, Turkey; b Edremit Military Hospital, Balikesir, Turkey

**Background:** Hemangiomas are characterized by benign neoplastic proliferation of vascular endothelial cells. Mast cells play a role in neoangiogenesis and increases in the proliferation phase and returns to normal levels in the involution phase. They are mostly benign lesions and regressed spontaneously. They are often seen in neonatal period and childhood. They are seen more frequently in females. They occur mostly in the head and neck region. They are usually sporadic cases, but they may present with specific syndromes and heredetary. Complications such as ulceration, bleeding, infection can be seen. **Material and Methods:** The study included surgical excision between the years 2010-2015 were evaluated in patients with a diagnosis of cutaneous hemangiomatosis by histopathologically examination in our clinic. **Result:** 36 patients (13 females, 23 males, mean age 37) were included to our study. All skin lesions were in different parts of the body. 19 patients had capillary hemangioma, 15 patients had pyogenic granuloma, one patient had cavernous hemangioma and one patient had hemangiopericytoma. Average hemoglobin, hematocrit value and C-reactive protein values of patients were 11.1 g/dl, 36.1% and 1.4 mg/dl respectively. All patients underwent total excision. Average follow-up time was 36 (24-60) months. Mortality and postoperative complications were not observed in this study group. **Conclusion:** Hemangiomas are benign neoplastic proliferation of vascular endothelial cells characterized by spontaneous regression. However, a small portion of hemangiomas, depending on the anatomical localization and aggressive tumor growth can lead to life-threatening complications. Therefore, if hemangiomas don’t regress or they show permanent scarring then should be surgically treated later.

---

**MP-17**

**Spontaneous aortoenteric fistula involving the sigmoid**

*Eleonora G. Karthaus, Ivo C.J.H. Post*

Spaarne Gasthuis, Hoofddorp, the Netherlands

**Background:** Introduction: Primary aortoenteric fistula (PAEF) is a pathological communication between the aorta and any portion of the gastrointestinal tract. The pathology is very rare and easily overlooked during the diagnostic process. **Material and Methods:** Presentation of Case: We report the exceptional case of an 86-year-old man with episodes of abdominal pain and rectal bleeding of unknown cause over a period of 1.5 months due to a PAEF to the sigmoid. A sigmoidectomy was performed and a rifampicin-soaked aortic graft was placed. The patient had an uneventful post-operative recovery. The duration of symptoms, the anatomic location of the fistula and the outcome after surgery makes this case unique. **Result:** Discussion: With an incidence of 0.04-0.07% in all patients with aortic aneurysms a PAEF is very rare. Only 2% of PAEF’s involves the sigmoid. The most common cause is an atherosclerotic aortic aneurysm. Patients with PAEF can present with a triad of symptoms including gastrointestinal bleeding, abdominal pain...
and a pulsating mass. Contrast-enhanced computer-to-
tomography scans (CTa) are the most accurate tool to de-
monstrate a PAEF. Without a strong clinical suspicion, diag-
osis of PAEF is hard. The overall PAEF-related mortality is high
(61-100%) and decreases after surgery (30-40%). Conclu-
sion: Conclusion: A primary aortoenteric fistula involving the
sigmoid is very rare. Clinical presentation can vary, diag-
nosis can be difficult and surgical options may differ. Even
with low suspicion of PAEF, we recommend performing a
CTa. With a high overall mortality of more than 60% due to
exsanguinating, surgical treatment is always indicated.

**MP-18**
Portomesenteric venous thrombosis – a rare but
probably under-reported complication of laparo-
scopic surgery

Yan Mei Goh a, Ajay Tokala b, Tarek Salem Hany c,
Kishore Pursnani d, Ravindra Date e

a Department of Upper Gastrointestinal Surgery, Lanca-
shire Teaching Hospitals NHS Trust, Chorley, United
Kingdom; b Department of Radiology, Lancashire
Teaching Hospitals NHS Trust, Preston, United King-
dom; c Department of Colorectal Surgery, Lancashire
Teaching Hospitals NHS Trust, Preston, United King-
dom; d Department of Upper Gastrointestinal Surgery,
Lancashire Teaching Hospitals NHS Trust, Preston,
United Kingdom

**Background:** Porto-mesenteric venous thrombosis (PMVT)
is a rare but well reported complication following lapa-
roscopic surgery. Development of thrombosis can occur any
time and the risk remains high until six months after surgery.
As the presentation of PMVT often manifests as non-specific
abdominal pain, the diagnosis is often delayed or found in-
cidentally. PMVT is associated with risk factors which cause
alterations in main factors that make up Virchow’s triad. We
present three cases of PMVT following laparoscopic surgery.

**Material and Methods:** Case 1: A 71 year-old morbidly
obese lady underwent elective laparoscopic repair of giant
hiatus hernia (LGHH). Post-operatively she developed multi-
organ dysfunction. Computed tomography (CT) scan re-
vealed portal venous gas and extensive small bowel infarc-
tion. Case 2: A 51-year-old gentleman with previous history of
deep venous thrombosis had elective LGHH repair. He presented 8 weeks post-operatively with severe abdominal
pain and required major bowel resection secondary to
PMVT. Result: Case 3: An 86-year-old lady developed wors-
ening abdominal pain three days after laparoscopic right
hepaticoectomy for adenocarcinoma. CT scan revealed
thrombus in the portal vein. She was commenced on anti-
coagulants and did not require surgical intervention.

**Conclusion:** Current guidelines for thromboprophylaxis follow
up may not be adequate for patients at risk of developing
PMVT. Hence we propose a prolonged period of thrombo-
 prophylaxis in those undergoing major laparoscopic surgery
until formal guidelines become available.

**MP-19**
Atypical lower abdominal pain

Mohummad Shaan Goonoo a, Ravi Raj Goel a, Nilofar
Husna b, Bilal Rawshdeh b, Robert A Salaman a

a East Lancashire Hospitals NHS Trust, Blackburn,
United Kingdom; b Leeds Teaching Hospitals NHS
Trust, Leeds, United Kingdom

**Background:** Hepatic artery aneurysms (HAAs) are rare (in-
cidence 0.002-0.4%). Diagnosis of HAAs is of importance
because of the high mortality rate associated with rupture.

**Material and Methods:** A 74y old man with lower ab-
dominal and back pain of three months’ duration, put down
to osteoarthritis of the spine, had a CT scan to exclude intra-
abdominal causes. A partly calcified and partially throm-
osed aneurysm of the common hepatic artery measuring
40x47x41mm was found. He was referred to the hepato-bili-
ary and vascular teams at our centre. Our patient was
treated with aneurysmectomy and revascularisation due to
close proximity of the lesion to the celiac axis, its size and
fusiform shape. HAAs are usually asymptomatic and mostly
caused by atherosclerosis. Ultrasound Doppler and CT are
the main investigations but angiography remains the gold
standard. Treatment strategies depend on the patient’s
health and morphology and location of lesion. Percutane-
ous embolization is the preferred technique for intrahepatic
aneurysm and endovascular therapy is the emerging treat-
ment for visceral aneurysms. Surgical treatment involves li-
gation or revascularization

**Result:** Post-operatively his recovery was complicated by anaemia, thrombocytopenia, and a vein-harvest site haematoma. He was safely discharged 6 weeks later with no evidence of deranged liver function. A 3 month and 6 month post-operative CT angio-
grams were arranged as follow-up.

**Conclusion:** Visceral aneurysms ≥ 2cm should be treated. Management is often based on local preference due to a lack of evidence favouring specific approaches. More reports are required in the literature on current and new techniques (e.g. surgical roboticst) to inform management of this rare phenomenon.

**MP-20**
An unusual case of penile metastasis following ab-
dominoperineal resection with VRAM flap recon-
struction for rectal adenocarcinoma

Andrei Kozan, David Ilsley, Nicholas Rhodes

Calderdale and Huddersfield NHS Foundation Trust,
Huddersfield, United Kingdom

**Background:** Metastatic deposits to the penis from colo-
rectal malignancy are a rare occurrence in clinical practice.
Although a richly vascularised organ with important circula-
tory communications, the penis is seldom the site of metas-
tases. The first of these cases was reported in 1870 by
Eberth. **Material and Methods:** We report the case of a
male that developed penile metastasis from rectal adenocarcinoma well after 1 year of his initial treatment for rectal cancer. This is the first case described after abdominopereineal resection with perineal vertical rectus abdominis myocutaneous flap reconstruction. Our article is the 30th case report of penile metastasis from rectal adenocarcinoma since Ketata et al reported their 20th case in 2007. **Result:** The patient underwent complete penile resection for curative purpose with subsequent regular follow-up, contrary to palliative treatment. **Conclusion:** In conclusion, this report highlights the rarity of the penis as site of metastasis and marker of disseminated disease, however this is not the case in our report and albeit rare, cure can be achieved in isolated cases.

### MP-21
**Is Molecular Subtypes of Breast Cancer Related with Axillary Involvement? A Retrospective Study of 86 Cases**

**Enver İlhan** a, **Orhan Ureyen** a, **Ozcan Alpdoğan** a, **Abdullah Senlikçi** a, **Demet Aşý** a, **Uğur Gökceli** a, **Ulvi Mehmet Meral** b

a Bozyaka Research and Training Hospital, Izmir, Turkey; b Izmir Military Hospital, Izmir, Turkey

**Background:** Gene expression analysis has identified several subtypes of breast cancer. The relationship between axillary involvement and molecular subtypes of breast cancer is controversial. The purpose of our study is to examine whether the relationship between molecular subtypes and axillary involvement is useful for decision of surgical interventions for axilla. **Material and Methods:** Medical records and files of 86 patients were examined retrospectively. The molecular subtypes were determined with respect to St. Gallen International Expert Consensus 2013. The independent variables were age, gender, menopausal status, neoadjuvant treatment, tumor size, axillary involvement, TNM stage, histologic type and grade, estrogen receptor (ER), progesteron receptor (PR), HER-2 status and the presence of p53 and Ki-67 gene expression. Molecular subtypes and nodal involvement were compared in terms of independent variables. Also Luminal A and Luminal B subtypes were compared with each other. **Result:** Luminal A, Luminal B, HER-2 (+) and Triple Negative (TN) groups were consisted of 20(23,2%), 47(54,6%), 8(9,3%) and 4(4,6%), respectively. The presence of p53 gene expression in TN group was different from the presence in Luminal A and B groups(p<0,05). There was no significant difference between the groups in terms of other variables. Forty (46,4%) cases had nodal involvement. There was no difference between nodal involvement positive and negative groups in terms of age, molecular subtypes, histologic grade and hormon receptor status. **Conclusion:** We couldn’t find an association between nodal involvement and molecular subtypes, in our study. The prediction of axillary involvement does not seem possible by the examination of molecular subtypes of breast cancer, according to these results.

### MP-22
**Management of Vulvar Fournier Gangrene with Vacuum Assisted Wound Healing Technique**

Oğuz Hançeroğluğlari a, Süleyman Deniz Kahraman a, Yaşar Subutay Peker b, Ümit Alakuş b, Mahmut Yılmaz a, Murat Urkan a, İsmail Hakkı Özerhan a

a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey; b Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey

**Background:** Fournier gangrene is necrotizing fasciitis of soft tissue specially localized at perineum. Co-morbidities such as diabetes mellitus, obesity, malnutrition, peripheral vascular disease, steroid medication and immunosuppressive conditions are predisposition for Fournier gangrene which is more common at female. At this case we aimed to present management and treatment of vulvar Fournier gangrene with vacuum assisted wound healing technique (VAWHT). **Material and Methods:** Management and treatment of vulvar Fournier gangrene with VAWHT is presented. **Result:** 45-year-old female patient with history of diabetes mellitus applied to our clinic with left vulvar pain, weakness and fever. White blood cell count was 6000/μL and had unregulated glycemia. Physical Examination showed severe inflammation of left vulva, with necrotic and bullous epidermis. Patient was planned for urgent surgery. Debridement and curettage was applied to vulva and wound was left open for secondary healing. Wide spectrum antibiotics was mediated. On postoperative day (POD) 2, patient still had high fever and no signs of healing was observed. VAWHT was applied for the patient on POD 3. VAWHT was applied to patient for 5 days. Debridement and curettage was reapplied after VAWHT for every 2 days under local or spinal anesthesia for 8 times. Wound of the patient healed well after last debridement and curettage and primary saturation of open wound was provided. Patient was discharged from hospital on 24th day of hospitalization. **Conclusion:** Fournier gangrene is an aggressive soft tissue infection with high mortality/morbidity. Early diagnosis and treatment is important for healing, however still may result with mortality/morbidity. We believe that further treatment techniques such as VAWHT are feasible for Fournier gangrene treatment with fast positive outcomes.
MP-23
Isolated midline upper lip pit
Stephanie Hili, Kai Yuen Wong
Salisbury NHS Foundation Trust, Salisbury, United Kingdom

Background: Congenital pits of the lip are uncommon and may be associated with conditions such as Van der Woude syndrome. Isolated presentations are extremely rare. We present such a case a review the literature. Material and Methods: A fit and well 7-year-old female presented with an asymptomatic isolated midline upper lip pit. This was not associated with cleft lip or palate. Examination revealed no other congenital abnormalities. There was no significant family history. The pit was treated successfully with excision. Intraoperatively, a fistula probe was inserted via the cutaneous opening of the pit, which confirmed no intraloral communication. The entire sinus tract was then excised and the wound directly closed. Histology revealed irregular pilosebaceous units with some fibrous scarring in the upper dermis. Result: Congenital pits are one of the most uncommon developmental malformations of the lip. Lower lip pits are commonly associated with cleft lip and/or palate. Associations with other midline deformities such as double frenulum, sinus of the frenulum, nasal dermoid cyst and hypertelorism have also been described. Conversely, only around 18 cases of isolated upper lip pits have been reported. The mechanisms involved in congenital upper lip sinus formation are incompletely understood. Three main proposals have been suggested including invagination theory, merging theory and fusion theory. Conclusion: Isolated lip pits are extremely rare developmental defects. It is therefore important to investigate and exclude associated syndromes.

MP-24
Surgery for anterior cutaneous nerve entrapment syndrome (ACNES) in a pediatric population: A prospective case series
Murid Siawash, Marc Schettinga, Rudi Roumen
Maxima Medical Center, Veldhoven, the Netherlands

Background: Treatment modalities for chronic abdominal pain due to childhood anterior cutaneous nerve entrapment syndrome (ACNES) include systemic analgesics and abdominal wall nerve blocks. Studies on efficacy of surgery in unreponsive children are small and retrospective. Objective of this prospective study is to investigate the effectiveness of an anterior neuroectomy in a pediatric population with ACNES in a tertiary referral center. Material and Methods: Children failing a conservative treatment including nerve blocks who underwent surgery for ACNES between March, 2012 and January, 2016 qualified for study. Pain was monitored using a PI-NRS scale (0, absent to 10, unbearable pain). Outcomes were pain relief and adverse events. Result: A total of 60 children (age 15, range 8 to 17, 79% female) with ACNES were operated in day care. Pain level prior to surgery was 8 (PI-NRS, range 6-9). Most (75%) suffered from a right lower abdominal pain. Abdominal wall nerve blocks were temporarily successful in all. Four to six weeks postoperatively, most children (81%) experienced pain relief. Complications were not reported. Long term success rate (median, 20 months, range 4 - 44) was 67%. Conclusion: Surgery is well tolerated and provides pain relief in four of five children with ACNES failing conservative treatment.

MP-25
The Effects of Facility Type on Long-Term Survival in Surgically Treated Pancreas Cancer
Alessandro Paniccia, Patrick Hosokowa, William Henderson, Richard Schulick, Barish Edil, Martin Mccarter, Csaba Gajdos
University of Colorado, Denver, United States

Background: Several factors affect survival in surgically treated pancreatic adenocarcinomas (PDAC), We evaluated the effect of facility type, including academic medical centers (AMC), comprehensive cancer centers (CCC), and community cancer programs (CCP), on overall survival. Material and Methods: A retrospective cohort-study using the National Cancer Data Base. Selected cohort included all historically proven PDAC who underwent pancreatic surgical resection between January 1998 and December 2006. A Cox proportional hazards survival model was used to examine factors associated with risk of mortality. Result: Of the 22,229 patients identified, treatment was as follows: AMC (n=10 875), CCC (n=9 062), and CCP (n=1 292). Patients treated at AMC were significantly more likely to have a higher histologic tumor grade, median number of lymph nodes examined, rate of positive lymph nodes, income and educational status. The three groups were similar in terms of tumor size and rate of negative surgical margins. Patients treated at AMC were more likely to receive postoperative chemotherapy or radiation and had a longer median overall survival compared with CCP and CCC (16.9 vs. 15.2 vs. 13.2 months, respectively; p<0.006). Multivariable analysis suggested that treatment received at AMCs was associated with a 19% and a 13% increase likelihood of survival compared to CCP and CCC (C-index= 0.87). Conclusion: Patients with surgically resected PDAC treated at AMC have significantly longer survival compared to CCP and CCC despite worse histological grade and higher number of positive nodes. Amongst other factors, facility type remained a significant variable predicting overall survival in multivariable analysis.
MP-26
Perioperative complications after pancreatic surgery for malignancy comparing cardiac versus non-cardiac patients

Lukáš Havlíč, Jan Bafrnec, Bohumil Mlýnek, Robert Gürlich
University Hospital Královské Vinohrady Prague and Charles University Prague, Prague, Czech Republic

Background: The authors present the results of the study comparing the incidence of complications after surgery of the pancreas and periampullary area for malignancy. According to patient history, patients were divided into cardiac and non-cardiac groups. Material and Methods: In the period from 1/2011 to 6/2013 there were 7350 surgeries performed at the surgical department at the University Hospital Královské Vinohrady including 1421 operations due to malignancy. For the pancreatic and periampullary area tumors there were 126 operations. In this group there were 98 non-cardiac patients and 28 cardiac patients. Result: Cardiac patients have same risk of complication after pancreatic surgery as non-cardiac patients. Conclusion: A history of heart disease may be one of the causes for complication. For the early diagnosis of pancreatic cancer. According to our results, we did not observe that cardiovascular comorbidity would increase the risk of perioperative complications. In the group of cardiac patients, there wasn’t significantly increased mortality, despite a higher median age.

MP-27
Early detection of pancreatic cancer using diffusion-weighted imaging (DWI): 2 cases report

Fumio Yamamoto a, Takemitsu Sasaki b, Kentaroh Yamamoto c, Mami Yamamoto c, Guiding Zhang d, Hirotaka Taketomi c, Kazuya Uchikawa ad

a Yamamamoto Memorial Hospital, Imari, Japan; b Fukuoka Univ. Hospital, Fukuoka, Japan; c Yamamoto Memorial Hospital, Imari, Japan; d Saga Medical University, Saga, Japan

Background: Pancreatic cancer is an aggressive malignancy with high mortality rates. Because of difficulties in early diagnosis, only few cases can undergo curative surgery at the time of diagnosis. The early detection is the most important strategy to improve the typically poor prognosis of the disease. Tumors sized less than 2cm have a relatively good prognosis. We herein report 2 cases of small pancreatic cancer tumors detected by DWI and discuss its usefulness for the early diagnosis of pancreatic cancer. Material and Methods: Case 1: An 81-year-old man with back pain and diarrhea. CT scan showed no abnormalities, whereas the MRI examination (1.5-T imager Toshiba) DWI revealed a small lesion with low ADC value in the pancreatic body.

ERCP and MRCP displayed slight constriction with distal dilation in the main pancreatic duct. EUS showed a solid mass with irregular edges. A distal pancreactectomy with splenectomy was performed. The tumor had 1.8 cm in diameter and was stage 0 according to TMN classification. Result: Case 2: A 51-year-old woman with abdominal distension and diarrhea. CT scan diagnosed only multiple hemangiomas in liver but the DWI showed a small lesion with low ADC value in the pancreatic body. She refused further examination and was readmitted 9 months later with abdominal distension due to multiple metastatic tumors in liver. Hepatic segmentectomy was performed and pathology showed metastatic neuroendocrine tumors from pancreas. Conclusion: DWI has a potential clinical application and it might be a powerful tool for the evaluation and early detection of pancreatic cancer.

MP-28
Surgical Second Chance for Local Advanced Pancreatic Cancer Patients: Modified Appleby Operation with Hepaticotruncal Reconstruction

Mehmet Fatih Can a, Öğuz Hançerlioğullari b, Yaşar Subutay Peker a, Mehmet Ali Sahin b, Nazif Zeybek a

a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey; b Gülhane Military Medical Academy, Department of Pathology, Ankara, Turkey

Background: R0 resection of pancreatic cancer (PC) may rarely result with cure and more frequently with prolonged survival. The major unresectability criteria is invasion of major vessels for the pancreaticoduodenectomy procedure (PD). However appleby procedure (AP) tackles this by resecting the major invaded vessels which are frequently coeliac trunc (CT) and splenic vessels (SV) except superior mesenteric artery (SMA), aorta and gastroduodenal artery (GA) (for liver perfusion, if CA reconstruction can’t be done) at selected patients. At this study, we shared our experience of modified AP applied to 75-years-old female patient. Material and Methods: Case of an AP applied PC patient is presented. Result: Patient of PC with CT, common hepatic artery (CHA) and SV invasion applied to clinic. Unresectable tumor according to PD was decided for modified AP. The tail+body of pancreas with spleen was dissected and SV+CT+CHA was ligated than transected. End-to-end anastomosis was completed the adjuvant cures and is still alive with no relapse for 8 months. Conclusion: Modified AP provides a second chance of R0 resection for the inoperable PC patients according to PD by expanding the operability criteria of PC and as a result increases the PC survival. This operation depends on the idea of resection of major invaded vessels which are commonly CHA, CA and SV with reconstruction of the resected vessels if needed for sufficient hepatic blood flow (Modified AP) with complete local resection of the tumor. In some patients, an intact GA may be enough...
but if not, reconstruction may be needed and preoperative angiography may be useful for reconstruction.

MP-29
A trial for prevention of pancreatic fistula (PF) after distal pancreatectomy – the invagination method of pancreatec tomy

Nagato Katsura a, Yasuhiro Kawai b, Takashi Gomi c, Kenji Okumura a, Takahiko Haoshi b, Seijun Fukuda b, Kenji Shimizu a, Masugi Satoh c

a Misugikai Satoh Hospital, Hirakata-City, Japan; b Misugikai Otokoyama Hospital,Yawata-City, Japan; c Misugikai Satoh Hospital, Hirakata-City, Japan

Background: Following a prevalence of GIA for treatment of pancreatic stump, more preventive technique for postoperative pancreatic juice leakage has been required. We experienced 5 successive patients(pts) underwent our new technique, to invaginate pancreatic cut-end to stomach, which could prevent from occurring PF. Material and Methods: 5 pts; 4 female and 1 male (mean age, 60.0 years old), 2 of pancreatic cancer in pancreatic tail, 2 of IPMN, and 1 of invasion of transverse colon cancer to pancreatic tail. 4 pts were elective surgery and one was subemergent case following left hemicolectomy and distal pancreatectomy, causing grade B - PF(ISGPF). Surgical technique is below; after resection of distal pancreas with GIA, without any additional reinforce, to invaginate the stump to the gastric posterior wall with single layer anastomosis using 3-0 absorbable suture. The anastomosis is not complicated, taking about 15 minutes. Result: Drain tubes were removed on 3rd postoperative(PO) day in the 5 pts. Grade A - PF was admitted in 2 pts but all were discharged on foot within 11th PO day. Conclusion: Our technique could be one of the suitable methods for such patients with pancreatic body and tail tumor.

MP-30
Is the Blumgart-Jarnagin Classification System Useful in Determining Pre-Operative Resectability for Hilar Cholangiocarcinoma?

Nicholas Bird, Mohamed Elmasry, Mohammed Elniel, Michael Kelly, Stephen Fenwick, Hassan Malik

UHA, Liverpool, United Kingdom

Background: The Blumgart-Jarnagin Memorial Sloane Kettering system assesses pre-operative radiological resectability for patients with hilar cholangiocarcinoma and allocates a ‘T’ score which relates to resectability, T1 being the most resectable and T3 being the least resectable. The aim was to determine the utility of the classificatory system in a large U.K. based cohort of hilar cholangiocarcinoma patients. Material and Methods: A prospectively collected database of 115 borderline resectable cholangiocarcinoma patients undergoing staging over a 10-year period from January 2005 to June 2015 was retrospectively analysed. Retrospective classification of staging cross-sectional tomography was utilised to accord each suitable patient a score. 74 patients were classified as having hilar cholangiocarcinoma. 56 patients were categorisable according to the Blumgart-Jarnagin score. Result: Blumgart Score Laparoscopy Only Laparotomy Open/Close Resection % Resection T1 6 2 11 57.9 T2 1 1 10 83.3 T3 10 8 7 28 T1; Z-Score -1.4758; p= 0.14 T1; Z-Score 1.9978; p= 0.0455 T2; T3; Z-Score 3.1616; p= 0.00158 T1 + T2; T3; Z-Score 2.9569; p= 0.00381. Conclusion: No significant difference in resectability between T1 and T2 tumours was detected in this cohort. There was significant difference between T1 and T3 tumours, and T2 and T3 tumours in resectability. The combined category of T1 and T2 tumours demonstrates a significant difference in resectability compared to the T3 category. The data indicates that the scoring system could be adapted to a binary classification which would make preoperative assessment of resectability simpler.

MP-31
Liver semiautomatic virtual resection

Vaclav Liska a, Miroslav Jirk b, Tomas Ryba c, Miroslava Svobodova a, Hynek Mirka a, Zbynek Tonar a, Lada Eberlova b, Martin Skala a, Richard Palek a, Vladislav Treska a

a Department of Surgery and Biomedical Center, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic; b Biomedical Centre, Charles University in Prague, Faculty of Medicine and Teaching Hospital Pilsen, Pilsen, Czech Republic; c Department of Computer Science, University of West Bohemia in Pilsen, Pilsen, Czech Republic; d Department of Imaging Methods and Biomedical Center, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic; e Department of Cybernetics, University of West Bohemia in Pilsen, Pilsen, Czech Republic; f Department of Histology and Embryology and Biomedical Center, Faculty of Medicine in Pilsen, Charles University in Prague, Pilsen, Czech Republic; g Department of Histology and Embryology and Biomedical Center, Faculty of Medicine in Pilsen, Charles University in Prague, Pilsen, Czech Republic; h Department of Anatomy and Biomedical Center, Faculty of Medicine in Pilsen, Charles University in Prague, Pilsen, Czech Republic; i Department of Surgery, Faculty of Medicine and Teaching Hospital Pilsen, Charles University in Prague, Pilsen, Czech Republic

Background: The development of liver surgery achieved many important mile stones, but full use of all technical and clinical progresses is slowed down by estimation of liver regeneration of future liver remnant volume. The aim of this study was to prepare software that will be able to help to surgeons and radiologist in volumetry of liver remnants. Material and Methods: LISA (Liver Surgery Analyzer) software written in Python programming language is developed in the cooperation with radiologists and surgeons to support liver surgery. The present functions of LISA include...
semiautomatic segmentation of the liver, vessels, and lesions from abdominal CT images, liver volumetry and liver lesions volumetry and their classification into hypo-, hyper- and mixed-form. Several methods have been tested for the liver and lesions segmentation. Finally the semiautomatic Graph-Cut method is used for the liver segmentation and growth region, texture and other methods are used for the lesion segmentation. **Result:** The LISA liver segmentation and lesions detection were tested on the set of patient abdominal CT venous and arterial series of 30 clinical events. Furthermore liver segmentation and lesion detection were tested within the accessible web-side CT data sets recommended for international comparison SLIVER07. **Conclusion:** The LISA liver segmentation and lesions detection were tested on the set of patient abdominal CT venous and arterial series of 30 clinical events. Furthermore liver segmentation and lesion detection were tested within the accessible web-side CT data sets recommended for international comparison SLIVER07. The work was supported by the project CZ.1.05/2.1.00/03.0076 from European Regional Development Fund.

**MP-32**
*Intensive Care Unit Hospitalization after Cytoreductive Surgery and Hyperthermic Intra-Peritoneal Chemotherapy (HIPEC)*

John Spiliotis a, Evangelos Vafias a, Eleftherios-Orestis Argyriou a,b, Nikolaos Vaos a, Athanasios Rogdakis c, Kalliopi Kastrinaki a, Archontia Vaxevanidou a, Maria Zakka a, Urania Kalaidopoulou a, Elias Efstathiou a

a Metaxa Cancer Hospital, Piraeus, Greece; b York Teaching Hospital, York, United Kingdom; c “Agios Pantaleimon” Hospital, Piraeus, Greece; d “G. Gennimatas” Hospital, Thessaloniki, Greece

**Background:** Peritoneal metastasis is nowadays treated with the complex procedure of cytoreductive surgery and hyperthermic intra-peritoneal chemotherapy (CRS+HIPEC). Given the fact that the procedure presents high morbidity and mortality rates, admitting patients in the ICU seems inevitable. In our study, we try to determine the factors that indicate when admission in the ICU is necessary. **Material and Methods:** We examine retrospectively 230 patients (140 females, 90 males) with PM, who were operated on from November 2005 until November 2015 and underwent CRS+HIPEC. We divided our patients in two groups, based on whether they were extubated immediately post-operatively or not, so they were admitted in the ICU. We also distinguish a group of patients who, after initial extubation, had to be re-intubated and transferred to the ICU. **Result:** We present morbidity and mortality rates for each of the aforementioned groups, along with the complications that developed in each case (thoracic, gastrointestinal, renal). We identify that morbidity and mortality rates in both examined groups are approximately similar; the course changes when a complication occurs, and this increases mortality especially if the onset of the symptoms is delayed. Also, these rates are much worse for the group that had to be re-intubated and transferred to the ICU. **Conclusion:** On the whole, we conclude that the decision of admission to the ICU immediately post-operatively is a hard decision, depending on multiple factors; therefore the use of an easy predictive method is not realistic and a more individualized and patient-to-patient approach is preferable.

**MP-33**
The 10% rule. Is it really the most effective method to harvest sentinel lymph nodes in malignant melanoma?

*John Ranson a, Nicolas Pantelides b, Gerard Laitung b*

a Central Manchester Foundation Trust, Manchester, United Kingdom; b Royal Preston Hospital, Preston, United Kingdom

**Background:** The "10% rule" has become widely accepted by surgeons performing sentinel lymph node biopsy (SLNB) for melanoma. It involves sampling all nodes with a radiation count greater than 10% of the hottest node, together with all blue and macroscopically abnormal nodes. Our study compares the "10% rule" with other proposed definitions of the sentinel node(s), to determine whether these could reduce the number of nodes harvested without compromising the sensitivity of the procedure. **Material and Methods:** We reviewed 537 SLNBs performed for primary melanoma from 2009-2015. SLNB was offered to all patients with 1–4mm Breslow thickness melanoma and sentinel nodes were harvested according to the "10% rule". **Result:** 116 patients (22%) had at least one positive sentinel node. Within this cohort there were 44 positive nodal basins from which more than one sentinel node had been harvested. No positive nodes were missed using the 10% rule. This compared to 1.7% of positive nodes being missed if only the 2 hottest and blue nodes were taken, 3.3% if just hot nodes were taken, 6.7% if just the 2 hottest nodes were taken and as many as 40% using the hottest node only technique. **Conclusion:** Our data supports the continued use of the 10% rule. Of the alternate sampling criteria, only removing the hottest 2 nodes or the hottest node alone would have noticeably reduced the total number of nodes harvested. However, the cost of this is an unacceptable increase in positive nodes missed and patients under staged.
MP-34
Giant mesenteric lymphangioma: a rare cause of a life-threatening complication in an adult
Lydia Edwards a, Khurram Siddique b, Adesina Fawole b, Farhan Akram b
a Leeds medical school, Leeds, United Kingdom; b Mid Yorkshire Hospital NHS Foundation Trust, Dewsbury, United Kingdom

Background: Mesenteric cyst lymphangiomas (MCLs) are rare benign tumours of unknown aetiology seen mostly in children. Clinical presentation can be diverse ranging from incidental abdominal cysts to an acute abdomen. These are rare in adults, especially as a cause of recurrent bowel obstruction. We present here a complex case of young man who was a diagnostic conundrum and posed significant management challenges. Material and Methods: A 24-year-old previously fit and healthy young man presented with a 2-week history of cramping, central abdominal pain and vomiting requiring acute hospital admission. No other symptoms were reported. Physical examination revealed fullness and tenderness over the left lower abdomen. An ultrasound and CT Both suggested a large multi-septate cystic lesion in the left abdomen and pelvis with a possibility of mesenteric origin. Recurring symptoms required urgent surgical exploration which showed a giant thick-walled, multiloculated cystic lesion originating in the mesentery. The mass was rotated 360 clockwise causing a closed loop obstruction of the mid small intestine. The mass was excised and continuity restored by an anastomosis. He made an uneventful recovery and was discharged on day 5.

MP-35
Spinal versus General Anaesthesia in Surgery for Inguinodynia: A Randomised Controlled Trial (SPINASIA trial)
W.A.R. Zwaans a, b, L.H.P.M. Le Mair a, M.R.M. Scheltinga a, b, R.M.H. Roumen a, b
a Máxima Medical Center, Veldhoven, the Netherlands; b Solvita Center of Excellence for Abdominal Wall and Groin Pain, Eindhoven, the Netherlands

Background: Chronic inguinodynia (groin pain) is a common complication following inguinal herniorrhaphy or Pfannenstiel incisions but may also be found after other types of (groin) surgery. If conservative treatments fail, tailored remedial surgery (neurectomy and/or mesectomy) may be considered. Retrospective studies in chronic inguinodynia patients suggested that spinal anaesthesia is superior compared to general anaesthesia in terms of pain relief. This RCT investigates the effect of type of anaesthesia (spinal or general) on pain relief following remedial surgery for inguinodynia. Material and Methods: One-hundred-ninety adult patients suffering from chronic (>3 months) inguinodynia and scheduled to undergo remedial surgery by an open approach, are included. Patients are randomized to spinal or general anaesthesia. Patients are excluded if pain is attributable to abdominal causes or if any contra-indications for either type of anaesthesia are present. Patients are followed-up to one year postoperatively. Primary outcome is the effect of type of anaesthesia on pain relief. Secondary outcomes include patient satisfaction, quality of life, use of analgesics and medical costs. Result: The first patient was included in January 2016. Expected trial deadline is December 2019. Potential effects are attributable to the entire setting of type of anaesthesia. Since any setting is multifactorial, all of these factors may influence the outcome measures. Conclusion: This is the first large RCT comparing two frequently used anaesthetic techniques in remedial surgery for inguinodynia. There is a definite need for evidence-based strategies to optimize results of types of surgery. Besides pain relief, other patient-related outcome measures are assessed to include patient’s perspectives on outcome.

MP-36
Analysis of parameters which affect postoperative complication after laparoscopic total gastrectomy for the patients with gastric cancer
Norio Mitsuomori, Atsuo Shida, Youta Takano, Masahiko Kawamura, Taizou Iwasaki, Katsuhiro Yanaga
The Jikei University School of Medicine, Tokyo, Japan

Background: We retrospectively analyzed parameters which affect postoperative complication after laparoscopic total gastrectomy (LTG) for patients with gastric cancer. Material and Methods: We investigated 137 consecutive patients with gastric cancer who underwent LTG at Jikei University Hospital from 2007 to 2015. 23 of 137 patients (16.8%) suffered Clavien-Dindo classification grade II and more complications (6 cases were leakage of esophago-jejunostomy, 4 cases were anastomotic stricture, 2 cases were ileus, 2 cases were pancreatic fistula, and others). Objective variable was presence of postoperative complication which satisfy Clavien-Dindo classification grade II and more. Explanation variables were as below, elderly patients (≧ 75 years old), gender (male : female = 112:25), preoperative BMI (median 23.4kg/m2), duration of operation (median 330 minutes), intraoperative blood loss (median 55 g), preoperative serum total protein (median 7.1g/dl), preoperative serum albumin (median 4.3g/dl), added cholecystectomy (10 patients were performed), presence of esophageal invasion of tumor and pathologicall stage of disease (stage I vs. II/III/IV). Logistic regression analysis was used to analyze these parameters. Result: Bivariate analysis showed that el-
doi: 10.1159/000461311
Published online: May 25, 2016 © 2016 S. Karger AG, Basel
0014-312X/16/0573-000139.50/0
www.karger.com/esr

Consistency of patient-reported outcomes after cholecystectomy and their implications on current surgical practice
Sarah Wennmacker a, Mark Lamberts b, Jos Gerritsen b, Jan Anne Roukema c, Gert Westert a, Joost Drenth a, Cornelis Van Laarhoven d

a Radboudumc, Nijmegen, the Netherlands; b Medisch Spectrum Twente, Enschede, the Netherlands; c Elisabeth-Tweesteden Ziekenhuis, Tilburg, the Netherlands

Background: Persistent postoperative pain (up to 41%) and significant practice variation necessitate better patient selection for cholecystectomy. Patient-reported outcome measures (PROMs) are known to serve as a tool for better patient selection. We determined associations between the preoperative pain and patient characteristics and PROMs at 24 weeks after cholecystectomy. To evaluate variability of PROMs we determined consistency of these outcomes in time.

Material and Methods: This prospective multicenter cohort study included adult patients diagnosed with uncomplicated symptomatic cholecystolithiasis. Twenty-four weeks after surgery a questionnaire study was carried out, containing Gastrointestinal Quality of Life Index and Patients’ Experience of Surgery Questionnaire. Results were compared to preoperative data and results 12 weeks post-cholecystectomy. Logistic regression analyses were performed to determine associations. Post-hoc analysis on associations between preoperative selection criteria and PROMs was done.

Result: A total of 360 patients (85%) responded. Postoperative absence of pain was reported by 59.2%. Associated characteristics were symptoms ≤1 year prior to surgery (OR 1.85 (95%CI 1.11-3.09)) and high baseline Gastrointestinal Quality of Life Index (OR 1.04 (95%CI 1.02-1.05)). General improvement of abdominal symptoms and positive result of surgery was found in 90%; no preoperative variables were significantly associated. PROMs showed consistency at 12 and 24 weeks postoperatively. No preoperative selection criteria were significantly associated with PROMs.

Conclusion: Current preoperative selection criteria for uncomplicated symptomatic cholecystolithiasis seem insufficient. Persistence of postoperative abdominal pain in 41% and associated preoperative characteristics indicate that additional PROM-based criteria need to be considered to optimize surgical treatment. Especially as PROMs proved to be consistent in time in evaluating surgical outcome.

Management of non-complicated acute appendicitis as day case surgery: Feasibility and a critical analysis of exclusion criteria and treatment failures
Gerard Grelpois, Charles Sabbagh, Cyril Cosse, Brice Robert, Alexandre Ntouba, Thierry Lion, Jean-Marc Regimbeau

University hospital of Amiens, Amiens, France

Background: Day case surgery (DCS) for non-complicated acute appendicitis (NCAA) is under evaluation. The objective of this study was to assess the feasibility of DCS for NCAA with a critical analysis of the reasons for exclusion and treatment failures and a focus on patients discharged to home and readmitted for DCS on the following day.

Material and Methods: From April 2013 to December 2015, NCAA patients meeting the inclusion criteria were included in a prospective, single-center, descriptive, non-randomized, intention-to-treat (ITT) cohort study. The primary endpoint was the success rate for DCS (length of stay <12 hours) in the ITT population (all NCAA) and in the per-protocol (PP) population (no pre/peroperative exclusion criteria). The secondary endpoints were morbidity, DCS quality criteria, predictive factors for successful DCS, patient satisfaction, quality of life and reasons for pre/peroperative exclusion. A subgroup of patients discharged to home the day before surgery was also analyzed.

Result: A total of 240 patients were included. The success rate of DCS was 31.5% in the ITT population and 91.5% in the PP population. The rate of unplanned consultations, hospitalization and reoperation were 13%, 4% and 1% respectively. An analysis of the reasons for DCS exclusion showed that 73% could have been modified. For the 68 patients discharged to home on the day before surgery, the DCS success rate was 91%.

Conclusion: DCS is feasible in NCAA. A critical analysis of the reasons for exclusion from DCS showed that it should be possible to dramatically increase the eligible population.
age, and consumes approximately eight units of alcohol per week. Pre-operative blood test showed an elevated white cell count of 15x10^9/L, CRP 63mg/L and amylase 1500IU/L. His liver function test was normal. Abdominal ultrasound (US) scan performed was unable to visualise the gallbladder (GB) as it was thought to be contracted. MRCP performed at the admitting hospital reported features consistent with acute pancreatitis. The GB cannot be identified and there is mild prominence of the common bile duct but no intraductal filling defects. A follow-up US performed at discharge at our hospital reported a collapsed gallbladder with gallstones. The patient underwent a laparoscopy with a view to a laparoscopic cholecystectomy two weeks later. Intra-operative findings showed an absent gallbladder and cystic duct with no features of previous inflammation in the right upper quadrant. A repeat in-house MRCP performed post-operatively confirmed gallbladder agenesis and pancreas divisum. The patient was referred to the hepatobiliary team for consideration of ERCP and sphincterotomy of the accessory papilla. The patient is well and asymptomatic at present.

Conclusion: Extensive pre-operative imaging in suspected patients with GB agenesis may be required to avoid unnecessary surgery.

MP-40
High Yield of Occult Metastases during Staging Laparoscopy for Locally Advanced Pancreatic Cancer
Mustafa Suker a, Bas Groot Koerkamp a, Ferry Eskens b, Joost Nuyttens a, Casper Van Eijck a
a Erasmus Medical Center, Rotterdam, the Netherlands; b Erasmus Medical Center, Rotterdam, the Netherlands

Background: Locally advanced pancreatic cancer (LAPC) is found in 40% of patients with pancreatic cancer. We looked for occult metastases during staging laparoscopy in patients with LAPC. Material and Methods: Between January 2012 and August 2015 patients with pancreatic cancer underwent a 3 phase pancreas protocol CT. All patients with LAPC underwent a staging laparoscopy to exclude intrahepatic and peritoneal metastases. Univariate logistic regression analysis was conducted to predict metastasis found at laparoscopy. Preoperative risk factors for occult metastatic disease included gender, age, tumor size, and serum tumor markers (CEA and CA 19-9). Result: A total of 51 patients were included. The median overall survival was 17.8 months (95% CI 13.7 - 21.9) with a median follow-up of 12.6 months. During staging laparoscopy metastases were found in 9 patients (17.7%, 95% CI: 9.6% - 30.2%). Five patients had liver and 4 peritoneal metastases. At logistic regression only serum CEA (p=0.005) was a significant predictor for metastasis. Conclusion: The yield of staging laparoscopy for occult intrahepatic or peritoneal metastases was about 1 in 5 patients in this cohort. Finding these metastases has prognostic and therapeutic consequences for patients with LAPC. Therefore staging laparoscopy should be a standard procedure for patients with LAPC.

MP-41
Management of a patient developing necrotizing fasciitis after dental intervention in intensive care unite
Sukru Tekindur a, Behic Girgin a, Tuna Erturk b, Memduh Yetim c, Oguz Kılıckaya a
a Gülhane Military Medical Academy, Department of Anaesthesia and Reanimation, Ankara, Turkey; b Gülhane Military Medical Academy, Haydarpasa Teaching Hospital, Department of Anaesthesia and Reanimation, Istanbul, Turkey; c Van Military Hospital, Van, Turkey

Background: Necrotizing fasciitis (NF) of the neck is an uncommon, rapidly spreading soft tissue infection characterized by necrosis in the subcutaneous tissue. Dental infections are the most common cause of this disease. Material and Methods: We present a patient developed necrotizing fasciitis of the neck after dental intervention. Result: A 70-year-old man patient noticed pain, swelling and rubor in the submandibular region on five days after dental intervention. He had diabetes. He went to hospital and was given intravenous antibiotics for neck infection. He was referred to our hospital due to progression. He underwent extensive debridement of the necrotic tissue followed by administration of imipeneme, ampicilin/sulbactam and clindamycin. He was admitted to our intensive care unit with a diagnosis of necrotizing fasciitis. A bacterial examination of tissue revealed Streptococcus and Pseudomonas. He recovered, extubated and transferred to plastic surgery clinic on the 15th day. But he was transferred our intensive care unit for sepsis after five days. He developed multi-organ failure. He expired after five days. Conclusion: NF in neck is rare, but potentially fatal disease. Immunosuppressive conditions are described as predisposing factors. If early surgery is not performed, NF may lead to systemic toxicity and multiorgan failure. We think that early detection, and adequate surgery is important for mortality of this disease. Airway management is critical with cervicofacial NF associated neck edema and necrosis, which increase the difficulty of intubation. When extended airway management is warranted, as the case with patients who have cervical necrotizing fasciitis, a tracheotomy is preferred over an endotracheal tube.

MP-42
Trichobezoar with gastric perforation: A case report
JaspREET Singh, Gajendra AnurAG, Rajendra Mandia
Sawai Man Singh Medical College, Jaipur, India

Background: A bezoar is a relatively rare surgical finding made up of persistent, ingested material that collects within
the gastrointestinal tract. Bezoars can be of vegetable or fruit fibers (phytobezoars), milk curds (lactobezoars) or any indigestible material (e.g. hair). Gastric trichobezoar is the most common entity encountered. The underlying etiology is usually a psychiatric disorder seen mostly in females. 

**Material and Methods:** A case of a 19-years-old mentally retarded female was admitted in the Emergency Department with acute abdominal pain for past three days with tachycardia, tachypnoea, fever and hypotension. She gave history of generalised abdominal tenderness along with guarding and rigidity. Her blood investigations revealed low hemoglobin, raised total leucocyte count and low albumin. Abdominal X-ray showed gas under diaphragm with a diffused mottled opacity in the middle. She gave history of recurrent abdominal pain with vomiting in the past which got relieved by analgesic and antiemetic.

**Result:** After resuscitation, an emergency laparotomy was done. The stomach was containing a soft pliable mass extending distal to duodeno-jejunal junction and a 1.5cm × 1.5cm perforation was found should be considered in the differential diagnosis of abdominal pain with a non-tender abdominal mass especially psychiatric counseling is important to prevent recurrence. Many of these patients have psychiatric pathology and psychiatric counseling is important to prevent recurrence.

**MP-43**

**Management of a complex pancreaticoduodenal lesion following a suicidal attempt with a crossbow**

Ziad Abbassi, Nadja Benmohamed, Surennaidoo P. Naiken, Philippe Morel, Alexandra Platon, Pierre-Alexandre Poletti, Christian Toso

University Hospital of Geneva, Geneva, Switzerland

**Background:** Traumatic pancreaticoduodenal lesions are rare, often involve a challenging management, and have high rates of morbidity and mortality. 

**Material and Methods:** Case report with the appropriate iconography and review of the literature. 

**Result:** A 43-year old male patient committed a suicidal attempt by shooting an arrow with a crossbow into his upper abdomen. He was stable on admission, and underwent an intravenous contrast-enhanced computer tomography (CT) examination, which showed hepatic, duodenal and pancreatic lesions. The patient underwent an emergency laparotomy, with the extraction of the arrow. A peripheral liver lesion was managed by hemostasis, and the anterior and posterior walls of the first part of the duodenum were closed with interrupted sutures. A per-operato ary endoscopic retrograde choledochopancreatography (ERCP) showed a complete disruption of the pancreatic duct, and no intra-ductal stent could be inserted to bridge both parts of the pancreas. The anterior and posterior surface openings of the pancreas were closed with non-absorbable interrupted sutures, and two drains were left locally. After a transitory pancreatic fistula, both drains could be removed, and the patient demonstrated a normal appearing pancreas on a control CT five months after the trauma. 

**Conclusion:** Surgical exploration and drainage can allow an efficient management of pancreatic penetrating lesions, even in the presence of a complete pancreatic duct disruption.

**MP-44**

**Is V–Y advancement flap feasible technic for recurrent or complex pilonidal sinus disease?**


Guclidean Medical Academy, Ankara, Turkey

**Background:** Pilonidal sinus disease is a common problem in young adults. The ideal treatment is surgical excision of the pilonidal cyst. There are many surgical technics described due to the severity of the disease. The problem in treatment is usually encountered with recurrent and/or complex disease with large skin defects. The V–Y advancement flap (VYAF) has been reported to have a high success rate especially for this kind of patients. In this review, the aim is to evaluate the outcomes of VYAF for pilonidal sinus disease. 

**Material and Methods:** Review of the literature consisted of published orginal articles about VYAF for pilonidal sinus disease between 2000 and 2015 years on PUBMED/Medline data base. On this subject, eleven (11) articles were found. 

**Result:** Apart from three articles, the articles were retrospective studies. The number of patients who had operation with VYAF for pilonidal sinus was 391. 71% of them operated for recurrent and/or complex disease with VYAF. The average follow up time was between 10 months and 22 months. The flap necrosis rate was 1.3%. The average recurrence rate was 4.6%. 65% of the patients weren’t satisfied with result related to the large scar. 

**Conclusion:** VYAF is one of the surgical technics in pilonidal sinus disease treatment. It has an advantage for reducing the hospital stay, the cost and low recurrence rate. Especially for larger defects in recurrent cases, it could be recommended.

**MP-45**

**In vitro detection of cholangiocarcinoma cells using a fluorescent protein-expressing oncolytic herpes virus**

Robert-Jan Coelen, Mark De Keijzer, Michal Heger, Thomas Van Gulik

Academic Medical Center, Amsterdam, the Netherlands

**Background:** Pathological confirmation is desired prior to high-risk surgery for suspected perihilar cholangiocarcinoma. Preoperative tissue diagnosis is limited by poor sensitivity of available techniques, resulting in a high incidence
of benign disease in resected specimens of up to 15%. This study aimed to validate a novel technique of detecting cholangiocarcinoma cells using a tumor-specific green fluorescent protein (GFP)-expressing oncolytic virus. **Material and Methods:** Extrahepatic cholangiocarcinoma cell lines SK-ChA-1, EGI-1, TFK-1 and control cells, including isolated human hepatocytes, were exposed to the oncolytic herpes simplex virus NV1066 for up to 24 hours in adherent culture. GFP expression was measured by fluorescence-assisted cell sorting and mixtures of benign and cholangiocarcinoma cells were analyzed by imaging flow cytometry. The technique was validated for cells in suspension and cultured cells that had been exposed to crude patient bile. **Result:** Optimal incubation time of cholangiocarcinoma cells with NV1066 was determined at 6 to 8 hours, yielding 15% GFP-expressing cells at a multiplicity of infection of 0.1. Cells were able to survive 2-hour crude bile exposure and remained capable of producing GFP following NV1066 infection. Detection of malignant cells was possible at the highest dilution tested (10 cancer cells among 200,000 hepatocytes), though hampered by non-target cell autofluorescence. The technique was not applicable to cells in suspension due to insufficient GFP production. **Conclusion:** A fraction of cholangiocarcinoma cells can be detected in vitro using a GFP-expressing oncolytic virus and flow cytometry. However, clinical application requires this technique to be employed on cells in suspension. The technique is therefore inappropriate for clinical diagnostics.

**MP-46**

Could acrylate and methacrylate based hydrogels have a future role in craniofacial reconstruction?

Adam Hague a, Mark Birch a, Matthew German c

a Centre for Oral Health Research/Institute of Cellular Medicine, Newcastle University, Newcastle, United Kingdom; b Institute of Cellular Medicine, Newcastle University, Newcastle, United Kingdom; c Centre for Oral Health Research, Newcastle University, Newcastle, United Kingdom

**Background:** Craniofacial injuries often involve many different tissue types including cartilage and bone. Complete surgical reconstruction of these injuries using grafts is often difficult and highly complex. Through the use of injectable 3D polymer scaffolds, tissue engineering is offering alternative sources of donor tissue. Hydrogels are excellent candidates for such scaffolds, with human mesenchymal stem cells (hMSCs) providing a cell source. The physical properties of hydrogels can influence hMSC differentiation. Acrylate and methacrylate based hydrogels may have ideal physical properties for culturing hMSCs. Our aim was to identify which acrylate or methacrylate based hydrogel is best at supporting hMSC adhesion and osteogenic differentiation. **Material and Methods:** Hydrogels were created using methyl, ethyl and butyl acrylates and methacrylates at three different molar concentrations (mol%) (25 mol%, 50 mol% and 75 mol%) copolymerised with HEMA. hMSCs were cultured on each hydrogel for 24 hours before assessing cellular adhesion through nuclei counts. Cellular morphology was assessed through rhodamine-phalloidin and antibody staining. The best performing hydrogels were then used to assess hMSC osteogenic differentiation over seven days with and without osteogenic media using alkaline phosphatase (ALP) assays. **Result:** 1) Methyl acrylate supported the greatest number of hMSCs (p<0.05). 2) Cellular spreading was observed on methyl acrylate and all methacrylate hydrogels. 3) Ethyl methacrylate induced the greatest levels of osteogenic differentiation, however this lacked statistical significance. **Conclusion:** Methyl acrylate based hydrogels are excellent at supporting hMSC adhesion and could have potential future tissue engineering applications in craniofacial reconstruction. Further experimental repeats of ALP assays are needed to improve statistical reliability.

**MP-47**

Comparison of the effect of hypothermia and ozone on ischemia reperfusion injury of skeletal muscle in rats

Kenan Koca a, Huseyn Ozkan b, Safak Ekinci c, Bulent Uysal d, Faruk Akyildiz e, Selim Turkkan a, Omer Ersen a, Mehmet Murat Seven b, Serkan Akpancar a

a Gulhane Military Medicine Academy, Department of Orthopedic Surgery, Ankara, Turkey; b Gulhane Military Medicine Academy, Department of Orthopedic Surgery, Ankara, Turkey; c Haydarpaşa Military Medicine Academy, Department of Orthopedic Surgery, Istanbul, Turkey; d Gulhane Military Medicine Academy, Department of Physiology, Ankara, Turkey; e Gulhane Military Medicine Academy, Department of Sports Medicine, Ankara, Turkey

**Background:** The objective of the study was to compare the effect of hypothermia (H) and Ozone (O3) on ischemia-reperfusion (IR) injury of skeletal muscle in rats. **Material and Methods:** Eighteen rats (Wistar Albino) were separated into five groups randomly (sham, IR, IR+H, IR+O3, IR+H+O3) (n=6). The lower right extremity of all rats was subjected to 2-hours of ischemia and 22-hours of reperfusion clamping the common iliac artery and using the rubber-band technique at the level of the lesser trochanter. Two hours of hypothermia were applied during the first two hours of reperfusion in two groups. O3 was applied in two groups. All rats were sacrificed after the IR period. **Result:** The levels of MDA,NOx and IL-1B in muscle were raised in the IR group compared to the sham group. Same parameters were lower in the groups of IR+H, IR+O3 and IR+H+O3 compared to IR group. SOD and GSH-Px activities in muscle were lower in the IR group compared to the sham group; however, same parameters were higher in the groups of IR+H, IR+O3 and IR+H+O3 compared to IR group. Score and intensity of iNOS staining in skeletal muscle in the IR group was increased compare to the group and decreased in the groups of IR+H, IR O3 and IR+H+O3 compared to the
IR group. Levels of CK, AST and K in the three treatment groups decreased compared to the IR group. Conclusion: This study showed that hypothermia decreased the IR injury more than Ozone in the rat’s muscle-skeletal system by reducing the levels of MDA, NOx and IL-1B and enhancing activities of SOD and GSH-Px. Hypothermia and Ozone had no synergistic effect.

MP-48
Efficacy and safety of the novel medical adhesive, MAR VIVO-107, in a chronic liver resection model in rabbits
Kenji Fukushima a, b, Hirokazu Tanaka a, c, Pramod Kadaba Srinivasan a, Kerstin Pawlowsky b, Babette Koegel a, Rene Tolba a

a Institute for Laboratory Animal Science and Experimental Surgery, University Hospital RWTH, Aachen, Germany; b Department of Surgery, Graduate School of Medicine, Kobe University, Kobe, Japan; c Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

Background: Despite modern surgical techniques insufficient hemostasis after liver trauma is still a major cause of morbidity and mortality after injury. Therefore, efficient hemostatic agents are indicated. In this study, we compared a novel synthetic wound sealant (MAR-VIVO-107) based on polyurethane to a widely used fibrin sealant (Tissucol Duo-S).

Material and Methods: New Zealand white female rabbits were randomly assigned to 3 study groups: a.) MAR VIVO-107 (n=16), b.) Tissucol Duo-S (n=10), c.) Saline Control (n=10). Anesthesia was induced by Domitor/Ketamine. The animals were operated, the left liver lobe was isolated, resected, and the appropriate adhesive was applied to the wound. Animals were monitored for 7 days post-op. The animals were anesthetized; re-laparotomy performed to observe the adhesions and other pathological changes. Blood and tissue samples were collected, and the animals were euthanized under anesthesia. Result: (mean±SEM; MAR VIVO-107 vs. Tissucol Duo-S vs. Saline Control): Post surgical survival rate was 100% in all the groups. Blood loss was significantly reduced in both MAR VIVO-107 (8.52±1.93g) and Tissucol Duo-S (9.44±2.77g) compared to Saline Control (22.63±3.96g). Bleeding time in MAR VIVO-107 (36±7.04s) and Tissucol Duo-S (65±16.43s) significantly decreased compared to Saline Control (186±11.85s). All animals recovered without any significant weight loss. During necropsy at day 7, the residual MAR VIVO-107 glue was still present; whereas, residual Tissucol Duo S was not visible. Conclusion: The efficacy and safety of MAR VIVO-107 and comparable performance to the gold standard fibrin has been shown under pre-clinical conditions. MAR VIVO-107 permits hemorrhage control within seconds, even in a wet environment.

MP-49
Method to Measure Pressure on Tissue during Laparoscopic Stapler Usage
Matthew Eschbach, Megan Powell, Kevin Fogarty
Medtronic, North Haven, CT, United States

Background: Laparoscopic staplers are used in abdominal and thoracic surgeries for oncologic, bariatric and general cases to transect and seal tissue. In order to form staples, tissue must be compressed to the required thickness through an input pressure applied by the stapler. The nominal value of this pressure has been theorized but never measured during stapler use due to the difficulty of placing a sensor at the application of pressure where staples are being formed and tissue transected. This study examines the compressive pressure on ex vivo porcine stomach tissue during stapler use through indirect measurements allowing sensors to be placed away from the stapling mechanism.

Material and Methods: Five strain gauges were applied along the anvil of a 60 mm laparoscopic Tri-Staple™ AMT stapler. Deformation of the anvil was measured during clamping and firing of the stapler on ex vivo porcine stomach tissue. An exponential curve was applied to the deformation measurements along the length of the anvil at predetermined time instances during clamping and firing. Using Euler-Bernoulli beam bending theory the pressure distribution was calculated from the deformation values. Three firings were performed on the stomach. Result: Firing on tissue yielded a maximum pressure 3.2 MPa when fired on the body of the porcine stomach. In the thinner fundus the two firings yielded pressures of 1.1 and 1.4 MPa. Conclusion: A method of measuring input pressure during normal stapler usage was implemented. This method can be used in future studies to show correlation between pressure and resulting staple formation, tissue trauma, or tissue characteristics.

MP-50
New ethanol method for soft tissue imaging in micro-CT
Matej Patzel a, b, Jana Mrzlikova b, Jan Dudak c, d, Jan Zemlicka b, Frantisek Krejci c, Petr Zach b, Vladimir Musil a, Viktor Sykora b, Jakub Karch b

a Transplant Surgery Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; b Department of Anatomy, Third Faculty of Medicine, Charles University in Prague, Prague, Czech Republic; c Institute of Experimental and Applied Physics, Czech Technical University in Prague, Prague, Czech Republic; d Czech Technical University in Prague, Faculty of Biomedical Engineering, Klánovo, Czech Republic; e Centre of Scientific Information, Third Faculty of Medicine, Charles University in Prague, Prague, Czech Republic; f Center for Experimental Biomodels, First
Faculty of Medicine, Charles University, Prague, Czech Republic; Institute of Experimental and Applied Physics, Czech Technical University in Prague, Prague, Czech Republic

Background: Micro-CT is well used for examination of bone structures and teeth. On the other hand visualization of the soft tissues is still limited. The goal of our study was to create a new fixation method for soft tissue imaging in micro-CT. Material and Methods: We used organs of 27 mice - heart, lungs, kidneys, liver and brain, which we fixated in different concentrations of ethanol and for different period of time. We used three types of ethanol concentration - 97%, 50% and ascending ethanol concentration (25%, 50%, 75%, 97% each for 12 hours). We scanned fixated organs in micro-CT MARS (Medipix All Resolution System) after 72 hours, 168 hours and 336 hours period of fixation. Result: Ethanol method provided contrast enhancement in all studied organs. Fixation in 97% ethanol provided fast fixation and the contrast among the tissues was visible after 72 hours of fixation. Fixation for period of 168 and 336 hours gave better details, especially in lung tissue, where alveoli were visualized. Fixation in 50% ethanol provided best results in 336 hours fixation, details were visualized better than in 97% ethanol. Best results were obtained in ascending ethanol concentration. Organs were visualized in great details, best visualized organ was heart, where trabeculae and valves were visible. Conclusion: New ethanol method is a great option for soft tissue fixation as well as the method for enhancing contrast among tissues in organs. The best results were obtained with fixation of the organs in ascending ethanol concentration.

Material and Methods: Blood samples were taken for hematology and clinical chemistry and the weight of different organs was measured. In addition, the identity and origin of the Aachen Minipigs at the genomic level was determined by microsatellites. Result: The new the Aachen minipig originates from a mix of the Asian potbelly pig, the German Landrace, the Schwaebisch Haellisches Landrace, and the Minnesota Minipig. The organ weight (liver 282.80±64.04, lung 132.20±25.68, heart 68.90±10.99, kidneys 66.90±15.01, spleen 27.30±6.02 g), hematology (RBC 7.72±0.50×10^6/µl, HGB 146.00±4.73 g/dl, HCT 412.19±2.39 %, MCV 54.82±4.09 fl, MCH 20.09±1.63 pg, WBC 13.34±2.17×10^3/µl etc.), and clinical chemistry (Na 146.00±0.12, K 8.43±1.19, Ca 2.91±1.19, Cl 98.70±2.37 mmol/l, AST 19.19±4.14, ALT 86.10±16.88, GGT 64.50±8.59 U/l etc.) of the Aachen minipigs and the Göttingen minipigs were similar. Conclusion: The Aachen minipig is a suitable model for research due to its similarity to other minipig breeds, especially of the Göttingen minipig.

Background: Pigs are one of the most frequently used animal models in research. In the field of xenotransplantation, minipigs are used because the size of the organs is more similar to the size of human organs, in comparison to large pig breeds. Laboratory husbandry and the handling are easier than for large pigs. These characteristics make minipigs a more favored animal model in research. The aim of breeding the Aachen minipigs was to create a robust race of non-SPP pigs with low body weight, a good health status, and best conditions for medical and pharmaceutical research.

Material and Methods: The use of powered endomechanical surgical staplers has grown tremendously over the past few decades. Advanced technology and informatics within intelligent battery-powered stapling devices provide the ability to gather clinical data and drive design improvements to ultimately improve patient outcomes. In this study, several conditions that affect staple formation were evaluated with the intention of building a more intelligent stapling algorithm. Material and Methods: An electromechanical testing system was used in place of a surgical stapler to deploy (fire) staples on ex vivo porcine stomach to measure forces; resulting staple formation data were collected. A sequential design of experiments was utilized to assess the effects of four different factors: speed, tissue thickness, precompression time, and stapler length with respect to force and staple formation. Result: Firing force was affected by speed of firing, length of reload and tissue thickness; staple formation was affected by speed of firing and tissue thickness. Importantly, a correlation was found between the force on the system and staple formation; specifically, lower forces on the system yielded better staple formation. Conclusion: Testing showed that speed of firing is a key factor in controlling staple formation. This intelligent stapler facilitates continuous monitoring of force feedback during firing, allowing for tailored speed adjustment to optimize staple formation. Ultimately, software improvements would allow for an optimized output based on different reload types and in a variety of tissues with different characteristics (e.g., density, thickness, compliance). Ideally, intelligent stapling systems...
Material and Methods: A prospective, multicentre, randomized controlled trial with optional one-way crossover at 6 months will assess the efficacy of the Axium® SCS system for the treatment of PSIP. Seventy eight patients with intractable PSIP following hernia repair or Pfannenstiel incision, refractory to neurectomy, will be randomized to either an Axium® SCS arm or a control arm receiving conventional medical management. Screening for suitability will be performed following the Dutch Neuromodulation Society Guidelines. Result: Primary outcome is the difference in percentage of subjects with ≥50% pain relief on a Numerical Pain Rating Scale (NPRS) after 6 months. Secondary outcomes will evaluate quality of life, various parameters of pain, subject satisfaction, healthcare resource utilisation and sleep quality. Conclusion: Targeted SCS stimulation of the DRG using the Axium® SCS system alleviates pain and improves quality of life in patients with PSIP who are refractory to other conventional treatment modalities.
Background: Treatment of pancreatic pseudocysts (PPC) involved during the past two decades. Endoscopic treatment (ET) was gradually used in first line management despite the lack of significant superiority between the surgical treatment in a recent randomized trial. The objective of this work was to evaluate the impact of the failure of ET on the results of surgical internal derivations (SID) of PPC. Material and Methods: A French multicentre retrospective study (4 referral centers of pancreatic surgery), conducted between January 2000 and December 2012. Main criteria were: i) major postoperative complications (MPC) (clavien ≥3) and ii) treatment failure defined by a recurrence of the cyst in the first 12 months. All factors that may affect these two parameters were tested in univariate and multivariate analysis when necessary. Result: During the study period 119 patients, with a median age of 52 years (22-83) underwent a SID, including 45 (37.8%) performed after failure of endoscopic treatment. The success of surgery was 92.5%. Mortality and overall morbidity rates were 1.7% and 30.2%, respectively. Eighteen patients (15.1%) presented a MPC requiring for 3.4% (N = 4) a surgical re-intervention. Multivariate analysis revealed that a failure of ET (OR 3.04 CI [1.04 to 9.5]; p = 0.046) and a BMI ≥ 20 (p = 0.010; OR: 4.5 CI 1.50; 15.5) were independently associated with the occurrence of MPC. In univariate analysis, the occurrence of a MPC was the only factor linked to the failure of SID (p = 0.029). Conclusion: Performing a SID after ET failure is associated with an increased risk of MPC.

Background: Objective: To determine the incidence of new onset pancreaticogenic diabetes (NOPD; type 3C) after pancreatectoduodenectomy (PD). Summary Background Data: After pancreatectoduodenectomy (PD), patients may develop new onset pancreaticogenic diabetes (NOPD; type 3C diabetes), with substantial impact on their quality of life. Patients should be adequately informed about this risk but data are lacking. Material and Methods: Methods: A systematic search was performed for studies published up to Nov 2015 in PubMed, MEDLINE (Ovid), Embase (Ovid) and the Cochrane Library, on articles reporting the incidence of NOPD after PD for malignant and benign disease, excluding PD for chronic pancreatitis. Result: Results: Out of 179 screened studies, 16 studies with a total of 829 patients were included. Indications for PD were reported in 768 patients, 82% (pre-)malignant and 13% benign. The overall pooled incidence of NOPD after PD was 10.3% (95% CI 8.19-12.3) (n=829). In 8 studies reporting only on PD for malignant disease (n=676) the incidence of NOPD was 5.9% (95% CI 4.14-7.7). Six studies (n=318) reported the incidence of insulin dependent diabetes (IDDM) after PD with a pooled incidence of 5.0% (95% CI 2.6-7.4). Conclusion: Conclusions: Ten percent of patients develop NOPD following PD for malignant and benign disease. Routine postoperative screening for NOPD seems advisable and future studies should identify risk factors and early treatment strategies for NOPD.
and regression analyses were performed. **Result:** Forty-one patients were available for analysis. D-MRI underestimated the extent of rectoceles with a difference in prevalence (CD 77.8% vs. D-MRI 55.6%), mean protrusion (26.4 vs. 22.7 mm, p=0.039) and 11 false negatives. This resulted in a low sensitivity (0.62) and NPV (0.31). For diagnosing enterocoeles, D-MRI showed an inferior diagnostic capacity with 5 false negatives generating a sensitivity of 0.17. Specificity (1.0) and PPV (1.0) were, however, excellent. Nine false positive intussusceptions were seen on D-MRI; only 2 intussusceptions PPV (1.0) were, however, excellent. Nine false positive intussusceptions were seen on D-MRI; only 2 intussusceptions were missed. **Conclusion:** The diagnostic quality of D-MRI was limited compared to CD for diagnosing rectoceles and enterocoeles. However, for identifying intussusceptions D-MRI seems superior. CD and D-MRI are complementary imaging techniques in the evaluation of patients with symptoms of prolapse of the posterior compartment.

---

**MP-58**

**Medical students’ choice of general surgery as future profession in Saudi Arabia: Predictors for entering residency program**

Zaid Sayedalamin, Mukhtiar Baig

King Abdulaziz University, Jeddah, Saudi Arabia

**Background:** The number of general surgery residency applicants has been decreasing in the last decade. Medical students’ decreasing interest in surgical careers has raised much concern in the recent times. This has been attributed to multiple reasons such as desire for a controllable lifestyle, residency length, financial burden as well as stress associated with surgery. **Material and Methods:** A cross sectional study, involving final and pre final year medical students at King Abdulaziz University, Jeddah, Saudi Arabia. Information concerning their interest in a surgical career, what they thought of surgery after general surgery clerkship was obtained. Multivariate analyses were performed to identify mutable predictors for students entering GS. **Result:** A total of 117 medical students participated in the study with mean (23+2 years). There were 78 (66.6%) males. Only (13.8%) showed that planned to enter GS. The strongest predictor of entering residency program was satisfaction with the quality of attending teaching during surgery clerkships. Subsequent analyses showed that predictors of satisfaction with the quality of attending teaching included intraoperative activities (ie, suturing, cutting, and stapling), having attending-led rounds, and performing a history and physical with an attending. Several clerkship factors, such as frequency of call nights and total hours worked, were not as strongly associated with entering GS residency. **Conclusion:** In this study, some of mutable identified factors may increase the pool of GS residency applicants. Focused and effective mentoring by faculty as well as early exposure of students to positive role models should help to reverse negative impressions held by students.

---

**MP-59**

**Which one is the gold standard for the management of chronic anal fissure: Surgery (LIS) or Botulinum Toxin (Meta analysis)**

Murat Urkan, Umit Alakus, Ulvi Meral, Subutay Peker

a Gülhane Military Medical Academy, Ankara, Turkey; b Izmir Military Hospital, Izmir, Turkey

**Background:** Although surgical treatment of chronic anal fissures is gold standard, optimal management is still controversial because of side effects and complications of the treatment options. In this review, we analysed randomized controlled trials (RCT) about the effectiveness of surgical treatment (LIS) and botulinum toxin (BTX) in the management of chronic anal fissure (CAF) treatment. **Material and Methods:** We searched the literature for RCTs about anal fissure from 2000 to December 31, 2015. We searched terms: “lateral internal sphincterotomy”, “sphincterotomy”, “botulinum toxin injection”, and “anal fissure”, combined with “randomized trials” in the MEDLINE. Studies were included if they met the search term criteria. **Result:** Four hundred and eighty-nine patients from seven randomized controlled trials were qualified for the meta-analysis. There were no significant heterogeneity among trials regarding wound healing (p = 0.50). There were no significant difference in the total complications (p = 0.35). And no significant difference was found among trials regarding incontinence (p = 0.53) although LIS group have a significantly lower recurrence rate than the Botox (p<0.0001). **Conclusion:** This review suggests that; patients who were treated with BTX for the treatment of CAF, has lower complications than patients treated with LIS, whereas, the therapeutic efficacy of LIS is superior to BTX. Also LIS has lower recurrence rate. BTX can be recommended as a first line therapy for chemical sphincterotomy in selected cases.

---

**MP-60**

**Advanced age and presence of comorbidity are strong predictors of morbidity and mortality after surgery for perforated duodenal ulcer**

Hayun Lee, Yan Mei Goh, Ravindra Date

Lancashire Teaching Hospitals NHS Trust, Preston, United Kingdom

**Background:** The incidence of perforated duodenal ulcers (DU) has declined over the last few decades with the use of proton-pump inhibitors. Perforated DU is associated with high morbidity and mortality. The study aims to identify factors responsible for longer length of hospital stay (LOS; as a surrogate marker of morbidity) and mortality of this operation. **Material and Methods:** All patients presenting with perforated DU from June 2010 and June 2015 were identified retrospectively with NHS coding. Data were collected...
and analysed with the student's t-test. **Result:** A total of 52 patients underwent perforated DU repair during this period. One patient was excluded as his discharge was delayed for social reasons. There were 33 male and 18 female patients with a mean age of 59 (range 20–89) years old. 90-day mortality was 9.8% (5 patients). Four of the five patients who died had one or more co-morbidity. Patients with the presence of any co-morbidity had significantly longer LOS (median 27 vs 8 days, \( p = 0.0014 \)) compared to those without. LOS was significantly longer in patients greater than 60 years old (median 27 vs 8 days, \( p = 0.0124 \)). **Conclusion:** This study shows that mortality and LOS of patients presenting with perforated DU is significantly longer in those greater than 60 years and in those with one or more co-morbidity. Our results are comparable to the rest of the literature. The risk stratification process may help consenting of these patients, deciding seniority of surgeon required for the operation, level of post-operative care and predict discharge planning.

**MP-61**

**Is single incisional laparoscopic appendectomy feasible for surgical residents? – Our experiences**

Kazuhiro Hyynamo \(^a\), Hideo Terashima \(^b\), Yoritaka Nakano \(^a\), Yusaku Sumi \(^a\), Kenichiro Furukawa \(^a\), Fumito Imamura \(^a\), Kentaro Mase \(^a\), Takeshi Marumori \(^a\), Masahirou Kamiga \(^a\)

\(^a\) Department of Surgery, Hitachi Ltd. Hitachinaka General Hospital, Hitachinaka, Japan; \(^b\) Hitachinaka Medical Education and Research Center, University of Tsukuba Hospital, Hitachinaka, Japan

**Background:** Education of basic laparoscopic procedures for surgical residents is a hot topic. Single-incision laparoscopic surgery (SILS) has expanded the scope of indications for various existing procedures. Thus, we examined the feasibility of single incisional laparoscopic appendectomy (SILS-appendectomy) for surgical residents. **Material and Methods:** We identified 44 consecutive cases in which three surgical residents operated laparoscopic appendectomy within the last 9 months. Before then, every surgical residents had already had experience of operating conventional laparoscopic appendectomy with three ports at least 9 times. The cases were divided into two groups: single-incision (S) group (n=14) and conventional (C) group (n=30). After examining the patient characteristics, operative duration, intraoperative blood loss, and details of postoperative care were compared between the two groups. **Result:** There were no significant differences in the following patient characteristics between the two groups: age, sex, BMI, preoperative white blood cell count, preoperative CRP level, and degree of inflammation based on pathological evaluation. According to the procedures, i.e., single-incision or conventional, the number of operations per resident (median/IQR) were 5 (3–7) and 11 (8–13), respectively. S group showed significantly shorter operative duration than C group (40 vs 50 min, \( P = 0.002 \)). There were no significant differences in intraoperative blood loss and length of hospital stay. There was neither major postoperative complication nor re-admission in both groups. **Conclusion:** SILS-appendectomy may be safely and effectively conducted by resident surgeons who possess the capability to operate conventional laparoscopic appendectomy.

**MP-62**

**Brain Abscess after Heart Transplantation**

Umit Kervan, Sinan Sabit Kocabeyoglu, Dogan Emre Sert, Mehmet Karahan, Mustafa Pac

Türkiye Yuktesis Hospital, Cardiovascular Surgical and Heart Transplantation Unit, Ankara, Turkey

**Background:** We are presenting a very rare cerebral complication early after heart transplantation. **Material and Methods:** 42-year old man with cardiomyopathy was admitted to our center. After a dental infection, his clinical status deteriorated and did not respond to inotropes. On the next day cardiogenic shock had developed followed by cardiac arrest. On CPR, immediate femoro-subclavian ECMO was established and two days later, without any neurological deficit, orthotopic heart transplantation was performed. He was on triple immunosuppressive regimen; and SMX/TMP, valganciclovir and oral nystatin for prophylaxis. He was administered IV antibiotics for a long duration for infected femoral seroma. Furthermore, sputum culture revealed aspergillus and liposomal amphotericin was used. **Result:** At fifteenth postoperative day, he experienced a seizure, probably due to posterior reversible encephalopathy syndrome documented by CT, without any neurological deficit. Valproic acid was initiated. One month later, he experienced a seizure with loss of orientation, cooperation and speech, again. CT and MRI revealed a large intracranial mass lesion located at left frontal lobe causing a 4mm shift. Donor and recipient was toxoplasma negative. Due to the rapid development of the lesion, intracranial lymphoma was excluded in differential diagnosis. Team decides to administer voriconazole to cover aspergillus and is following the size of abscess with respective computed tomography scans. **Conclusion:** Incidence of brain abscess after solid organ transplantation was reported to be 0.6%. The mortality of this rare condition was found to be 86%. Agents responsible are Aspergillus, Nocardia and Toxoplasmosis. However, generally this clinical situation occurs late after transplantation.
**MP-63**

Differences in glycocalyx levels and microRNA profiling in pancreas obtained from human non-heart-beating donors and brain-dead donors

Fernando Huelin a, Yoko Olmedilla b, Cruz Garcia a, Lisa Rancan a, Paula Corral a, Mario Calvo a, Priya Shahanu a, José Maria Balibrea c

a Department of Biochemistry and Molecular Biology III, School of Medicine, Complutense University, Madrid, Spain; b Service of Endocrinology and Nutrition, Gregorio Marañón University General Hospital, Madrid, Spain; c Service of General Surgery, Vall de Hebron Hospital, Barcelona, Spain

**Background:** Non-heart-beating donors (NHBD) represent a valid alternative for organ transplantation. Grafts from NHBD are exposed to stimuli that trigger immediate inflammatory responses, leading to graft injury that can affect the clinical outcomes. MicroRNAs (miRNAs) can modulate the inflammatory response as well as alterations of glycocalyx integrity. This study aimed to investigate differences in the expression of glycocalyx components and microRNAs between pancreas biopsies obtained from NHBD and from brain-dead donors (BDD). **Material and Methods:** Pancreas samples from human NHBD (n=7) and BDD (n=7) were obtained at the end of cold storage. Protein expression of syndecan 1 (SYND1) and heparan sulphate (HS) was measured by Western Blotting. MicroRNAs (miR126, miR142-5p, miR223, miR192, miR182, miR155, miR142, miR145, miR107, miR21, miR103, miR152, miR16, and let7) were analysed by RT-qPCR and 8-Hydroxyguanine (8-OH-G) by ELISA. **Result:** Pancreas of NHBD showed lower levels of 8-OH-G. High levels of SYND1 were observed in pancreas of NHBD compared to BDD (p<0.01). The expression Let-7d, miR192, miR182, miR145 and miR16 was significantly higher in NHBD whereas miR106, miR103 and miR152 expression was higher in BDD. The expression of HS, miR142-5p, miR223, miR155, miR21, miR146, miR105, miR107 and miR21 was similar in NHBD and BDD. **Conclusion:** Our findings suggest that the pancreas damage generated during the NHBD donation process is acceptable. Although the clinical significance of our findings is unknown - because no correlation between markers expression and graft outcome was performed - they could be influential to consider NHBD as an opportunity to increase the pancreas donor pool.

**MP-64**

Incidence, risk factors and treatment of incisional hernia after kidney transplantation

L.S.S. Ooms, J. Verhelst, J. Jeekel, J.N.M. Ijzermans, J.F. Lange, T. Terkivatan

Erasmus University Medical Center, Rotterdam, the Netherlands

**Background:** The objective was to evaluate the incidence and treatment of incisional hernia following kidney transplantation, and to identify potential risk factors. **Material and Methods:** A retrospective cohort study was performed. All kidney transplant recipients between 2002 and 2012 were included. Two groups were identified: patients with incisional hernia and patients without. Risk factor analysis for development of incisional hernia was performed. **Result:** A total of 1564 kidney recipients were included. Fifty patients (3.2%) developed incisional hernia. On univariate analysis, female gender (54% vs. 35% p = 0.006), BMI>30 kg/m² (38% vs. 17%, p< 0.001), concurrent abdominal wall hernia (30% vs. 16%, p=0.007), multiple explorations of the ipsilateral fossa (38% vs. 19%, p=0.001), left iliac fossa implantation (36% vs 24%, p=0.046), history of smoking (72% vs 57%, p=0.032) and duration of surgery (210 minutes vs. 188 minutes, p=0.020) were associated with the development of incisional hernia. In multivariate analyses female gender (HR 2.6), history of smoking (HR 2.2), obesity (BMI>30) (HR 2.9), multiple explorations of the ipsilateral fossa (HR 2.0), duration of surgery (HR 1.007), and concurrent abdominal wall hernia (HR 2.3) were independent risk factors. Twenty-six of 50 patients (52%) underwent surgical repair, of which nine (35%) required emergency repair. **Conclusion:** The incidence of incisional hernia following kidney transplantation is 3.2%. We found obesity (BMI>30), female gender, concurrent abdominal wall hernias, history of smoking, duration of surgery, and multiple explorations to be independent risk factors for the development of incisional hernia. These risk factors should be taken into account to prevent incisional hernia.

**MP-65**

Laparoscopic vs open inguinal hernia repair: Is Laparoscopic actually quicker?

Anwar Hussain, Muhammad Saad Azhar, Achillias Tsiamis, Muhammad Ayub Khan

Royal Stoke University Hospital, Stoke-on-Trent, United Kingdom

**Background:** Laparoscopic unilateral inguinal hernia repair is known to be equally safe and more efficient when compared to open repair in short term outcomes. We evaluated the procedure times in County Hospital, Stafford. **Material and Methods:** We retrospectively analysed the prospectively maintained data on the Operating Room Management Information System (ORMIS) looking at the operating times for both laparoscopic Transabdominal Preperitoneal (TAPP) and open repair of unilateral and bilateral inguinal hernia repair. We looked at the operations between 2011 and 2015 done by four surgeons who each had more than 5 years of laparoscopic experience, performing more than 50 hernia repairs each year. Data included total 303 procedures, 172 TAPP (57%) of which 133 unilateral (77%), and 131 open repairs (43%) of which 126 unilateral (96%). **Result:** Average time...
for unilateral TAPP was 44.08 minutes ranging from 25 to 106 minutes compared with 54 minutes for open repair ranging from 23 to 103 minutes. Conclusion: Our study shows TAPP repair is quicker to perform after passing the learning curve.

MP-66
A Remarkable Pitfall in Inguinal Open Mesh Herniorrhaphy
W.A.R. Zwaans a, b, M.R.M. Scheltinga a, b, R.M.H. Roun- men a, b
a Máxima Medical Center, Veldhoven, the Netherlands; b SolviMáx Center of Excellence for Abdominal Wall and Groin Pain, Eindhoven, the Netherlands

Background: Inguinal herniorrhaphy is one of the most frequently performed procedures in general surgery. In Europe, the majority of adult inguinal hernias is still repaired by open mesh approach such as a Lichtenstein technique. A host of papers alert surgeons regarding difficulties that may be encountered during a Lichtenstein hernia repair. Known pitfalls include a too tight mesh fixation, periostitis by placement of sutures too close to the pubic bone and ilioinguinal nerve damage. We describe a remarkable pitfall in hernioplasty following the Lichtenstein technique. Result: A patient was referred to SolviMáx, our ‘centre of excellence for chronic abdominal wall and groin pain’ because of persistent inguinodynia after a Lichtenstein repair. A surgical exploration revealed a spermatic cord that was divided by the mesh, supposedly during the primary repair. As a consequence, the patient had developed severe neuropathic pain originating from a damaged genitofemoral nerve. Following a tailored neurectomy, he became pain free. Conclusion: Performing a Lichtenstein hernia repair requires meticulous dissection according to a set of key steps including nerve identification. If not, inguinodynia may occasionally occur. The number of patients with persistent groin pain following a standard open repair is still over ten percent. If, before mesh placement, the spermatic cord is not complete freed from its surroundings, entrapment of the genital branch of the genitofemoral nerve may occur that most likely results in persistent groin pain.

MP-67
Life-threatening Petersen’s hernia following open Beger’s procedure
Yan Li Goh, Alexander Haworth, Jeremy Wilson, Conor James Magee
Wirral University Teaching Hospital NHS Foundation Trust, Wirral, United Kingdom

Background: Despite its original description (following open gastric surgery), Petersen’s hernia (PH) is rarely seen after open surgery. However, PH is a well-known complication of laparoscopic Roux-en-Y gastric bypass surgery due to lack of internal adhesions combined with the significant loss of fat around the small bowel and colonic mesenteries. Three types of Petersen’s hernia have been described. This is the first case to report a complication of Petersen’s hernia following open Beger’s procedure. Result: A 72-year-old male patient underwent open Beger’s procedure (duodenum preserving resection of the pancreatic head) five years ago for chronic pancreatitis. He presented with sudden onset of central abdominal pain and vomiting. Computed tomographic imaging demonstrated a closed loop small bowel obstruction involving the jejunum with a transition point posterior to the Roux loop. Emergency laparotomy performed demonstrated a type C Petersen’s hernia containing 245 cm of infarcted small bowel which was resected and a double-barrelled jeunoileostomy was fashioned. This patient was managed post-operatively in the intensive care unit for 48 hours and total parenteral nutrition was commenced. The patient had a prolonged in-patient stay of eleven weeks with a high-output stoma but did not require return to theatre. The patient was eventually discharged with home parenteral nutrition for two months before reversal of the double-barrelled jeunoileostomy was performed. The patient made an uneventful recovery. Conclusion: Petersen’s hernia can occur after any surgery involving Roux-en-Y reconstruction. It can present as an emergency with small bowel obstruction. Clinicians should have a high index of suspicion when assessing patients with previous operations involving Roux-en-Y reconstruction for this type of hernia.

MP-68
Translation of histological outcome after mesh implantation – are rats a good model for hernia research?
Leontine Van Den Hil a, Ruben Vogels a, Jack Cleutjens a, Marion Gijbels b, Marc Schreinemacher b, Nicole Bouvy a
a Maastricht University Medical Centre, Maastricht, the Netherlands; b Academic Medical Center, Amsterdam, the Netherlands

Background: In search of the ideal mesh for hernia repair, animal research is required. Rats are often used in experimental mesh experiments, but it has never been shown that this is a good model to predict foreign body reaction to meshes in humans. Therefore, the aim of our study was to investigate whether the foreign body reaction on meshes in rats is comparable with the reaction in humans. A second aim was to validate the use of rat models in mesh research. Material and Methods: A group of 10 rats was compared with 8 samples of parastral meshes in human. All meshes were placed intraperitoneally. Rats were sacrificed after 3 months of follow-up. The follow-up in humans was 3-4 months. Samples of the mesh were taken at the time of stoma reversal. Adhesion formation was evaluated macro-
scopically and histological and immunohistochemistry assessments were performed to evaluate tissue reactions. **Result:** After 3 months, adhesion formation did not differ significantly between rats and humans. Both groups showed a mild foreign body reaction, with the presence of macrophages, granulocytes and only few giant cells. Only fibrosis was more evident in humans compared to rats. **Conclusion:** To our knowledge, this is the first study, which showed that a specific animal model is a good model to predict foreign body reaction to meshes in humans. It should be recommended to use rats in future experimental mesh for incisional hernia research.

**MP-69**

**Expression and functional significance of dipeptidyl peptidase IV in papillary thyroid cancer**

Shih-Ping Cheng, Jie-Jen Lee, Chien-Liang Liu, Tsang-Pai Liu, Po-Sheng Yang, Tao-Yeuan Wang

MacKay Memorial Hospital and Mackay Medical College, Taipei, Taiwan

**Background:** It has been shown that dipeptidyl peptidase IV (DPP-4) is overexpressed in thyroid cancer and is helpful in the diagnosis of thyroid cancer. This study aimed to assess the expression and functional significance of DPP-4 in papillary thyroid cancer. **Material and Methods:** The expression of DPP-4 in thyroid tissues and neoplasms was analyzed. Cell growth, migration and invasion were evaluated after chemical and genetic inhibition of DPP-4. **Result:** Papillary thyroid cancer with high DPP-4 expression was associated with extrathyroid invasion, advanced tumor stage, and BRAF mutation. Chemical and genetic inhibition of DPP-4 in thyroid cancer cells dramatically decreased cell growth, migration and invasion. **Conclusion:** DPP-4 is not only a diagnostic but also a therapeutic target of papillary thyroid cancer.

**MP-70**

**Study of factors influencing postoperative hypoparathyroidism after surgery for primary hyperparathyroidism**

Javier Alcalá, Ana Tejera, Isabel Gutiérrez, Rocio Romero, José López, Fructuoso Rodríguez, Juan Ramón Hernández

Hospital Universitario Insular de Gran Canaria, Las Palmas de Gran Canaria, Spain

**Background:** After surgery for primary hyperparathyroidism, a quick decrease in calcium serum levels is observed and it can lead to paresthesias, neurological and cardiological disorders. Postoperative hypoparathyroidism should be prevented not only preserving all healthy parathyroid glands, but also taking into account factors that may predict which patients are at a higher risk of developing it. **Material and Methods:** From 37 patients who underwent surgery for primary hyperparathyroidism with preservation of remaining parathyroid glands, 45% developed temporary postoperative hypoparathyroidism. We established the following variables: age, sex, calcium and parathormone (PTH) preoperative serum levels, preoperative use of calcimimetics, nephrolithiasis, bone densitometry, malignancy, intraoperative PTH decrease, hypercalcemia and associated thyroid surgery. Using Fisher’s exact test or Chi Square test we studied their relation with postoperative hypoparathyroidism and in comparison with patients with normal PTH and calcium levels. **Result:** Patients who suffered from postoperative hypoparathyroidism had higher preoperative calcium and PTH serum levels, this relation was found significant. 71% of this patients had used calcimimetics prior to the surgery and almost 20% were related to malignancy. Other factors such as nephrolithiasis, bone densitometry or hypercalcemia were found non significant. **Conclusion:** Calcium homeostasis is a complex process in which PTH plays a fundamental role. Low levels of PTH are frequently associated with injured parathyroid glands during surgery. A preoperative study must be done analyzing which factors may induce a higher risk of postoperative hypoparathyroidism in order to obtain better results and avoid complications.
tumour to be a choroid plexus papilloma with clear resection margins. Post-operatively the patient’s neurological symptoms and negative attitude towards eating had resolved. **Conclusion:** Intracranial pathology such as brain tumours or epilepsy can present with psychosomatic manifestations. Although paediatric tumours are often detected early in the UK, one must have a low diagnostic threshold when considering a psychological diagnosis in an adult, especially in the developing world where brain tumours can present late.

**MP-72**
**Malignant melanoma recurrence within a free flap reconstruction**
Claire Sethu, Kai Yuen Wong, Mansoor Khan
Salisbury NHS Foundation Trust, Salisbury, United Kingdom

**Background:** Free flaps are commonly used to reconstruct large defects following tumour excision with various advantages. Cutaneous tumour recurrence within free flap tissue reconstruction is rare and the pathophysiology is not well understood. **Material and Methods:** A 69-year-old female with a primary nevoid malignant melanoma of her left shin with a 4.2mm Breslow thickness was treated with wide local excision and split thickness skin graft resurfacing. One year following this surgical clearance, she developed recurrence around but not within the split skin graft. This was treated with further excision and again reconstructed with a split thickness skin graft. Five months later she however developed in-transit metastases requiring further excision around the graft and reconstruction with a free anterolateral thigh flap. Three years post reconstruction she developed metastases within her free flap and palpable left groin lymph nodes for which she had a lymphadenectomy. Her thigh flap. Three years post reconstruction she developed in-transit metastases requiring further excision. Various other mechanisms have been proposed including de novo tumour arising from donor skin; recurrence from the underlying deep margin; and the Koebner phenomenon, which is the development of new skin lesions on areas of injury in otherwise healthy skin. **Conclusion:** This is a rare complication but illustrates that tumours can occur within free flaps.

**MP-73**
**Publication rate of abstracts presented at the Annual Congress of the European Society for Surgical**
Ulvi Mehmet Meral a, Umit Alakus b, Murat Urkan b, Orhan Ureyen c, Nisa Cem Oren a, Aylin Ozturk Meral a, Eylem Cagiltay a, Mehmet Fatih Can b
a Izmir Military Hospital, Izmir, Turkey; b Gulhane Military Medical Academy, Ankara, Turkey; c Bozyaka Education and Training Hospital, Izmir, Turkey

**Background:** This study examines the publication rate (PR) of meeting abstracts presented at the European Society for Surgical Research (ESSR) and determines/comparis the factors affecting the PRs. **Material and Methods:** All presentations at the ESSR congresses held during 2008–2011 were retrospectively assessed. The meeting year, journal impact factor (IF) of publication year, study type, presentation type, time to publication and geographic origin of studies were assessed. **Result:** Among a total of 1368 oral and poster abstracts, 48.7% (N = 391) of oral presentations (OPs) and 29.7% (N = 168) of poster presentations (PPs) were published in medical journals indexed in PubMed. The mean IF was 2.696 (0.17–14.95). The journals that published OPs had a higher IF than journals in which PPs were published (2.944 vs. 2.118) (p < 0.001). The PR was also higher in the OP group than in the PP group. Time to publication was 17.5 (166 to 82) months and was shorter for PPs than for OPs (p = 0.01). According to the study type, experimental studies had a significantly higher PR (53.7%) (p < 0.001); however, there was no significance in PR and IF values of journals in terms of the prospective or retrospective nature of clinical studies (p = 0.62). **Conclusion:** The congress has achieved a PR of 40.9% over 4 years with an average IF of 2.696 and a mean time to publication of 17.5 months, which is equivalent to that of similar scientific meetings. The OPs have a higher PR in journals with greater IF values than the PPs.

**MP-74**
**A retrospective analysis of two laparoscopic appendicectomy techniques for appendicitis in 182 patients**
Mohammad Eddama, Nadine Woosnam, Aijing Wang, Konstantinos Costas Fragkos, Majd Dabboor, Richard Cohen
University College London Hospital, London, United Kingdom

**Background:** Two different laparoscopic appendicectomy techniques (LAT) have been carried out at our centre for the past three years. This study investigates whether our modified LAT is comparable to the standard LAT. **Material and Methods:** A total number of 182 patients who underwent laparoscopic appendicectomy between the periods December 2012 and May 2015 were retrospectively analysed. We
compared 56 patients who underwent modified LAT to 126 patients who underwent the standard LAT. Demographics, preoperative, intraoperative, postoperative and short-term follow up data were compared between the two groups. **Result:** The duration of surgery was significantly (p<0.01) lower in the modified LAT (mean=60 minutes, SD=27) in comparison to the standard LAT (mean=75 minutes, SD=32). Although not reaching statistical significance, postoperative mean hospital stay in days was lower in the modified LAT (mean=2, SD=2) in comparison to the standard LAT (mean=2.7, SD=3). Furthermore, postoperative pelvic collection was lower in the modified LAT (n=4 [7%]) in comparison to the standard LAT (n=12 [10%]), (OR=0.73, 95% CI=0.22-2.37). This was not statistically significant. Similarly, readmission rates were lower in the modified LAT (n=3, [5%]) in comparison to the standard LAT (n=9, [7%]), (OR=0.74, CI=0.19-2.83). **Conclusion:** Modified LAT is comparable to standard LAT for the treatment of appendicitis, with significantly shorter operating time and less complications.

**MP-75**

Minimally invasive versus open total gastrectomy for gastric cancer – A systematic review

J. Straatman, N. Van Der Wielen, M.A. Cuesta, E.S.M. De Lange - De Klerk, E.P. Jansma, D.L. Van Der Peet

VU medical center, Amsterdam, the Netherlands

**Background:** Minimally invasive surgical techniques for gastric cancer are gaining more acceptance worldwide as an alternative to open resection. In order to assess the role of minimally invasive and open techniques in total gastrectomy for cancer a systematic review and meta-analysis was performed. **Material and Methods:** Articles comparing minimally invasive versus open total gastrectomy were reviewed, collected from the Medline, Embase and Cochrane databases. Two different authors independently selected and assessed the articles. Outcomes regarding operative results, postoperative recovery, morbidity, mortality and oncological outcomes were analyzed. Statistical analysis portrayed the weighted mean difference (WMD) with a 95% confidence interval and Odds ratio (OR). **Result:** Out of 1242 papers, 12 studies were selected, including a total of 1360 patients, of which 592 underwent minimally invasive total gastrectomy (MITG). Compared to open total gastrectomy (OTG), MITG showed a longer operation time (WMD: 48.06 min, P < 0.00001), less operative blood loss (WMD: -160.70 mL, P < 0.00001), faster postoperative recovery, measured as shorter time to first flatus (WMD -1.05 days, P < 0.00001), shorter length of hospital stay (WMD: -2.43 days, P<0.0002), less postoperative complications (OR 0.66, P=0.02), similar mortality rates (OR 0.60, P=0.52) and similar rates in lymph node yield (WMD -2.30, P=0.06). **Conclusion:** Minimally invasive total gastrectomy showed faster postoperative recovery and less postoperative complications, whereas completeness of the resection was similar in both groups. Duration of surgery was longer in the minimally invasive group.

Only comparative non-randomized studies were available, further emphasizing the need for a prospective randomized trial comparing MITG and OTG.

**MP-76**

Laparoscopic repair of giant hiatus hernia significantly improves quality of life – A single centre experience

Yan Mei Goh, Yan Li Goh, Vinutha D Shetty, Paul D Turner, Jeremy B Ward, Kishore G Pursnani, Ravindra S Date

Lancashire Teaching Hospitals NHS Trust, Preston, United Kingdom

**Background:** Laparoscopic repair(LR) of Giant Hiatus Hernia(GHH) is associated with high recurrence rates (>30%) mortality and morbidity. Hence surgery is offered only to symptomatic patients. The aim of this study is to evaluate quality of life(QoL) of these patients after LR of GHH. **Material and Methods:** This is a postal questionnaire study of all the patients undergoing GHH repair between 2010 and 2014. Patients were sent 2 questionnaires, 1. The Quality of Life in Reflux and Dyspepsia(QOLRAD) that has 25 questions; each scored out of 7 with 7 representing a high quality of life and 2. Our own short questionnaire asking for overall improvement in health and QoL on a scale of 0 to 10, 10 being excellent results. **Result:** Out of 68 patients, 2 died post-operatively (1 emergency and the other elective repair). Two patients died of unrelated causes. 54/64(84.3%) and 53/64(82.8%) patients responded to the QOLRAD and our questionnaire respectively. There were no statistical differences found when comparing the average total QOLRAD score for size of hernia, type of operation, type of repair and recurrence. The average QOLRAD score was significantly higher (p<0.001) in patients whose heartburn symptoms had improved following surgery compared to those who did not report an improvement. Our questionnaire showed excellent improvement in symptoms and QoL was reported in 40(75.5%) and 38(71.7%) patients respectively. **Conclusion:** QoL following LR of GHH improves in more than 70% of patients and is not related to hernia size, type of repair and post op recurrence. This improvement is significant in patients experiencing heartburn pre-operatively.

**MP-77**

Cost effectiveness of modified laparoscopic appendicectomy using Johan forceps as endoloop knot pusher

Khurram Siddique a, Khalid Khan b, K Sohail a, Adesina Fawole a, Farhan Akrom a

a Mid Yorkshire Hospital NHS Foundation Trust, Dewsbury, United Kingdom; b Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

**Background:** Appendicitis remains one of the most common surgical emergencies. The aim of this study was to evaluate the cost effectiveness of modified laparoscopic appendicectomy using Johan forceps as endoloop knot pusher.
Background: Background: The safety and easy replicability of our technique using Johan as endoloop knot pusher for laparoscopic appendectomy has already been published. The current study was conducted to assess the cost effectiveness of a modified technique using Johan as knot pusher and removal of appendix without a BERT bag. Material and Methods: Patients and Methods: The prospective data of all patients who underwent Laparoscopic appendectomy by the above mentioned technique between 2012 till 2015 was collected. A single vicryl tie was used to make three standard endoloops and a BERT bag was used only when necessary. Demographics, operative findings, post-op stay, complications and readmissions were recorded & analysed. Result: Results: Total number of patients was 166 and included 110(66%) males; with an age of *24 (14-77). Grossly inflamed appendix was noted in 76% of cases, while 20% had normal appendix. There were no peri-operative complications. The post-op stay was *1(1-7) days. There were no cases of stump leak or caecal trauma. Bert bags were used in 18 cases only. The only reported complication was wound infection 9(5.4%) managed conservatively. There were 11 re-admissions all unrelated to the surgical technique. The cost of one vicryl tie was £0.5 Vs £49.80 (for 3 standard endoloops and £ 27 for a BERT bag). The cost analysis showed johan assisted appendectomy to be significantly cheaper than the standard marketed endoloops. Conclusion: A carefully tailored approach for using BERT bag and Johan forces as endoloop knot pusher is a feasible, safe and a cost effective technique with promising results.

MP-78
Teaching laparoscopy: The trainees’ perspectives
Ziad Abbassi, Konstantinos Vakalopoulos, Nicolas C. Buchs, Minoa Jung, Frederic Ris, Philippe Moret
University Hospital of Geneva, Geneva, Switzerland

Background: Minimally invasive surgery present many benefits but has an extensive learning curve. Most training models are based on the Fundamental of Laparoscopic Surgery (FLS) recommendations. There are mechanical, virtual laparoscopic box trainers and animal models. We developed a curriculum for the surgical trainees, associating theoretical and practical courses. This study reports our experience in training basic laparoscopic skills and to assess the trainee’s perspectives. Material and Methods: 15 courses of laparoscopy were evaluated in our Multidisciplinary Centre for Surgical Training between November 2012 and June 2015. One hundred and eighteen participants were divided into medical students, junior trainee, and senior trainee. The course lasted a full day and was divided into a theoretical and a practical part. We analysed prospectively all evaluation and satisfaction questionnaire of each participant that consisted of eight items evaluating the different parts of the course in four level of satisfaction (unsatisfied to excellent) or unrated. Result: 23 medical students, 72 junior trainees and 23 senior trainees attempted the course. Participants preferred the practical part than the theoretical part (p=0.01). Our analyses showed us that assessments are not influenced by experience or later specialty. 62% of participants found the theoretical and practical courses useful for their future practice. Conclusion: Learning surgical skills seems to be a necessity and is appreciated by our trainees and students. The development of technical skills assessment tool for basic surgical procedures will help to assess the progress of candidates and to tailor their training during their learning curve.

MP-79
Features of Benign Gastric Polyps Found in Endoscopic Screening
Sabahattin Destek a, Vaht Onur Gul b, Serkan Ahioglu b
a Via Hospital, Istanbul, Turkey; b Edremit Military Hospital, Balikesir, Turkey

Background: Benign gastric polyps (BGP), are found in 2-6% of patients undergoing endoscopy, it is thought that they occur as a regenerative response of mucosal damage. Hyperplastic polyps are the most common type and they carry malignancy potential. In this study we presented the patients with SMP and the characteristics of polyps. Material and Methods: Patients were evaluated who had gastric polyps records in Surgical Endoscopy Unit between 2010 and 2015 retrospectively. Result: 1075 patients applied gastroscopy. 34 (3.2%) of them were identified BGP. Half of the patients were male and half were female. Mean age was 54 (age range 25-82). 29 patients (85%) had single polyps, 5 patients (15%) had multiple polyps. Lesions are most common in the antrum (22 patients, 65%), at least in the cardia (2 patients, 6%) was observed. One of the polip was sessile and the other one was stalked polyp. The largest polyp was 10 mm and the smallest polyp was 1 mm. In 22 patients (65%) was observed Foveon regenerative hyperplasia, 10 patients (29%) hyperplastic polyps, 3 patients (9%) was observed gland polyyps hamartomatous hazelnuts. 18 patients (53%) had Helicobacter pylori (HP) infection and 15 (44%) patients had alkaline reflux gastritis (ARG). Polypectomy and medication for HP and ARG was applied for patients and they were followed. Conclusion: Publication reports that HP infection and ARG are associated with the development of polyps. BGP have malignancy risk so monitoreization and treatment are very important. Patients over the age of fifty especially with dispetic complains should be performed in endoscopic examination.
**MP-80**

An unusual presentation of recurrent oesophageal perforation

Dr Sana Malik, Dr Aswin Babu, Dr Mridul Dey, Mr Nagamapudur Balaji

University Hospital of North Midlands, Stoke-on-trent, United Kingdom

**Background:** Boerhaave’s syndrome or spontaneous rupture of the oesophagus is a rare condition with an incidence of 7.4 per 10 million per year [1]. Approximately 90% of patients with Boerhaave’s syndrome present with left-sided pleural effusion [5-10% with bilateral effusions and a smaller number with with an effusion of the right side only [1]. **Material and Methods:** We report a unique presentation of Boerhaave’s syndrome presenting as a 2nd episode of oesophageal perforation with a predominant right-sided hydropneumothorax and a smaller left sided effusion. Our report explores the anatomical reasons as to why this case presents atypically and highlights the importance of recognition of such a lethal disease and the importance of an early diagnosis. **Result:** The unfortunate 46-year-old patient had experienced two Oesophageal perforations, occurring 8 years apart. An endoscopic iatrogenic perforation in 2008 necessitated a thoracotomy and repair. He later developed carcinoma of the right lung that needed a thoracotomy and lobectomy on the right and adjuvant radiotherapy. He suffered from worsening residual dysphagia after the radiotherapy. His current admission in 2016 was with a large Right sided hydro pneumothorax following episodes of vomiting, severe chest pain, dyspnea with saturations of 72% on air upon admission. **Conclusion:** CT confirmed an oesophageal perforation with a predominantly right-sided hydropneumothorax and a smaller left sided pleural effusion. Endoscopy revealed a tight non-negotiable stricture in the lower oesophagus above the perforation. The pathophysiology of the presentation in this patient remains unique and subsequent treatment challenging.

---

**MP-81**

Partial anomalous pulmonary venous connection of right apical segment

Kuthan Kavakli a, Hakan Isik a, Okan Karatas a, Ersin Sapmaz b

a Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey; b Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Anomalous pulmonary venous return (APVR) is defined as total, lobar or segmental venous connection of blood flow directly into the right side of the heart or into the systemic veins that creates left-to-right shunt (1). Arrangement of pulmonary veins has importance for a safe surgery. **Material and Methods:** Our robotic surgery video archive was searched. **Result:** A 53-year-old female was referred to our department for the surgical treatment for non-small cell carcinoma of right upper lobe. Chest CT revealed a mass in the posterior segment of the right upper lobe with suspicious invasion to the superior segment of the lower lobe (Figure 1a) There was an anomalous pulmonary venous drainage into the superior vena cava between the ayzygos vein and right superior pulmonary vein (Figure 1b). Thoracoscopic echocardiography findings were normal. Robotic right upper lobectomy was recommended and performed. Anterior dissection to encircle the right upper lobe vein confirmed an anomalous venous connection of the apical segment to the superior vena cava. This vein was between the superior pulmonary vein and ayzygos vein (Figure 2). The pulmonary veins in the fissure were also anomalous and the most superficial vascular structure. There were abnormal connections to this venous structure from upper, middle and lower lobes (Figure 3). Robotic right upper lobectomy was not completed due to injury of superior pulmonary vein and converted to open thoracotomy. The postoperative course of the patient was uneventful and she was discharged on 5th postoperative day. **Conclusion:** This vascular anomaly should be consider in mind to make a safe surgery.

---

**MP-82**

Bariatric Surgery Outcomes for obese patients: Does weight matter?

Nehemiah Samuel a, Peter Vasas a, Abdulzahra Hussain a, Hammad Zaidi a, John Finnen a, Katie Kirk a, Srinivasan Balachandra a

a Doncaster Royal Infirmary, Doncaster, United Kingdom

**Background:** Studies have attempted to identify prognostic indicators for successful outcomes following Bariatric Surgery. The aim of this study was to determine whether degree of obesity affects outcomes in morbidly-obese (MO) BMI 40–49.9; super-obese (SO) BMI 50-59.9; and super-super-obese (SSO) BMI>60kg/m² patients undergoing restrictive or bypass procedures. **Material and Methods:** Retrospective analysis of prospectively maintained database was undertaken to include all consecutive laparoscopic gastric bands (LAGB); sleeve gastrectomies (LSG); roux-en-Y gastric bypass (LRYGB). At presentation, the median BMI for MO category were 47.2 (LAGB) 46.4 (LSG) 46.6 (LRYGB) kg/m² p=0.625; for SO 53.2 (LAGB) 52.9 (LSG) 52.4 (LRYGB) kg/m² p=0.481; and SSO 66.9 (LAGB) 66.7 (LSG) 61.5 (LRYGB) kg/m² p=0.169. Median %EWL at the end of 2-years was significantly higher in the MO and SO categories undergoing LRYGB - 68.5% & 69.5% respectively.
P<0.001, which was also reflective in the lower BMI achieved with bypass in the same categories p<0.001. Complete diabetes remission was significantly higher in the MO and SO categories undergoing LRYGB p<0.05. Sleep apnoea, asthma and exercise tolerance significantly improved in the SO category undergoing LRYGB p<0.05. There was no difference between the groups in remission of Hypertension; Dyslipidaemia; GORD and Depression in all 3 BMI categories. Conclusion: The mid-term results for weight loss and obesity related co-morbidities resolution is best achieved in super-obese patients undergoing LRYGB without any significant increase in complication rates.

Background: Peri-operative blood loss contributes to the morbidity of patients undergoing immediate and delayed autologous free flap breast reconstruction post-mastectomy. The study aims to develop predictors for blood loss and transfusion requirements in microvascular breast reconstruction. Material and Methods: A retrospective cohort study of autologous free flap breast reconstruction post-mastectomy by a single plastic surgeon performed from January 2010 – December 2015 was conducted. Data from patient medical records were input into a database. Data analysis was performed using STATA software. Estimated blood loss was the total weight of the swabs used during surgery, the estimated blood volume (EBV) was calculated using a validated formula [lnBV= 70/√ (BMI/22)]. Ln BV represents the indexed blood volume in ml/kg. Result: Of the 163 microvascular procedures, 133 were unilateral and 30 were bilateral. The median estimated blood loss (EBL) was 640ml (IQR=407-1000) and the mean haemoglobin drop was 29.3g/L (±11.1). 44% of patients required a transfusion. Multivariable linear regression analysis showed that immediate timing of reconstruction, concomitant lymph node dissection, increased duration of surgery and higher mastectomy weight were significantly associated with higher EBL. Independent predictors of the likelihood of blood transfusion were bilateral reconstruction, lower calculated total blood volume and higher mastectomy weight. Conclusion: A significant association between higher EBL and transfusion requirements was found with several variables. This has provided imperative information to our unit in predicting peri-operative blood loss and preoperative patient counselling. It has also enabled us to design measures to restrict blood loss in these “high-risk” patients and hence reduce patient morbidity and length of stay.

MP-83
Intraoperative blood loss and perioperative transfusion requirements in autologous free flap breast reconstruction: A study of predictive factors

Elena Conci a, Manaf Khatib b, Mohamed Fahed Barakat c, Parto Forouhi a, Charles M Malata b, d, e

a Cambridge University Medical School, Cambridge, United Kingdom; b Department of Plastic Surgery, Cambridge University Hospitals NHS Trusts, Cambridge, United Kingdom; c Barnet General Hospital, London, United Kingdom; d Cambridge Breast Unit, Cambridge University Hospitals NHS Trusts, Cambridge, United Kingdom; e Postgraduate Medical Institute, Faculty of Medical Sciences, Anglia Ruskin University, Cambridge, United Kingdom

Background: Pretibial lacerations are a common yet neglected problem in surgical departments. With a propensity to affect the elderly and infirm population often suffering from comorbidities and polypharmacy, unclear management often results in patients presenting later for lengthy inpatient surgical management. We aimed to evaluate the current literature with our experiences in a tertiary trauma centre and propose a treatment algorithm implemented at our institution. Material and Methods: Data were collected retrospectively using software and hardcopy notes for pretibial lacerations admitted to Addenbrooke’s hospital; January 2012 to December 2012. Result: Thirty-six patients were admitted during this period with a mean age of 79 years-old and 3:2 female:male preponderance. Injuries were caused by mechanical fall in 57%, traumatic blunt impact 33% and road traffic accidents 7%. Evaluation of co-morbidities revealed 43% ASA level III, 40% level II, 9% level I, 9% level IV. Severity of injury assessed by Dunkin classification revealed 33% grade 3 lesions, 30% grade 1, 24% grade 4 and 12% grade 2. Medication review revealed 31% used corticosteroids, 56% aspirin, 8% clopidogrel and 22% warfarin. Mean inpatient stay was 18 days (±26 days,1SD); 11 days (±12 days, 1SD) for surgically managed patients, and 62 days (±79 days, 1SD) for conservatively managed patients. Surgical intervention involving debridement and reconstruction with split-thickness skin grafting occurred in 61% of surgical cases with graft take at 94%. One-year mortality was 22% due to concomitant illnesses. Conclusion: We propose a treatment algorithm to effectively manage pretibial lacerations and reduce the morbidity, mortality and financial costs that can arise from unclear management.
MP-85
The Reliability of Early Postoperative Pain as a Prognostic Indicator in Arthroscopic Tibiotalar Arthrodesis
Andrew Moriarity a, Kunal Mohan b, Prasad Ellanti a, Thomas Bayer c, John Mckenna a

a Department of Trauma & Orthopaedics, Saint James’s Hospital, Dublin 8, Ireland; b Department of Trauma & Orthopaedics, Saint James’s Hospital, Dublin 8, Ireland; c Midland Regional Hospital, Arden Road, Tullamore, Co. Offaly, Ireland

Background: Arthroscopic ankle arthrodesis has shown high rates of union and less postoperative morbidity in comparison to those who undergo open arthrodesis. The most recent literature suggests a nonunion rate of 10%. Material and Methods: The objective of this study was to determine whether the presence or absence of postoperative pain could be used as an early prognostic indicator of nonunion in arthroscopic ankle arthrodesis. A study of 75 patients who underwent arthroscopic ankle arthrodesis between 2012 and 2015 was undertaken. Patients were examined and radiographed at 2, 6, 12 and 24 weeks postoperatively. The time to arthrodesis was determined by radiographic and clinical examinations. Radiographic evidence of fusion was determined by trabeculation across the joint space. Clinical evidence of fusion was determined by the absence of pain and motion with attempted movement of the joint, and no warmth or swelling on palpation of the joint. Analgesic requirements were monitored postoperatively. Functional ability was evaluated both pre- and postoperatively by the self-reported foot and ankle score (SEFAS). Result: Fusion occurred in 71 of 75 ankles with an overall rate of 94.7%. At 1 week postoperatively, 68 of the 71 (95.8%) fused ankles had no pain and required no analgesia. The 4 ankles that did not fuse all continued to have pain similar to their preoperative state at 12 weeks postoperatively. The mean time to union was 9.8 weeks and the mean age was 60.2 (28-85). Conclusion: Pain in the early postoperative period can be considered as a simple method of predicting fusion in arthroscopic ankle arthrodesis.

MP-86
How to improve the clinical coding accuracy of trauma care episodes
Kai Yuen Wong, Rosalind Mole, Mansoor Khan
Salisbury NHS Foundation Trust, Salisbury, United Kingdom

Background: Healthcare Resource Group (HRG) codes define the tariff associated with each episode of care. They are generated from diagnostic and intervention codes. For the latter, all procedures performed in the National Health Service are coded via the Office of Population Censuses and Surveys (OPCS) classification system. The current clinical coding system is complex. We assess the HRG coding accuracy of trauma care episodes within our department and the consequent financial implications. Material and Methods: Coding of all plastic surgery trauma procedures over a 1-month period was retrospectively analysed. To assess accuracy, comparison was made between operation notes and OPCS codes assigned by professional coders, and subsequent recoding by surgical trainees in liaison with professional coders. New OPCS codes assigned to each operation and the resultant HRG codes were used to determine if financial remuneration changed. Result: Total of 145 cases reviewed. Primary OPCS codes were incorrect in 45 cases (31%) resulting in 40 HRG code changes (28%) and £29000 payment loss. New guidelines were agreed and regular clinician-coder multidisciplinary team (MDT) meetings were set up. Differences between operations were often subtle and complex operations commonly included multiple components, which were difficult to appreciate from medical documentation. Consequently, regular clinician-coder multidisciplinary team (MDT) meetings were set up. Conclusion: Accurate coding is crucial for audit, research and fair financial remuneration. MDTs are an effective mechanism to improve communication between healthcare professionals and coders to improve accuracy.

MP-87
An Audit quantifying and comparing the haemoglobin drop associated with the various Neck of Femur Fracture fixation methods
Clara Vella, Nick Howard, Marcus Cope
Southport & Ormskirk District General Hospital, Southport, United Kingdom

Background: Hip fractures are common injuries often resulting in blood loss and requiring transfusion. Various studies have shown that fixation method is one of the most significant modifiable risk factors affecting transfusion rates. Peri-operative anaemia in Neck of Femur (NOF) fractures has been consistently connected to adverse events, leading to medical complications as well as increased duration of stay, rate of readmission and death. The aim of this study is to quantify and compare the haemoglobin drop associated with NOF fixations with a view to explore the value of pre-operative transfusion. Material and Methods: A retrospective audit of 165 consecutive NOF fractures, April-November 2015. All NOF fractures on the trauma list undergoing hemiarthroplasty, dynamic hip screw (DHS), Intramedullary nail, Total Hip Replacement (THR) were included. Multiple injury cases were excluded. Patient demographics, fracture classification and pre and post-operative haemoglobin were recorded. Result: Of 165 cases, 80 were Hip Hemiarthroplasty’s, 57 DHS, 21 Intramedullary Nails and 7 THR. Results showed the largest haemoglobin drop was seen in the Intramedullary Nail group (mean 35g/L) and smallest haemoglobin drop in Hip Hemiarthroplasty’s (mean 16g/L). Conclusion: The reliability of early postoperative pain as a prognostic indicator in arthroscopic tibiotalar arthrodesis has shown high rates of union and less postoperative morbidity in comparison to those who undergo open arthrodesis. The most recent literature suggests a nonunion rate of 10%.
Injured patients and to review the role of plastic and maxillofacial injuries to the face and neck were conducted over a 6-month period. Demographic details, wounding gear of ballistic (BM) injuries to the face and neck were evaluated. Of the 32 patients injured by gunshot and fourteen were injured by BMs. A total of 11 (35%) patients were treated surgically for airway hemorrhage is controlled on the time.

Conclusion: The results show a correlation between Intramedullary Nailing and increased haemoglobin drop post-operatively. Further work needs to be done to confirm that pre-operative transfusion prior to fixation with Intramedullary Nailing and DHS correlates with improved short and long term outcomes.

MP-89
Sharing lessons learned as a response to terrorist bomb attacks in Turkey
Aytekin Unlu, Sahin Kaymak, Oguz Hancerliogullari, Murat Urkan, Nazif Zeybek
Gulhane Military Medical Academy, Ankara, Turkey

Background: Urban terrorist attacks are increasing worldwide. After suicide bombings in Ankara and Urfa in 2015, Department of War Surgery in Gulhane Military Medical Academy (GATA) started the “Current Approaches to Firearms Injuries Course” for training civilian doctors potentially unfamiliar with these injury mechanisms. We, hereby, present the attending doctors’ pretest and posttest results.

Material and Methods: The course comprised 30 lectures from 16 departments. Medical Deontology was excluded; the remaining 29 lecturers prepared one multiple-choice question for the study. These questions were randomized to select 15 questions for the pretest. The order of the 15 questions was changed in the posttest. Result: All 46 attendees were male and their mean age was 36.8 ± 6.3 years. General surgeons and thoracic surgeons comprised 23(50%) and 7(15.2%) of 46 attendees. When compared to pretest scores, doctors’ posttest performances were statistically significantly higher. Most profoundly, 95.2% of attending doctors’ answers on CBRN was improved by the lecture. Overall, the accuracy of posttest answers on 11 of 15(73.3%) trauma lectures was improved and the difference was statistically significant.

Conclusion: The severity of combat and terrorist attack injuries is higher than the usual civilian mechanisms of injury. The only fact is when the next terrorist attack will occur instead of ‘if it will occur’ and all relevant clinical specialties and interested health care providers should participate in such trauma training programs.

MP-90
Extra-corporeal membrane oxygenation in the management of thoracic trauma
Bilal Zahoor a, b, Matthew Noorbakhsh c
a University of Queensland, School of Medicine, Brisbane, Australia; b Royal Brisbane & Women's Hospital, Brisbane, Australia; c Alleghany General Hospital, Pittsburgh, United States

Background: One quarter of trauma patients expire because of a chest injury. Of those who survive, one fifth require a thoracotomy. Complete pneumonectomy in the presence of hemorrhagic shock is associated with 100% mortality. Aberrations in cardio-pulmonary homeostasis are generally to blame; in specific: non-refractory respiratory failure and right heart failure.

Material and Methods: We completed a retrospective case review. Patient consent and ethics approvals were obtained prior to the conduct of the review. Result: A young male sustained penetrating injury to the right pulmonary hilum. Despite maximal resuscitation (25 pRBC units), his conditioned worsened and an expedient total right side pneumonectomy was completed to stop the hemorrhage. Post-operatively, despite, appropriate ventilatory, vasopressor and ionotropic support in the ICU, he developed severe right heart strain, superior vena cava syndrome, and cardiac dextro-rotation. The patient’s lactate also worsened (>10mmol/dl). ECMO (v-v) was incorporated into the patient’s management to distribute the cardio-vascular volume. Thereafter, the patient’s condition improved remarkably; his lactate clearing 48 hours later. On re-exploratory thoracotomy, no cardiac dextro-rotation or herniation...
was evident. On follow-up, the patient recovered uneventfully. **Conclusion:** ECMO offers significant hope in the management and reduction of mortality commonly associated in thoracic trauma. It offers an alternative to cardiac bypass when transient increases in circuit volume and/or decreases in preload are needed, especially to offer relief of hypovolemic induced acute right heart strain. ECMO is associated with significantly fewer complications than cardiac bypass and better outcomes in the management of thoracic injury as was demonstrated in our patient.

---

**MP-91**  
Long-acting transdermal fentanyl solution during perioperative analgesia in multi-species surgical research

**Background:** Opioids are commonly considered as an important part of multi-modal postoperative analgesia on animal models for surgical research, but there are intrinsic limits including rapid clearance resulting in repeated subcutaneous injections. The objective of the study was to evaluate the efficiency of a long-acting transdermal fentanyl solution (LATFS) with quantification of the blood fentanyl concentration (BFC) at day 4 of follow-up on multi-species surgical models (primary endpoint). **Material and Methods:** 1.3 mg/kg (half-dose) of a LATFS was topically applied, prior to surgery, in a single administration, onto the interscapular skin of four Landrace pigs. A free-opioid premedication and anesthesia was achieved. Blood samples were collected and evaluation of postoperative pain was achieved with a behavioral scale. In the same way, a 50μL drop (half-dose) of LATFS was applied in ten 300-grams Wistar rats prior to microsurgery experimentations. Quantification of fentanyl and its metabolite nor-fentanyl was performed with ultra high performance liquid chromatography coupled to mass spectrometry in plasma and total blood. **Result:** At the end of follow-up, BFC were always above the therapeutic threshold (TT) (> 1 ng/mL) in both species and reached the TT at first hour. Mean BFC was 4±2.7 ng/mL in rat model. Maximal concentration was obtained at Hour 6 in pigs (27±9 ng/mL). **Conclusion:** The use of a single, simple and noninvasive administration of LATFS can sustain BFC above TT during at least 4 days and should be mostly used in surgical research.

---

**MP-92**  
Pitfalls and tribulations of needle thoracostomy for emergency thoracic decompression

**Biizl Zahoor a, b, Daryl Woll b, Matthew Noorbakhsh c, Kevin Tetsworth b, Robert Cerfolio d**

a University of Queensland, School of Medicine, Brisbane, Australia; b Royal Brisbane & Women’s Hospital, Brisbane, Australia; c Allegheny General Hospital, Pittsburgh, United States; d University of Alabama-Birmingham, Birmingham, United States

**Background:** Emergency needle thoracostomy is appropriately indicated to relieve tension pneumothorax. In the performance of this procedure, there are significant risks and complications. **Material and Methods:** We completed a retrospective review of published case reports/series and related clinical studies documenting the use of needle thoracostomy for the purpose of thoracic decompression. We selected 45 articles of interest for inclusion into our subsequent review. **Result:** Needle thoracostomy, for the purpose of thoracic decompression, is plagued by a myriad of complications. Foremost, the common instrument (a Veress needle) used in the performance of this procedure often fails to penetrate the pleural space when inserted in the 4th ICS along the mid-clavicular line. More often, there is a lack of adequate training involved in the performance of this procedure resulting in improper placement which visibly correlates with severe and devastating injury to the local anatomy i.e. great vessels, the heart and hilum. Placement of the catheter along the 5th ICS along the mid-axillary line offers better and safer access to the pleural space; however, it is incompatible with the transport of patients. Finally, recognition of the appropriate and indicative clinical signs that warrant the procedure are also variable amongst well meaning providers. **Conclusion:** Needle thoracostomy, for pleural decompression, is simple in theory yet complex in practice. Inadequate training, instrument failure, and poor clinical knowledge can result in unsafe practice of this procedure. A new instrument is warranted to render the procedure more safe, especially in light of the associated complication profile.
MP-93
Risk of Avascular Necrosis with Biceps Tenodesis during Proximal Humerus Open Reduction and Internal Fixation
Justin Hintze a,b, Dave Morrissey a, Diarmuid Molony a
a Department of Orthopaedics, Tallaght Hospital, Dublin, Ireland; b Trinity College, Dublin, Ireland

Background: Proximal humeral fractures are common, representing 5% of all fractures. Avascular necrosis (AVN) may occur in 0-77% and is a common cause of fixation failure. Risk factors for AVN include fracture position, calcar length and integrity of the medial hinge. We routinely perform an intra-articular biceps tenotomy with tenodesis to facilitate fragment identification and reduce postoperative pain. Concern exists that tenotomising the biceps damages the adjacent arcuate artery, potentially increasing the rate of AVN. Material and Methods: We retrospectively reviewed 88 proximal humeral fractures that were surgically treated using the above fashion for radiological signs of humeral head AVN. We excluded revision or tumour cases and those utilising a deltoid split. 61 fractures satisfied the inclusion criteria. We radiographically assessed each fracture according to Neer’s classification, analysed the calcar length and integrity of the medial hinge. Result: 65% were four-part, 32% were three-part, and 1.6% were two-part fractures. 61% had a calcar length less than 8mm and 42% had loss of the medial hinge. The mean radiographic follow-up was 5 months. There was no radiographic evidence of AVN in any of the 61 cases, although two cases did require revision surgery. 5 cases had tuberosity avascular necrosis, but no evidence of humeral head necrosis. Conclusion: AVN remains a troublesome complication following proximal humeral fractures. Several risk factors have been identified, including fracture pattern and surgical approach. In our experience, intra-articular biceps tenotomy with the deltopectoral approach was not associated with a significant risk of avascular necrosis of the humeral head, even in complicated four-part fractures.

In this case, we aim to share use of airtraq laryngoscope and glidescope laryngoscope when faced with difficult intubation. Material and Methods: Surgery was planned for the 22-year-old male patient who was identified with an air cyst covering the right upper lung. After induction of anaesthesia the patient was intubated with a single-lumen tube because bronchoscopy would be performed first. The laryngoscopy imaging of the patient after macintosh laryngoscopy was assessed as Cormack-Lehane(C-L) Class 4 which was followed by airtraq laryngoscopy, assessed as C-L-1, was intubated successfully in the first attempt. Bronchoscopy was performed without any problems. Since then extubated patient would be intubated using a double-lumen tube, glidescope was used where laryngeal imaging was assessed as C-L class 3 while external laryngeal as C-L class 2 under pressure and the patient was intubated successfully in the first attempt. Cystectomy performed and the patient was woken up at the end of the surgery without any problems. Result: Ensuring open airway which is the main task of the anaesthesiologist is a highly critical and important task. For patients estimated to be a difficult intubation case during pre-operative assessment, a plan should be prepared and necessary drugs and devices (also including alternative laryngoscopy instruments such as videolaryngoscope and airtraq) should be prepared beforehand by following existing algorithms. Conclusion: We believe that all examinations and preparations will be useful in minimizing possible complications of intubation and extubation.

VP-1
From laparoscopic liver wedge resection to pure laparoscopic anatomical right hepatectomy: how to get progress in minimally invasive approach
M Fatih Can, Murat Urkan, Oguz Hancerliogullari
Gulhane School of Medicine, Ankara, Turkey

Background: Laparoscopic liver resections are now considered safe and feasible operations when performed by experienced hepatobiliary surgeons. There is a consensus among experts that minimally invasive approach to liver resections needs to be commenced with small resections and advanced to more sophisticated anatomical lobectomies as the experience accumulates. This video presents the way we adopt to switch from minor to major hepatectomies. Material and Methods: Our surgical video list was queried to determine our cases of hand-assisted laparoscopic and pure laparoscopic liver resections. All operation videos recorded laparoscopically in the theatre were edited and rendered into a core video demonstrating our technical know-how accumulation. Result: The first cases of laparoscopic liver resections were those where colorectal liver metastases in the left lateral section (LLS) had been resected. Next, a hand assisted right posterior sectionectomy was performed. The next progress was pure laparoscopic anatomical LLS performed to treat HCC. Thereafter, a pure laparoscopic right posterior sectionectomy with an extensive hilar dissection was done. The final phase of our progress for laparoscopic...
liver surgery was a pure laparoscopic right hepatectomy with hilar division of right portal vein and right hepatic artery and intrahepatic transection of the bile duct. All the progress from the first case to the last one could be achieved with twenty patients operated on during the entire period, mainly due to experience existing in both open hepatobiliary and advanced laparoscopic gastrointestinal surgery. **Conclusion:** The way we adopt to advance our laparoscopic liver surgery approach from simple towards sophisticated resections seems to be safe and feasible.

---

**VP-2**
Minimally Invasive Approach for Better Postoperative Quality of Life at Asymptomatic Morgagnia Hernia Patient

*Mehmet Fatih Can, Oguz Hancerliogullan, Rahman Senocak, Yasar Subutay Peker, Orhan Kozak*

Gulhane Military Medical Academy Department of General Surgery, Ankara, Turkey

**Background:** Morgagni hernia (MH) is rare cause (2%) of congenital diaphragm hernias and is herniation of abdominal organs to thorax from anterior localized foramen of diaphragm. MH may be symptomatic or asymptomatic. Asymptomatic patients are suggested for surgery as symptomatic ones because of the risk of strangulation of the herniated organs. At this case report, we aimed to share our experience about minimal invasive approach applied to asymptomatic MH patient by video preview. **Material and Methods:** Data and surgical videos of an asymptomatic MH patient is discussed. **Result:** Laparoscopic ports were placed to umbilicus (for scope), to left lower quadrant and left/right upper quadrant on midclavicular line. Left laterally localized MH of 10x8x6cm sized with transverse colon/omentum herniated was explored. Herniated organs were dissected from the hernia case and replaced to abdomen. MH defect was reduced in diameter by intracorporeal laparoscopic primary suturation. Dual mesh was placed on the defect and fixed by laparoscopic tackor and intracorporeal laparoscopic suturation. **Conclusion:** Laparoscopic MH herniorrhaphy was first described at 1992 providing better exposure than laparotomy. Beside, with better cosmetic results, better postoperative quality of life and shorter hospitalization, laparoscopic Morgagni herniorrhaphy seems a feasible technique for asymptomatic MH patients.

---

**VP-3**
Video appraisal of three types of esophagojejunos- tomy techniques in laparoscopic total gastrectomy

*Oğuz Hancerliogullar, Mehmet Fatih Can, Murat Urkan, Ümit Alakuş, Rahman Şenocak, Hüseyin Sinan, Abdurrahman Şimşek*

Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Esophagojejunostomy anastomosis during laparoscopic total gastrectomy (LTG) represents one of the most critical steps of the procedure. Different types of esophagojejunostomy during LTG have been described; none has proved to be superior to others. This video appraisal focuses on advantages and disadvantages of those three types of anastomoses. **Material and Methods:** Our minimally invasive surgery video records and some online scientific surgical video archives were searched to identify the most commonly applied esophagojejunostomy types and technical details of each anastomosis during LTG. An illustration enhanced video to serve for visual appraisal was created. **Result:** In depth analysis revealed that there were three main types of laparoscopic esophagojejunostomy widely adopted: 1) End-to-side anastomosis performed using Orvil® placed transorally and circular stapler, 2) Side-to-side anastomosis performed using linear stapler, and 3) End-to-side anastomosis fashioned by placing pursestring stiches at the distal esophageal tip. The 1st technique has been the method of choice at majority of centers including us, and offers advantage of avoiding the need for a time consuming pursestring stitch placement. The 2nd method has been used by many experts from the Far East, and facilitates anastomatic phase. However, it has disadvantages of tip ischemia and increased tension on the anastomosis. The 3rd method is similar to the first one, except hand-sewn pursestring stitch placement, which lengthens the operation. **Conclusion:** This video appraisal of different esophagojejunostomy methods suggests that end-to-side anastomosis fashioned using transorally placed Orvil® is easy and a safe method chosen by the majority of gastrointestinal surgeons who perform LTG.

---

**VP-4**
Minimally invasive surgery for resectable synchronous colorectal cancer liver metastases: A video analysis

*M Fatih Can, Aytekin Unlu, Sezai Demirbas*

Gulhane School of Medicine, Ankara, Turkey

**Background:** Whether staged or simultaneous resection is better for patients with resectable synchronous liver metastasis from colorectal cancer (SCRCLM) is an issue of debate. A minimally invasive surgical (MIS) approach to colorectal and/or liver part of the procedure can be adopted. The aim of this video analysis is to share our experience with staged and simultaneous MIS in patients with SCRCLM. **Material and Methods:** MIS video archive was searched to identify cases in which minimally-invasive resectional procedures for SCRCLM had been performed. The raw video records obtained during MIS operations were used to create a final illustration enhanced video material. **Result:** After excluding operations where MIS procedure of any kind converted to open, there were five groups of operations analyzed: 1) simultaneous #1: MIS colorectal part plus MIS liver part, 2) simultaneous #2: MIS colorectal part plus open liver part, 3) staged #1: MIS colorectal part followed by a MIS liver part,
4) staged #2: MIS colorectal part followed by an open liver part, and 5) MIS liver part followed by a MIS colorectal plus an open liver part (hepatic re-resection). In addition, there was an exceptional case where the staged procedure included MIS low anterior resection plus MIS right portal vein ligation followed by an open liver part. The most commonly performed type of surgery was the staged #2 procedure (n=6). The simultaneous #1 procedure was applied to only two patients. **Conclusion:** Minimally invasive surgery is feasible and safe for staged and simultaneous resection of the primary and metastatic tumors in patients SCRLM.

### VP-6

**Safety of Johan forceps as endoloop knot pusher for laparoscopic appendicectomy: Is it Feasible**

**Khalid Khan** a, **Khurrum Siddique** b, **Shahid Roomi** b, **Muhammad Hanif Shiwania** a, **Peter Sedman** c, **Adeshina Fawole** d

a Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom; b Mid Yorkshire Hospitals NHS Foundation Trust, Dewsbury, United Kingdom; c Hull & East Yorkshire NHS foundation Trust, Hull, United Kingdom; d Mid Yorkshire NHS Foundation Trust, Dewsbury, United Kingdom

**Background:** A variety of methods are used to secure the base of the appendix. Our video presentation is regarding our published technique of Johan forceps as endoloop pushers for laparoscopic appendicectomy. **Material and Methods:** A prospective cohort study was conducted including all patients who underwent laparoscopic appendicectomy by this technique between 2012 till 2015. A number of registrars and consultants were trained in wet lab followed by supervised appendicectomy to secure the base of the appendix with three standard extra-corporeal endoloops using Johan’s forceps. Demographics, operative findings, post-op stay, complications and readmissions were recorded & analysed. **Result:** Total number of patients was 166 and included 110 (66%) males; with an age of #24 (14-77). Grossly inflamed appendix (including perforation, localised abscess) was noted in 76% of cases, while 20% had normal appendix. There were no peri-operative complications. The post-op stay was *1(1-7) days. There were no cases of stump leak or caecal trauma. The only reported complication was wound infection 9(5.4%) which was managed conservatively. There were 11 re-admissions all unrelated to the surgical technique. A total of nine registrars and consultants were surveyed who agreed with the safety, feasibility and easy reproducibility of this cost effective technique. **Conclusion:** Our series involving the use of Johan forceps as endoloop knot pusher shows that it is a feasible and safe technique with promising results. Training of surgeons belonging to different tiers without any complications confirms its safety profile.

### VP-7

**Robotic excision of substernal goiter**

**Ersin Sapmaz** a, **Kuthon Kavakli** a, **Hakan Isik** a, **Sedat Gurkok** b, **Alper Gozubuyuk** b

a Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey; b Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Substernal goiter must be removed surgically due to relation to compressive symptoms, potential airway...
compromise, and the possibility of an association with thyroid malignancy. In this video, we aimed to present a trans-thoracic robotic excision of substernal goiter. **Material and Methods:** Our robotic surgery video archive was searched to identify critical steps and technical details of robotic excision of substernal goiter. A video to serve for visual analysis was created. **Result:** A 50-year-old female admitted with the complaint of dyspnea on exertion. In her medical history, she had a thyroidectomy operation via cervical incision in 2007 and she was under levartron treatment. Thorax CT revealed a 5 cm diameter lesion located superior mediastinum and it was confirmed as thyroid tissue on thyroid singtony scan. After discussing the surgical approach with oto-laringologist, we decided to resect this lesion from the right chest cavity via robotic system. The robotic excision of the lesion was completed without any complication. The right phrenic was not injured during the operation. Her postoperative course was uneventful and he was discharged on 3th postoperative day. **Conclusion:** We recommend robotic approach for the surgical treatment of patient with substernal goiter. This minimally invasive method provides many advantages to the patients when compared with median sternotomy approach.

---

**VP-8**

Surgical technique of robotic diaphragmatic plication

Kuthan Kavakli, Okan Karatas, Alper Gozubuyuk
Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Plication of the diaphragm is the main treatment for diaphragm elevation. Surgical repair can be done open or minimally invasive such as VATS or robotic. Herein, we particularly mentioned about the surgical technique of robotic approach and its advantages. **Material and Methods:** Our robotic surgery video archive was searched for surgical technique of diaphragmatic plication. A final illustration enhanced video to serve for visual analysis was created. **Result:** A 21-year-old man was referred to our hospital for any surgical treatment of left diaphragm elevation that was discovered during the evaluation of dyspnea on exertion. We performed robotic diaphragmatic plication with U suturing. The first suturing is more difficult than other sutures, because shoulder may avoid the movement of robotic arm. This first U suture was knotted carefully with the help of pledgets materiel. This knotting will make easier to pass the patients when compared with median sternotomy approach.

---

**VP-9**

The significant role of preoperative three-dimensional imaging and simulation in anatomical right-sided hepatectomy for gallbladder carcinoma with complicated portal vein anomaly associated with right-sided round ligament

Hiroaki Terajima, Tohru Gotoh, Hiroyuki Matsubara, Ryu Ohno, Taku Okamoto, Takehito Yamamoto, Yoichiro Uchida, Shugo Ueda, Akira Mori, Akiyoshi Kanazawa
Dept. of Gastroenterological Surgery and Oncology, Kitano Hospital, The Tazuke Kofukai Medical Research Institute, Osaka, Japan

**Background:** Three-dimensional imaging using analytic software enables us to precisely evaluate anatomical variations of hepatic structures, leading to making a systematic preoperative planning. **Material and Methods:** A seventies male was radiographically and histopathologically diagnosed as gallbladder carcinoma with right-sided round ligament. The direct infiltration to right hepatic duct was suspected by ERCP. Three-dimensional imaging demonstrated a complicated portal venous branching that all segment pedicles separately ramified from the portal trunk in a fan-like form, an independent ramification of B8 from left hepatic duct (LHD), and a common branching of A8 from RHA, which showed an extremely peculiar anatomical variant of vascular and biliary structures of SB. Based on the assessment of a possible negative surgical margin at LHD and the simulation of the remnant liver volume ratio (58.7%), modified right-sided hepatectomy (S1r+S5+S6+S7) with concomitant biliary reconstruction was planned. **Result:** After transecting common bile duct, skeletonizing RHA, LHA, and PV, and hepatic hilar lymph node dissection, all vascular and biliary structures of the resected side were ligated and cut according to the preoperative simulation in the following order: (1) LHD (intraparenchymal approach after partial resection of S4 at the gallbladder bed), (2) A7 from RHA, (3) P7 and P5+6 separately branching from the right-sided umbilical portion, (4) A5+6, (5) P1-right from PV trunk. After hepatic transection along the clear demarcation line, the planned right-sided hepatectomy was successfully performed with pathologically negative surgical margins. **Conclusion:** Preoperative three-dimensional imaging and simulation is significant for anatomical hepatic resection in right-sided round ligament.
VP-10
The liver-first ALPPS procedure: worth to be an option to offer patients with colorectal cancer liver metastases?

Mehmet Fatih Can, Rahman Şenocak, Oğuz Hançerlioğulları, Şahin Kaymak
Gulhane Military Medical Academy, Ankara, Turkey

Background: The liver-first associated liver partition and portal vein ligation for staged hepatectomy (ALPPS), where the liver phase is completed before the colorectal operation, describes an alternative approach to classical ALPPS procedure. This study aims to share our experience with the liver-first ALPPS technique. Material and Methods: Our surgical video archive was searched to retrieve required information concerning the liver-first ALPPS procedure. A final illustration enhanced video was created consisting of preoperative images and intra- and postoperative course. Result: There were two patients, aged 52 and 46, undergoing liver-first ALPPS procedure. They had received six- and twelve-cycle FOLFOX chemotherapy, respectively, before referral to our department. They had their primary tumor of upper rectum in place. The FLRs were 33% and 28%, respectively. In the first case, liver right posterior sectionectomy, left portal vein ligation and parenchymal transection on the Cantlie’s line was performed. In the second case, a regular first stage of ALPPS procedure with RFA for the left lateral sector liver masses was carried out. The completion hepatectomies were undertaken 10 and 11 days later, respectively. The estimated FLR before the second stages were 60% and 58%. Both patients had biliary fistula requiring nasobiliary drainage and had their total mesorectal excision performed 60 and 72 days after the completion hepatectomies, respectively. They had 14 and 11 months of disease free survival, respectively and are still alive. Conclusion: The liver-first ALPPS procedure is a demanding operation carrying a high risk of morbidity. However, it has the potential to offer patients curative treatment who otherwise would not have a chance for cure.

VP-11
Interactive 3D educational software created to study upper gastrointestinal and hepatobiliary vascular anatomic variations

M Fatih Can
Gulhane School of Medicine, Ankara, Turkey

Background: Upper gastrointestinal and hepatobiliary (UpGI-HPB) systems have wide range of vascular anatomic variations, of which some are hard to imagine three dimensionally. This study aims at demonstrating features of a novel software that contains 3D interactive models of main vascular anatomic variations of UpGI-HPB systems a surgeon may encounter in his/her daily practice. Material and Methods: The software was made available to Turkish General Surgeons in November 2015. First, using several 3D-modeling and illustration softwares, a package of 3D models of UpGI-HPB systems was formed. Next, variations of celiac trunk, portal vein and hepatic veins were created in conformity with three reference articles on vascular anatomic variations. Finally, some interactive futures were added to the software. Result: The software contains the usual anatomy and 36 variations of the celiac trunk and its branches, the usual anatomy and 4 variations of portal venous system, and the usual anatomy and 4 variations of hepatic veins. Every single 3D model of anatomical structures such as segments of the liver or a vessel can be made invisible or transparent. This feature allows the user to figure out how posteriorly situated organs or vessels are positioned three dimensionally. Furthermore, the whole package or every single structure can be rotated, panned and zoomed in and out. This feature allows the user to understand how regional anatomy or a structure is seen from the back, the top or the bottom. Conclusion: I believe that this novel interactive 3D software will help surgeons imagine and better understand vascular anatomical variations of UpGI-HPB systems.

VP-12
Conversion surgery after effective chemotherapy for pancreatic head carcinoma occluding portal vein

Junichi Arita, Nobuhisa Akamatsu, Junichi Kaneko, Yo- shihiro Sakamoto, Kiyoshi Hasegawa, Kiyoshi Hasegawa, Kiyoshi Hasegawa, Norihiro Kokudo
Hepatobiliary-Pancreatic Surgery Division, Surgery Division, Graduate School of Medicine, University of Tokyo, Tokyo, Japan

Background: Recent advancement of chemotherapy has enabled conversion surgery after effective chemotherapy for initially unresectable pancreatic carcinoma in selected patients. We herein report a conversion surgery in which a Whipple procedure was performed against initially unresectable pancreas head carcinoma involving whole circumference of SMV. Material and Methods: A 62-year-old man with a locally advanced pancreas head carcinoma which occluded SMV and abutted to SMA presented. As the tumor was considered unresectable, a systemic chemotherapy using 12-course of FOLFIRINOX for 5 months was administered. A CT-scan revealed an extreme shrinkage of the tumor-site although SMV occlusion and abutment of soft tissue density to SMA remained. A Whipple procedure without SMV reconstruction preserving collateral venous drainage route along the marginal vein of colon and ileum was planned. During the surgery, SMA was successfully detached from the tumor and a portal venous reconstruction was avoided as planned. Operation time was 757 minutes and estimated blood loss was 2100 mL. Result: The post-operative course was uneventful with grade A POPF. The patient is well without tumor recurrence for 8 months after surgery with adjuvant chemotherapy using S-1. Conclusion:
A video is shown for a successful surgery without portal re-
construction for pancreatic carcinoma occluding portal vein.

**VP-13**

**Super-high larynx-preserving surgery for cervical esophageal carcinoma**

Yasuki Nakajima, Kenro Kawada, Yutaka Tokairin, Tet-
suma Chiba, Akihiro Hoshina, Yutaka Miyawaki, Takuya
Okada, Tatsuyuki Kawano

Tokyo Medical and Dental University, Tokyo, Japan

**Background:** In our institution, super-high larynx-preserv-
ing surgery has been aggressively performed for cervical esophageal carcinoma, even when the oral side of the tumor margin is extended beyond the esophageal orifice. Our aim was to demonstrate super-high larynx-preserving surgery and clarify the clinical outcomes. **Material and Methods:** Eight patients who received super-high larynx-preserving surgery were enrolled. Regarding super-high larynx-preserving surgery, the following two surgical techniques were introduced: the "tracheal traction method," where the tra-
chea is moved forward with the larynx and hypopharynx, and the "larynx rotation method," where the larynx and hy-
opharynx are manually rotated counterclockwise more than 90 degrees by holding down the thyroid cartilage. Such maneuvers provide a sufficient surgical field to transect the cervical esophagus on the oral side of the tumor and to anastomose it with a substituted organ. **Result:** In three pa-
tients, tumor invasion beyond the orifice was observed. Re-
garding postoperative morbidity, although all patients de-
veloped recurrent nerve paralysis, the paralysis was tempo-
rary and improved within a year. Mild pneumonia occurred in one patient. Anastomotic leakage and reconstructed or-
gan necrosis were not experienced. The median postopera-
tive hospital stay was 25 days. Although two patients showed postoperative recurrence and the five-year pro-
gression-free survival rate was 72.9%, all patients survived. **Conclusion:** Super-high larynx-preserving surgery is con-
sidered to be acceptable because both organ preservation and functional preservation can be achieved with tolerable short-term and long-term clinical outcomes.

**VP-14**

**Robotic left middle lobectomy**

Kuthan Kavakli, Ersin Samaz, Sedat Gurkok, Alper Gozu-
buyuk

Department of Thoracic Surgery, Gulhane Military
Medical Academy, Ankara, Turkey

**Background:** Patients who have repeated episodes of in-
fecion with lobar collapses and evidence of bronchosteno-
sis, tumor or obstruction from enlarged lymph nodes can be
defined as middle lobe syndrome. The treatment of this pa-
thology is surgical resection. In this study, we aimed to pre-
sent a robotic left middle lobectomy video that the anatomy was completely miror imaging. **Material and Methods:** Our robotic surgery video archive was searched to identify critical steps and technical details of lobectomy. A final video including lobectomy was created to serve for visual analysis. **Result:** A 21-year-old male patient was admitted with a pro-
ductive cough and episodes of pneumonia. The chest com-
puterized tomography revealed left-sided middle lobe syn-
drome, and his abdominal ultrasound confirmed situs inversus totalis. He had no other component of Kartagener syn-
drome such as chronic sinusitis. The patient was placed in right lateral decubitis position. We performed left middle lobectomy with three arms of robotic system without any difficulties. The cause of the bronchiectasis was an enlarged lymph node around the middle lobe bronchus. It was dis-
sected easily with robot and during the dissecting we some-
times used conventional VATS instruments to make easier the dissection. The postoperative course of the patients was uneventful and he was discharged on the 4th postoperative day. **Conclusion:** We believe that robotic approach for a pa-
tient with middle lobe syndrome is feasible and safe.

**VP-15**

**Laparoscopic-thoracoscopic versus robotic assisted Ivor-Lewis Esophagectomy for esophagogastric junction tumors: Video analysis**

Mehmet Fatih Can a, Kuthan Kavakli b, Oğuz
Hançerioglu a, Rahman Şenocak a, Orhan Kozak a

a Gulhane School of Medicine, Department of Surgery, Ankara, Turkey; b Gulhane School of Medicine, Depart-
ment of Thoracic Surgery, Ankara, Turkey

**Background:** Minimally invasive Ivor-Lewis esophagectomy for esophagogastric junction tumors or esophageal cancer has been an emerging approach in recent years. Whether robotic assistance has advantages over the laparoscopic-
thoracoscopic approach is controversial. This video ap-
praisal aims to compare technical features of those two ap-
proaches. **Material and Methods:** Our minimally invasive surgeryvideo archive was searched to identify critical steps and technical details of each technique. A final illustration enhanced video to serve for visual analysis was created. **Result:** Our analysis showed that for esophagogastric junction tumors the operation starts with abdominal phase, where the resectability of the tumor is assessed, the Kocherization is completed and the formation of gastric conduit with a good blood supply is ensured. This phase is similarly carried out in laparoscopic-thoracoscopic and robot-assisted ap-
proach. Robotic assistance aids in placing reinforcement stitches on the stapler line of the conduit, if needed. Again, we recognized no marked superiority of the robot over con-
ventional thoracoscopy during the intrathoracic phase, ex-
cept for the anastomotic reconstruction. While there is no difference between the two methods if Orvil® is to be used for esophagogastrostomy, robot considerably facilitates the
procedure if intracorporeal manual purse-stringing stitches are to be placed at the esophageal tip. **Conclusion:** This analysis suggests that robotic assistance has no clear advantages over conventional laparoscopic-thoracoscopic approach for many steps in Ivor-Lewis esophagectomy. However, robot may have an important role if suture placement for any reason is required.

**VP-16**

**ALPPS in rats: tricks and tips**

Andras Budai M.D. a, Andras Fulop M.D. b, Tibor Kovacs M.D. c, Dora Tihanyi a, Pekli Damjan M.D. b, Péter Onody M.D. b, Attila Szijarto M.D. a

a Hepato-Pancreato-Biliary Research Center Hungary, Semmelweis University, Budapest, Hungary; b Experimental Research Centre, 1st Department of Surgery, Semmelweis University, Budapest, Hungary; c HPB Surgical Research Center Hungary, 1st Department of Surgery, Semmelweis University, Budapest, Hungary

**Background:** ALPPS (Associating Liver Partition and Portal vein Ligatior for Staged hepatectomy) is a novel yet not clearly understood method which is capable accelerated liver regeneration. In order of safety development and background clarification small animal research models are needed to be created. Our aim is to show technical insight into small animal ALPPS. **Material and Methods:** Male Wistar rats (n=200) were subjected to ALPPS. The portal branches leading to the right lateral, left median, left lateral and caudate lobes were ligated causing an approximately 75-80% parenchymal exclusion from the portal circulation. The splitting of the median lobe was performed alongside the line of the falciform ligament utilizing parenchymal U sutures and blunt preparation technique. The liver wounds were sealed with electrocautery. **Result:** ALPPS was performable 92% of the time. After the series of portal ligation, the ischemic line alongside the border of the left and right median lobe becomes clearly visible. No animals showed signs of terminal liver insufficiency during the postoperative period, nor related loss was present. The majority of fatal outcomes (95%) were caused by intraoperative vascular injury. In 6% of the cases ALPPS was imperformable due to anatomical malformations of the liver or of its vasculature. **Conclusion:** ALPPS is a standardly performable and multipliable technique in rodents. However, as a rodent model it cannot be used for direct translation, but might provide valuable insight into accelerated liver regeneration.

**PP-1**

Morphological aspects of bovine-derived peritoneum implant for the nephropexy in early stage of experiment

Maida Tussupbekova, Nurkassi Abatov, Aigerim Abatova, Yerkebulan Assamidanov, Ruslan Badyrov

Karaganda State Medical University, Karaganda, Kazakhstan

**Background:** There are not data in the literature review about using a decellularized bovine-derived peritoneum implant for the nephropexy. The aim of this study was to assess the structural changes in the contact area between the xenoperitoneum implant and kidney on a rat model in the early stages after implantation. **Material and Methods:** For the nephropexy model was used bovine-derived peritoneum implant 1.0*1.0 cm in 56 rats. Histological criteria were included an adhesion and fibrosclerosis processes, neovascularization. There were two groups: I group (control) – using polyester mesh (n=28), II group (study) – the bovine-derived peritoneum implant (n=28). Observation periods: 7,14,21,30 days. **Result:** On the 7th day after implantation in the II group, where was used xenoperitoneum implant, there were neovascularization process in the implantation area, moderate lymphoid infiltration and formation of granulation tissue. By the 14th and 21st days was registered infiltration of singular lymphocytes. On the 30th day after implantation inflammatory response and the process of fibro-sclerosis were not detected. In the I group, after 7 days there was diffuse lymphoid reaction with significant number of eosinophil cells. On the 14th day granulation tissue was formed and by the 21st day after implantation it was matured. Furthermore, lymphoid macrophage infiltration with eosinophil cells was preserved. On the 30th day the formation of fibrous adhesions and fibrous capsule, reactive inflammation were fixed. **Conclusion:** Decellularized xenoperitoneum implant in a rat model of nephropexy was characterized by the absence of a progressive fibroplastic process and reactive inflammation and demonstrated early reparative processes in comparison with polyester mesh.

**PP-2**

Atypical groin pain

Ziad Abbassi, Naiken Surennaidoo, Toni Raffoul, Frederic Ris, Philippe Morel

University Hospital of Geneva, Geneva, Switzerland

**Background:** Femoral hernias are acquired protrusions of an organ or a part of an organ through the femoral ring, and are located inferior to the inguinal ligament. Femoral hernias represent less than 10 percent of all inguinal hernias and only 2 to 4 percent of all hernia repairs. Despite their low prevalence, 40 percent of cases present as surgical emergencies with signs of incarceration or strangulation.
We present the rare case of a bilateral femoral hernia. **Material and Methods:** Case report and review of the literature. Result: A 46-year old female diabetic patient consults our emergency department due to a pain in the right groin, worsening since its onset three days ago. The pain radiates throughout the right leg and is related to nausea without vomiting. The patient has never noticed any inguinal protrusion or mass. Abdominal physical examination is normal and no neurological or vascular deficits are found. During surgical exploration, we two femoral hernias were seen with preperitoneal fat content. Conclusion: There are three traditional approaches to surgically treat femoral hernia: femoral, inguinal and preperitoneal. The inguinal approach is preferred for strangulated femoral hernia in which sometimes sectioning the inguinal ligament is only alternative to reduce the hernia. For incarcerated hernia, the other 2 approaches can be tempted only if the surgeon is sure that no resection of bowel would be needed.

---

**PP-3**

**Adverse effect of diverting ileostomy on renal function in patients with colorectal cancer**

Shintaro Akimoto, Mina Nagao, Ayaka Wakabayashi, Eisuke Asano, Hironobu Suto, Takayoshi Kishino, Naoki Yamamoto, Masao Fujiwara, Keiichi Okano, Hisashi Usuki, Yasuyuki Suzuki

Kagawa University, Miki-cho, Japan

**Background:** Background: Although major surgeries have been increasingly performed in patients with chronic kidney disease (CKD) and/or geriatric patients in recent years, there are few detailed reports about influence of diverting ileostomy on postoperative renal function in patients undergoing colorectal cancer surgery. The aim of this study was to assess whether diverting ileostomy has a negative impact on eGFR in a series of colorectal surgery. **Material and Methods:** We reviewed the clinical charts of 49 cases of colorectal cancer which had undergone diverting ileostomy from September 2001 to August 2013. The factors affecting the renal function were analyzed. **Result:** a) eGFR value 3 months after diverting ileostomy significantly decreased compared to preoperative value (74.3±20.7 vs 80.7±18.3, P=0.002). There was no significant difference in eGFR values between 3 months after diverting ileostomy and 1 year after stoma closure (74.3±20.7 vs 74.5±18.0, P=0.471). b) The eGFR ratio was defined as eGFR 3 months after diverting ileostomy / preoperative eGFR. This ratio of geriatric patients (≥75 year old, n=10) significantly decreased compared to non-geriatric patients (<75 year old, n=39) (0.78±0.26 vs 0.98±0.24, P=0.036). Gender (P=0.286), preoperative eGFR (P=0.102), postoperative complications (P=0.565), adjuvant chemotherapy (P=0.928), stoma output volume (P=0.085) and antidiarrheal drug (P=0.091) did not affect eGFR ratio.

**Conclusion:** eGFR value decreased 3 months after diverting ileostomy and did not improve even 1 year after stoma closure. This reduction is more prominent in a geriatric population. From these results, we do not recommend routine diverting ileostomy, especially in geriatric and CKD patients.

---

**PP-4**

**Correction of the Tibial Torsionel Deformity with Distal Tibial Derotation Osteotomy and Internal Fixation without Fibular Osteotomy**

Kenan Koca a, Serkan Akpancar a, Yusuf Erdem b, Cemil Yıldız a

a Department of Orthopaedic Surgery, Gulhane Military Medical Academy, Ankara, Turkey; b Department of Orthopaedic Surgery, Girne Military Hospital, Girne, Cyprus

**Background:** Tibial torsionel deformity secondary to femoral internal deformity is common in children with cerebral palsy. In particularly tibial external deformity reduce rehabilitation success with worsening gait and standing functions. The purpose of this study is to demonstrate tibial torsionel deformity that the purpose of this study is to demonstrate tibial torsionel deformity that can be treated by distal tibial derotation osteotomy without fibular osteotomy. **Material and Methods:** From 2010 to 2012 distal tibial derotation osteotomy was applied 8 tibia of the 5 patient. Platescrew was used for 6 tibia, K wires were used for 2 tibia after the osteotomy for fixation. Fibular osteotomy wasn’t used in the operation. After the operation, cast, splint immobilization wasn’t used to any of the patients. The patients were followed up for a mean time of 1.8 years (range 2.9 to 1.1 year). In the final follow-up, patients were evaluated with thigh foot angle, foot progression angle, post-op complications, serial foot radiographies and gate functions. **Result:** The average thigh foot angle reduced from 46.8 to 17.75, the average foot progression angle reduced from 44 to 15.4. Gate and standing functions were improved. **Conclusion:** Tibial external rotation deformity is common in children with cerebral palsy. In particularly tibial external deformity reduce rehabilitation success with worsening gait and standing functions. The purpose of this study is to demonstrate tibial torsionel deformity that can be treated by distal tibial derotation osteotomy without fibular osteotomy.
PP-5
Long-Bone Fractures in the Patients with Firearm Injury
Kenan Koca 1, Omer Ersen 1, Serkan Akpancar 1, Servet Tunay 2
1 Department of Orthopedic Surgery, Gulhane Military Medicine Academy, Ankara, Turkey
2 Department of Orthopaedics and Trauma Surgery, Haydarpasa Military Medical Academy, Istanbul, Turkey

Background: The aim of this study is to identify the long-bone fractures of firearm injuries in a military hospital. Material and Methods: Patients with fractures due to firearm injuries were included in this study. Types of fractures, initial and subsequent treatments were investigated retrospectively. Result: Between August 2015 and February 2016, 92 patients were admitted with extremity trauma by firearm injury. 72 of injuries were included in this study. Types of fractures, initial and subsequent treatments were investigated retrospectively. All fractures were closed type and all of the patients were treated with open reduction and plate osteosynthesis through lateral approach. Elbow and shoulder ROMs were examined. The DASH (Disabilities of the Arm, Shoulder and Hand) scoring system was applied at the final follow-up visit. Result: There were 7-male and 4-female patients with a mean age of 36 years (range, 28-50 years). All of the fractures occurred with same mechanism resulting from motor vehicle accident. Conservative treatment was not considered for any of the cases. The mean time to surgery was 2 days (1-3 days). The mean postoperative follow-up period was 14 months (6-24 months). All fractures had healed completely at 3 months postoperatively. The mean DASH score was 4.2(3.3-6.7). Conclusion: Humerus spiral shaft fractures with a large medial butterfly fragment can be seen in dashboard injuries. It is important to fix the medial large fragment anatomically and minimal invasively in order to achieve union and not to disturb the vascular supply.

PP-6
Spiral-medial butterfly fractures (AO-12-B1) in distal diaphysis of humerus with rotational forces: preliminary results of open reduction and plate-screw fixation
Kenan Koca 1, Tolga Ege 1, Mustafa Kurklu 1, Safak Ekin 1, Serkan Bilgic 2, Serkan Akpancar 3
1 Department of Orthopaedic Surgery, Gulhane Military Medical Academy, Ankara, Turkey
2 Department of Orthopaedic Surgery, Haydarpasa Military Medical Academy, Istanbul, Turkey
3 Department of Orthopaedic Surgery, Haydarpasa Military Medical Academy, Istanbul, Turkey

Background: Humerus shaft fractures are frequent injuries in orthopedic practice and generally occurs with direct and indirect traumas. While the most of these fractures can be managed with conservative methods, in some situations surgery is needed. The aim of this study is to define a different mechanism and treatment result of humerus spiral fractures with medial butterfly fragment (AO-12-B1). Material and Methods: Between 2010 and 2013, 11 patients who had undergone surgery for spiral humerus shaft fracture with medial large butterfly fragment (AO type 12-B1) resulting from a motor vehicle accident were enrolled to the study. All data was retrieved from the hospital's database retrospectively. All fractures were closed type and all of the patients were treated with open reduction and plate osteosynthesis through lateral approach. Elbow and shoulder ROMs were examined. The DASH (Disabilities of the Arm, Shoulder and Hand) scoring system was applied at the final follow-up visit. Result: There were 7-male and 4-female patients with a mean age of 36 years (range, 28-50 years). All of the fractures occurred with same mechanism resulting from motor vehicle accident. Conservative treatment was not considered for any of the cases. The mean time to surgery was 2 days (1-3 days). The mean postoperative follow-up period was 14 months (6-24 months). All fractures had healed completely at 3 months postoperatively. The mean DASH score was 4.2(3.3-6.7). Conclusion: Humerus spiral shaft fractures with a large medial butterfly fragment can be seen in dashboard injuries. It is important to fix the medial large fragment anatomically and minimal invasively in order to achieve union and not to disturb the vascular supply.

PP-7
A challenging case of unilateral rectal prolapse: the options and management
Khurram Siddique 1, Kaozar Azoui 2, Farhan Akram 3
1 Mid Yorkshire Hospital NHS Foundation Trust, Dewsbury, United Kingdom
2 University of Manchester, Manchester, UK
3 University of Manchester, Manchester, UK

Background: Rectal prolapse presents commonly as partial or full thickness circumferential prolapse. The symptoms may include peri-anal lump, discomfort, bleeding etc. We present here a rare but challenging case of unilateral full thickness rectal prolapse causing significant symptoms initially treated as prolapsing haemorrhoids. Material and Methods: Case Report: A 57-year-old male presented with bright red PR bleeding along with feeling of a lump outside the anal canal. The blood was not mixed with stools but he also mentioned mucous discharge. There were neither any red flag features of bowel cancer nor any family history of bowel cancer. The initial clinician thought that he had prolapsing haemorrhoids and hence banding was performed. His symptoms did not improve despite two sessions of banding. His endoanal scan and proctogram did not show any significant pathology and was subsequently booked for an EUA. During that procedure the colorectal surgeon noted a unilateral full thickness rectal prolapse extending from 6 -12'0 clock position with a lax but intact sphincter. Considering such a rare presentation, the case was discussed in the regional pelvic floor meeting and few
options were proposed. Another EUA was performed and a one sided Delorme’s was done. The patient made an uneventful recovery and was discharged the same day. He did not report any episodes of incontinence and was very satisfied with the outcome at follow-up. **Conclusion:** The author’s recommend a tailored and careful multi-disciplinary approach for such complex and rare cases like our case of unilateral prolapse, to achieve a successful outcome.

---

**PP-8**

**Traumatic diaphragmatic hernia with unusual presentation: report of two cases**

Gajendra Anuragi, Jaspreet Singh, B N Sharma, Rajendra Mandia

Sawai Man Singh Medical College, Jaipur, India

**Background:** Traumatic diaphragmatic hernia is an uncommon entity with serious sequela. Being a diagnostic challenge to surgeons, delay in diagnosis can lead to severe cardio-respiratory compromise. Review of trauma literature shows the overall incidence to be about 5 percent with higher occurrences in penetrating trauma as compared to blunt. **Material and Methods:** We describe here two cases of traumatic diaphragmatic hernia, first case being a 23-year-old male presenting 10 years after trauma with heaviness and respiratory problem in right side of chest. Radiologically, right side diaphragmatic hernia was diagnosed and he was ultimately found to have intrathoracic bowel and some part of liver. Second case was of a 65-year-old male with fecal fistula over left side of chest, diagnosed radiologically, and had intrathoracic spleen, gangrenous and perforated part of transverse colon with colo-pleural fistula. **Result:** First case was operated laparoscopically and reduction of herniated contents with diaphragmatic mesh hernioplasty was done. Patient was discharged uneventfully on 5th post operative day. For second case emergency laparotomy with reduction and repair of hernial defect and resection of affected colon with colostomy was performed but patient could not survive beyond 7th post operative day. **Conclusion:** Prompt diagnosis and treatment is important to prevent serious sequel with enquiry of previous history of trauma to diagnose patients with delayed presentation. A good clinical suspicion with radiographic evaluation is essential for early diagnosis. All diagnosed cases must be repaired either by laparotomy, thoracotomy, a thoraco-abdominal approach or by minimal access surgery.

---

**PP-9**

**The effectiveness of FDG-PET in patients with gastric cancer**

Eisuke Asano, Hironobu Suto, Takayoshi Kishino, Naoki Yamamoto, Shintaro Akamoto, Masao Fujiwara, Keiichi Okano, Hisashi Usuki, Yasuyuki Suzuki

Kagawa University, Kita-gun, Japan

**Background:** 18F-fluorodeoxyglucose positron emission tomography (FDG-PET) has a lower sensitivity than CT for gastric cancer, there were few reports on the effectiveness. We examined the effectiveness of FDG-PET for gastric cancer. **Material and Methods:** 91 patients who performed FDG-PET preoperatively at our department between April 2010 and November 2014 were included in this study. PET-positive gastric cancer was defined as that the Maximum Standardized Uptake Values (SUVmax) of the primary lesion was 5 or more, we studied the relationship with clinicopathological factor. **Result:** Of 91 patients, 56 (61.5%) had PET-positive gastric cancer. PET-positive gastric cancer were significantly associated with histological type (cohesive type : 36/48 vs non-cohesive type : 19/41, p=0.0055), depth of invasion (pT1 : 11/33 vs pT2,3,4 : 45/58, p<0.0001), presence of lymphatic invasion (negative : 7/22 vs positive : 49/68, p=0.0007), presence of venous invasion (negative : 8/25 vs positive : 48/64, p=0.0002), and presence of lymph node metastasis (negative : 19/43 vs positive : 37/47, p=0.0007). Of the 33 patients with pT1, there were lymph node metastasis in six cases, of which, five cases were PET-positive gastric cancer (p=0.0041). **Conclusion:** SUVmax of the primary tumor for gastric cancer were well correlated with the clinicopathological factors. It was suggested that FDG-PET was useful for the prediction of lymph node metastasis in T1 cases.

---

**PP-10**

**Diarrhoea following cholecystectomy: A little known complication**

Muhammad Saad Azhar, Anwar Hussain, Ayub Khan

Royal Stoke University Hospital, Stoke-on-Trent, United Kingdom

**Background:** New-onset post-operative diarrhoea is a significant problem and is reported in the literature in up to 30% of patients undergoing laparoscopic cholecystectomy. However, the majority of patients are not informed of this complication pre-operatively. We aim to look at current consenting practice for laparoscopic cholecystectomy in our unit. **Material and Methods:** Retrospective analysis of prospectively maintained consent forms of patients undergoing laparoscopic cholecystectomy in a single unit from February to August 2015. We analysed data on the consenting doctor and whether this complication was mentioned. **Result:** 74 patients underwent laparoscopic cholecystectomy...
under 8 different consultants. 14 patients (18.9%) were consented by non-consultants (registrars and SHO’s) and the remaining 58 (81.1%) were consented by consultants. 22 patients (29.7%) were consented for post-operative diarrhoea. Of these, 20 (90.9%) were consented by a single consultant. 52 patients (70.3%) were not consented. 6 of 8 consultants did not consent any of their patients for this complication. Conclusion: Our study shows that the majority of patients are not being consented for post-operative diarrhoea which is against good surgical practice and can be a cause of litigation in the future. This should be rectified by following the good consenting practice protocol and by educating surgeons.

**PP-11**
The study of a bovine-derived peritoneum implant biocompatibility in abdominal wall reconstruction

*Nurkasi Abatov a, Maida Tussupbekova a, Ruslan Badyrov a, Kabybek Abugaliev b, Aigerim Abatova a*

a Karaganda State Medical University, Karaganda, Kazakhstan; b National Scientific Center for Oncology and Transplantation, Astana, Kazakhstan

**Background:** For the first time an experimental study of de-cellularized bovine-derived peritoneum as a new biological implant for repairing abdominal wall defects was leaded. The aim was to assess the structural changes of the abdominal wall upon contact with bovine-derived peritoneum implant in the early stages after implantation. **Material and Methods:** Open abdominal wall defect repair was performed in 24 white non-linear rats, weight 180-225g. Bovine-derived peritoneum implants were 1,0*1,0 cm per one animal. Observation periods were 5, 21, 30 days (n=8 in each group). Macroscopical assessment was included the infection existence in implantation area, adhesion and seroma formation. Microscopical criteria were performed by an inflammatory response, neovascularization and the connective tissue maturation. The technique of staining with H&E, Van Gieson’s stain with pikro-fuchin. **Result:** Upon autopsy, macroscopically, in all cases no seroma formation or infection was observed. Adhesion formation at the margins of implants and suture sites were occasionally registered in 9% cases. On the 7th day the microscopic data showed the granulation tissue and new thin-walled blood vessels formation in the implantation area, the suture-line reactive inflammation and giant cell infiltration. By the 21th day there was a granulation tissue maturation, around of the implantation area were fixed moderate lymphocytes infiltration and singular plasmocytes. On the 30th day connective tissue maturation was registered, inflammatory response was absent. **Conclusion:** Bovine-derived peritoneum implant in the early stages of the experiment showed adequate biocompatibility with the recipient body, without causing severe post-implantation inflammation. These data are allowed to use this biological graft for abdominal wall reconstruction perspective.

**PP-12**
Distribution of pressure during negative pressure wound therapy in experimental porcine abdominal compartment syndrome

*Klaudia Balog a, Adrienn Csisztkó a, Zoltán Attila Godó b, Katalin Pető c, Ádám Déak c, Mariann Berhés d, Norbert Németh c, Zsolt Szentkereszty a*

a University of Debrecen, Medical and Health Science Center, Institute of Surgery, Debrecen, Hungary; b University of Debrecen, Faculty of Informatics, Department of Information Technology, Debrecen, Hungary; c University of Debrecen, Faculty of Medicine, Department of Operative Techniques and Surgical Research, Debrecen, Hungary; d University of Debrecen, Faculty of Medicine, Department of Anesthesiology and Intensive Care, Debrecen, Hungary

**Background:** The negative pressure wound therapy (NPWT) is getting a more widely used surgical procedure for abdominal compartment syndrome (ACS). However little information is known about the pressure distribution in the abdominal cavity during this procedure. The aim of our study was to evaluate the pressure values in different parts of the abdominal cavity during NPWT for experimental ACS. **Material and Methods:** ACS was induced in pigs by implanting a silastic bag in the abdomen and filled with saline solution until intraabdominal pressure reached 30 mmHg. After 3 hours -50, -100, -150 mmHg NPWT (Vivano Med R Abdominal Kit) or Bogota-bag treatment was started. A multichannel pressure monitoring system was used for measuring the pressure distribution in the abdominal cavity. The pressure was monitored with pressure sensors in two places amongst the bowels. The other four sensors were applied in the middle and laterally, below and in front of the layer. **Result:** It was experienced that amongst the bowels the pressure values changed periodically between 0 and -12 mmHg which might be caused by the peristaltic movements of the bowels. The values of the pressure were minimally higher both in front of and below the layer in the middle than laterally. On the basis of the results it can be stated that the pressure was distributed well towards the lateral sides. **Conclusion:** The spread of the negative pressure in the abdominal cavity along the three dimensional protective layer is effective. In the inter-intestinal space the pressure level did not change significantly during the therapy.
PP-13

Atypical migration of metal suture anchor used in arthroscopic bankart repair

Ibrahim Yanmış, Serkan Bilgiç, Murat Şengül, Selami Çakmak

Gulhane Military Medical Academy, Istanbul, Turkey

Background: Anterior shoulder instability is a common orthopaedic problem, and arthroscopic bankart repair has been shown to effectively restore stability and prevent recurrence. However, despite success with this surgical technique, there are several clinically relevant complications associated with arthroscopic techniques for anterior shoulder stabilization. In this case we presented migration of anchor to the extraarticular region. Material and Methods: A 37 years old male presented our clinic three years following arthroscopic bankart procedure. He stated that although he had not experienced any new shoulder dislocation since his surgery he had never been pain free. Arthroscopic debridement performed 2.5 years after the primary surgery. But his motion of his shoulder was limited and painful. Result: In physical examination there was a painful and tenderness area at the medial aspect of his arm with palpation. In radiograph two metal suture anchors were found in the subcutaneous tissue of posteromedial arm. These two anchors with pseudocapsule were removed easily with operation. Conclusion: Metal suture anchors used for bankart repairs can fail, loosen, migrate or be left proud. Following arthroscopic bankart procedure if there is any pain during rehabilitation radiograph should be performed immediately. Using bioabsorbable suture anchors can be reduced this type migration problems.

PP-14

Compartment Syndrome of the Lower Leg After prolonged surgery

Serkan Bilgiç, Seref Basal, Ugur Yener

Gulhane Military Medical Academy, Istanbul, Turkey

Background: Acute compartment syndrome usually occurs after a traumatic injury such as a car crash. It also can occur when a patient has been lying in the lithotomy position during prolonged surgery. In this case we presented iatrogenic complication after a patient who developed compartment syndrome after urological surgery at our hospital. Material and Methods: A 64-year-old man underwent a 9-hour operation in the Trendelenburg position for a laparoscopic radical prostatectomy under general anesthesia. Pain and slight numbness in his right leg has observed in the operating day evening. NSAIDs were initiated and the patient was taken to the side limb elevation. Patient have been consulted on our Orthopaedical service on the 3rd day, upon that complaints continued increasingly for postoperative 1th and 2th days. Result: Arterial/venous Doppler ultrasonography, EMG and biochemical tests were performed immediately on patient with initial diagnosis of compartment syndrome. We diagnosed compartment syndrome as a result of imaging, tests and our physical examination and we observed complete foot drop. We performed an emergency fasciotomy to decompress the compartments of cruris. In the general anesthesia we carried out dermatofasciomy with opening lateral 30 cm, medial 15 cm skin and facia incision. The peripheral pulses of the right leg were examined with ultrasonography and observed that pulses were nonpalpable. 15 Sessions of hyperbaric oxygen therapy and physical treatment applied after surgery. Conclusion: Acute compartment syndrome can be prevented if adequate measures are taken, but after lengthy surgery, maximum alertness for emerging acute compartment syndrome remains indicated.

PP-15

Hemostasis with a bipolar sealer during surgery of lumbar spinal stenosis

Serkan Bilgiç, Şafak Ekinci, Murat Şengül, Osman Rodop

Gulhane Military Medical Academy, Istanbul, Turkey

Background: Spinal surgery is commonly associated with excessive blood loss. Perioperative bleeding is of particular concern during decompression and fusion with instrumentation of lumbar spinal stenosis, which often requires allogeneic transfusion. However, there are specific risks and limitations that often preclude the utilization of transfusions. The primary aim of this study was to evaluate the effectiveness of a radiofrequency-based bipolar hemostatic method of hemostasis consisting of hypotensive anesthesia, thrombin-soaked sponges, and intraoperative blood salvage our patients treated with a bipolar sealer (Aquamantys 2.3 Bipolar Sealer, Salient Surgical Technologies, Portsmouth, NH). Result: After using this procedure our operation time, blood loss and blood transfusions rate were reduced significantly in our institution. Blood loss was reduced by 54% after the using of the bipolar sealer. Conclusion: These findings suggest that the Aquamantys 2.3 bipolar sealer effectively supports hemostasis and reduces the need for transfusions during surgery of LSS.
PP-16
After radiotherapy developed Multiple Intestinal Arteria, Mega Ileum: Resection of Multiple Anastomosis without Stoma Treatment with Trans-Anatomical Silicone Stents
Alper Boz
Ortaca Yucelen Hospital, Muğla, Turkey

Background: Some unwanted irradiation of tumor treatment of abdominal and pelvic organs consists of side effects. Material and Methods: By our 37 years old patient 4 years ago terms to endometrial cancer was applied hysterectomy and the patient received chemotherapy and radiotherapy. Mega ileum could not be monitored because of the continuity of dense adhesions in the pelvic area. Dense brid ileums were separated. At 3 area of the small bowel resection was issued. Distal small bowel stump was closed. After the surgery on the 6th day improving of small bowel fistula and peritonitis statement the patient was taken to the surgery. The observation that shrinks dilated small bowel segments was opened in an area of serosal stitch and leakage was observed. Because the exploration of the small intestine becomes impossible to open by the patient at the jejunostomy any free bowel; before reparation of the leakage Anastomosis without Stoma Treatment was observed patient tolerance with intermittent drainage tube; on the 15th day by observation the oral nutrition tolerance of the patient continuity of passage the drain was removed. Result: At the clinic of ileum which most of the time can be left to the interpretation of the surgeon this technique savoir in multiple Anastomosis. Perhaps we can define as new method (BOZ TECHNIQUE). Conclusion: With this method instead of as used not from the Anastomosis proximal the difference is to issue from the distal to the small bowel decompression.

PP-17
Can morbidity and mortality in pancreatic surgery be predicted?
Yureka Caballero, Javier Larrea, Gabriel García-Plaza, Mercedes Cabrera, Antonio Navarro, José López, Juan Ramón Hernández
General Surgery Department. Complejo Hospitalario Universitario Insular-Materno Infantil de Gran Canaria, Las Palmas de Gran Canaria, Spain

Background: Pancreatic surgery involves high rates of morbidity and mortality. Material and Methods: A prospective study of 111 patients who had pancreatic surgery was performed. Data was collected for various scoring systems such as ASA, POSSUM and SAS scores. Complications were defined by the Clavien-Dindo system. Statistical analysis: T-student for comparative medias, Chi-square for proportions and ROC plots to evaluate the capacity of the scores described. Result: A total of 63 man and 48 women, average age of 63±13,08, were operated. Procedures performed included: Whipple's procedure, pylorus-preserving pancreaticoduodenectomy, Nakaos procedure, distal pancreatectomy (with or without splenectomy) and the modified Appleby procedure. 80 patients had one or more complication. Predictive capacity of scoring systems analysed obtained the following results: ASA χ²=1,69/ROC area=0,542; SAS scores χ²=0,645/ROC area=0,460; POSSUM score (patients with/without complications) 34,8±6,5 vs 31,7±6,00, p=0,28 / ROC area=0,673 (Physiological part: 17,32±4,0 vs 20,08±5,05, p=0,007; Operative part: 14,45±3,46 vs 14,71±4,52, p=0,773) Conclusion: ASA and SAS scores have failed in predicting pancreatic complications. POSSUM score obtained a statistical significant relation with complications due to the physiological data, not the operative. We believe that the association of the physiological data of the POSSUM score with a modified intraoperative score applied in pancreatic surgery can improve the prediction of morbidity and mortality.

PP-18
Collagen and Fibroblast Growth Factor Effects on Colon Anastomosis: An Experimental Study
Murat Çakır a, Sıddıka Fındık a, Ahmet Tekin a, Metin Belviranlı a, Mustafa Şahin b
a Necmettin Erbakan University Meram Medical School, Konya, Turkey, Konya, Turkey; b Selcuk University, Konya, Turkey

Background: Our aim is to accelerate the healing of the anastomosis. We use collagen and fibroblast growth factor (Chuang Fu Bi) use on the anastomosis. Material and Methods: The study was designed as an experimental animal study. Two groups were formed consisting of 14 adult Wistar albino rats. The first group was the control group and the experimental group was second. Approximately 5 cm proximal of ileocecal junction we resected 1 cm of colonic segments. Anastomosis was performed with 4/0 Vicryl suture and number of 8 place. The anastomosis group at least 2 cm proximal and distal boundary were covered with collagen fleece. Postoperative day 7, animals were sacrificed with an overdose of ketamine HCL. We resected 4 cm of proximal and 2 cm of distal anastomosis area. Explosion pressures, tissue hydroxyproline levels were measured. Histopathological examination of the evaluation: Inflammatory cells, necrosis, fibroblast activity, the amount of neovascularization and collagen were measured. Result: Burst pressure: Group 1 and Group 2 also made measurements found
PP-19
Laparoscopic pylorus preserving enbloc total pancreaticoduodenectomy for large main duct IPMN
M Fatih Can, Emin Lapsekili, Nazif Zeybek
Gulhane School of Medicine, Ankara, Turkey

Background: Enbloc total pancreatectomy without division of the pancreas from the neck is indicated to eliminate the risk of cutting through multifocal malignant tissues developing from main duct IPMN situated across the pancreas. This video demonstrates laparoscopic approach to enbloc total pancreatectomy we adopt in such situations. Material and Methods: Minimally invasive surgery video archive was searched to identify important steps of laparoscopic pylorus preserving enbloc total pancreaticoduodenectomy. The row video parts recorded during the procedure were used to create a final, illustrated enhanced video material. Result: The operation starts using six-port technique. The gastrocolic ligament is opened. The right gastroepiploic artery and vein is each divided between clips. The duodenum is fully Kocherized. The common hepatic artery, gastroduodenal artery (GDA) and the common bile duct (CBD) each is identified, and the duodenum is cut 2 cm below the pylorus. GDA is ligated and divided. Next, the jejunum is cut below the Treitz ligament which can be totally freed thereafter. The dissection over SMA and portal vein is completed. The gallbladder is separated from the liver bed using fundus down technique. After division of CBD, dissection is advanced along the inferior and superior borders of the pancreas. The pancreatic neck is not divided. The splenic artery, splenic vein and inferior mesenteric vein is ligated and divided, and the whole specimen is removed through an 8-cm right subcostal incision, which is then used for biliary and gastrointestinal reconstructions. Conclusion: The laparoscopic pylorus preserving enbloc total pancreaticoduodenectomy is a safe and feasible operation.

PP-20
Gallstone Ileus a Rare Condition of Bowel Obstruction with Controversial Surgical Treatment
Alexandru Chirca, Octavia Cristina Rusu, Mohsen Hasuna, Stefan Ilie Neagu, Radu Virgil Costea
Emergency University Hospital Bucharest, Bucharest, Romania

Background: Gallstone ileus is an uncommon entity, responsible for 1 to 4% of all presentations with small bowel obstruction, and almost up to 25% of all cases involving patients over 65 years of age. This condition is caused by the impaction of a gallstone in the ileum after being passed through a bilo-enteric fistula. The aim of our paper is to describe a rare case of an old patient with multiple comorbidities and such a condition in whom we performed open surgery. Material and Methods: We present the case of a 93-year-old female, with a history of arterial hypertension, atrial fibrillation, and chronic kidney disease, who presented at our emergency department with impaired health status, after 5 days of progressive epigastric pain with abdominal distention, nausea, and vomiting, symptoms of bowel obstruction, signs of sepsis with hemodynamic instability. Abdominal computed tomography showed pneumobilia intestinal obstruction and a jejunal foreign body. Result: Emergency exploratory laparotomy revealed an adhesion syndrome and after dissection a large biliary-enteric fistula and a large gallstone in the proximal-middle jejunum were observed. Enterolithotomy with stone extraction and enterorrhaphy was performed, followed by multiple peritoneal drainage. Conclusion: We choose to present this case to highlight that despite medical advances this condition has high rates of mortality and morbidity and its management remains controversial. Open surgery is widely used, followed by laparoscopy but controversy still persists primarily depending on its extent in the abdominal cavity.
Background: Negative pressure wound therapy (NPWT) is a frequently applied open abdomen (OA) treatment. There are only a few experimental data supporting this method. Authors introduce a porcine model for abdominal compartment syndrome (ACS) and OA therapy, describing the optimal settings of NPWT. Material and Methods: In this study (permission Nr. 13/2014/UDCAR) 27 Hungahib pigs (15.4-20.2 kg) were operated under general anaesthesia. The jugular vein and femoral artery were canulated, epicystostomy, tracheostomy were performed. A silastic bag was implanted in the abdomen through mini-laparotomy and filled with 2100-3300 ml saline solution (37°C) to an intraabdominal pressure (IAP) of 30 mmHg. Haemodynamic, haematological, enzymatological, and hemorheological parameters, urinary output, IAP, body temperature, microcirculation of abdominal organs were measured. After 3 hours, NPWT (Vivano Med® Abdominal Kit, Paul Hartmann AG, Germany) or Bogota bag was applied. NPWT group was divided into -50, -100 and 150 mmHg suction group. Pressure distribution to the abdominal cavity was monitored at 6 different points of the abdomen. Samples for bacteriological and histological examinations were taken. Result: All circulatory, respiratory and renal consequences of ACS developed. Based on hemorheological, hemodynamic and microcirculatory results, NPWT was superior to Bogota bag. The -100 mmHg NPWT provided the best results. Conclusion: The porcine model of the present study seems to be well applicable for investigating ACS and NPWT. It was possible to provide valuable for clinicians.

PP-23
Does Tartar Removal Affect the Physiological Parameters of Beagle Dogs in Long-Term Follow-Up Research?

Adám Deák a, Enikő Tóth b, Katalin Pető b, Norbert Németh a, Erzsébet Ványolos a, István Furka a, Irén Márkó b

a Department of Operative Techniques and Surgical Research, Institute of Surgery, Faculty of Medicine, Debrecen, Debrecen, Hungary; b Department of Operative Techniques and Surgical Research, Institute of Surgery, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

Background: Dental plaque is a biofilm of bacteria that grows on surfaces within the mouth. A form of hardened dental plaque is calculus or tartar. Tartar can cause gingivitis, which chronic form can drive to periodontitis. Several data show a clear statistical link between gum disease and heart disease in dogs. In our long-term follow-up splenic study we compared the effect of the splenectomy with different spleen-preserving techniques. To prevent periodontitis we have removed the calculi in dogs. The aim of our investigation was to detect the possible effect of tartar removing on physiological parameters. Material and Methods: 26 beagle dogs were involved in this study (Permission of experiment: Nr. 26/2011. UDCAW). Experimental groups: „C”-non-operated and „SH”-sham-operated control, „SE”-splenectomy, „AU10”- autotransplantation using Furka’s spleen-chip technique”, „R1/3” and „R2/3”- partial spleen resection by Furka’s method. The dental tartar was removed under anesthesia on 4th postoperative month, with UDS-K Ultrasonic-Piezo-Scaler. Animal’s mouth was rinsed with chlorhexidine. We performed a routine hematological investigation, body weight and body temperature was taken three weeks before and after intervention. Result: The tartar removal did not change the most important hematological parameters (WBC, NEUT, EOS, LYMPH, LAR) neither the body weight nor temperature in control animals. However in the different operated groups the physiological parameters may vary depending on the type of surgical procedure affecting the immunological state. Conclusion: In long-term follow-up research to improve the animal welfare and to prevent the possible complications, we warmly recommend the removing of dental tartar regularly. Grant: OTKA K-105618.
PP-24
Annoying Perianal Disease Benign Fibroepithelial Anal Polyps
Sabahattin Destek a, Vahıt Onur Gul b, Serkan Ahioglu b
a Via Hospital, Istanbul, Turkey; b Edremit Military Hospital, Balikesir, Turkey

Background: Surgical anal canal is 3 - 4 cm section with transition zone epithelium, cuboidal epithelium and squamous epithelium. It localizes between anal region and anorectal ring (puborectalis portion of the lower circular) Infection, inflammation, and developmental factors plays role in its Etiology. Usually malignancy doesn’t develops. Pain in the rectum, mucous leakage, bleeding, and itching are the most seen signs. In this paper our patients with FAP and features presented. Material and Methods: Patients diagnosed FAP in Surgical Endoscopy Unit were evaluated retrospectively between 2011 and 2015. Result: 305 patients was performed with lower gastrointestinal endoscopy and in 9 (2.9%) patients were detected FAP. 4 of the patients were male and 5 were female. Mean age 43 (age range 17-83), respectively. The main complaint is anal itching, pain, and sometimes bleeding. Five patients had a pathology with hemorrhoidal disease, four patients with chronic anal fissure, and one patient with anal fistula. 3 patients (37%) had hemorrhoidal disease, and four patients with chronic anal fistula. Patients were followed. Conclusion: Pathological examination revealed in all patients with FAP. Patients were followed. Conclusion: FAP can be found along with anal diseases such as anal fistula, chronic anal fissures and prolapsed hemorrhoids. Some studies reported that FAP is seen more commonly with Crohn’s disease. Usually FAP doesn’t turn to malignancy. Because of bleeding, itching recurrent pain and annoying discomfort, it is necessary to excision of them with surgery.

PP-25
Rare Type Cranial Postauricular Pilonidal Sinus
Sabahattin Destek a, Vahıt Onur Gul b, Serkan Ahioglu b
a Via Hospital, Istanbul, Turkey; b Edremit Military Hospital, Balikesir, Turkey

Background: Pilonidal sinus (PS) is seen most often in areas with sacrococcygeal area. Although it can also be seen rarely different regions of body as at umbilicus, axilla, neck, fingers and scalp PS case reported on the scalp for the first time in 1972 by Dr. Moyers. Congenital and acquired causes were accused in the etiology. It is thought to have developed mainly hormonal predisposition, increased hair density under the influence of acquired factors such as local microtrauma and infections. But in the long term due to congenital case considered unexplained reasons. Material and Methods: This presentation was reported as an unusual phenomenon in a case with cranial scalp PS. Result: Forty-six-year-old male patient who had a growing swelling of the scalp behind the left ear since childhood was admitted to our clinic. At examination; 5x3x2 cm in diameter, well-circumscribed, painless soft mass was detected under the scalp on the left postauricular area. It was remarkable in the history of the child had shock trauma in that region with a stone. There was no defect in the left temporal bone cranial X-ray structure. After local anesthesia mass was excised with capsule. Postoperative complications were not observed. Pilonidal sinus was diagnosed histologically. Conclusion: PS may remain unnoticed for years as may present with an acute abscess. Although it is rare except sacrococcygeal area, can be seen in the other at unusual regions of body such as the scalp. In the differential diagnosis of cranial scalp lesions, PS should be kept in mind and diagnosis should be confirmed by histopathological examination.

PP-26
Reflux esophagitis and esophageal squamous polyp association
Sabahattin Destek a, Vahıt Onur Gul b, Serkan Ahioglu b
a Via Hospital, Istanbul, Turkey; b Edremit Military Hospital, Balikesir, Turkey

Background: The prevalence of esophageal squamous cell polyp has been reported 0.01% - 0.45% at biopsy and endoscopy series. Usually in endoscopy, polypoid lesions appear as white or pink lesions and they often localized at the distal esophagus. Human papillomavirus (HPV) infection was suggested that the result and process of gastroesophageal reflux disease (GERD) has suggested that depending on the result of chronic inflammation. It is often coexist with GERD. Usually in endoscopy, polypoid lesions appear as white or pink lesions and they often localized at the distal esophagus. Material and Methods: It has been reported to be correlated with esophageal carcinoma in various publications. Our esophageal polyp case was presented in this presentation. Result: Esophageal endoscopy applied 42-year-old male patient with an intermittent epigastric pain for a year. Endoscopy showed 1 cm diameter polypoid lesion from 30 cm distal from patient’s teeth, Los Angeles stage B reflux esophagitis, 3 cm in diameter, stage IV Type II hiatal hernia and Helicobacter pylori (+) infection with chronic gastritis. It was made esophageal polypectomy with snare. The colonoscopy showed no pathology. Pathologic examination showed benign esophageal squamous polyp with active inflammation and ulceration. Patient was followed. Conclusion: Esophageal polyps are detected incidentally during endoscopic examination. The most common symptoms are dyspepsia and retrosternal burning. It is recommended that remove polyps immediately when detected because of potential for malignancy risk. In the presence of reflux esophagitis that can lead to various complications as the polyps mucosa ulcerations of esophageal ulceration and so metaplasia.
PP-27  
**Neck dissection for node-positive head and neck cutaneous malignant melanoma**  
Kai Yuen Wong, Christopher Deutsch, Richard Price, Amer Durrani  
Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

**Background:** There are no specific guidelines for the level and extent of cervical lymph node surgery in the management of cutaneous head and neck malignant melanomas. The reported risk of locoregional recurrence is 16-32% despite comprehensive neck surgery. We present the outcomes of ND for node-positive cutaneous head and neck melanoma at a single tertiary hospital. **Material and Methods:** All patients (2004-2012) who had a ND for cutaneous head and neck malignant melanoma were identified for analysis. Outcomes including disease free and overall survival were retrospectively correlated with patient demographics, ND level, histology and use of adjuvant therapy. Sentinel lymph node biopsy has been available at our hospital since 2011. **Result:** 32 NDs were evaluated (16 modified radical NDs, 14 selective NDs, 2 radical NDs) in 30 patients with a mean age of 62 years (range 45-82; 83% male). Breslow thickness was <1mm in 3 patients, 1-4mm in 14 patients and >4mm in 13 patients. Locoregional recurrence occurred in 12 patients (40%) on average 8 months after ND. In 53% of patients, a higher number of positive metastatic lymph nodes were detected than preoperatively. Radiotherapy was given as adjuvant treatment in 8 patients (27%) but was not associated with improved regional control. The 5-year disease free and overall survival was 59% and 57% respectively. **Conclusion:** Positive cutaneous head and neck malignant melanoma patients often have a higher burden of involved lymph nodes histologically than can be detected preoperatively. Novel adjuvant therapies may affect the number of patients who proceed to lymph node dissection in the future.

PP-28  
**Recurrent retroperitoneal sarcoma**  
Jakub Dítě, Jiří Froněk  
Institute for Clinical and Experimental Medicine, Prague, Czech Republic

**Background:** Retroperitoneal sarcomas are rare malignant neoplasms that are often diagnosed late because of their typically nonspecific symptomatology. Radical surgical resection, if possible due to local anatomical conditions, is the most important treatment modality. However, even if such surgery is possible and successfully performed, the prognosis of retroperitoneal sarcoma is not good. The most frequent type of recurrence is local recurrence and even in such case, radical surgical resection remains the most important treatment modality. **Material and Methods:** Here we present a case report of a patient with a retroperitoneal leiomyosarcoma that was radically (R0) removed in our department. Two years later a local recurrence had developed that had to be diagnosed first and then treated. **Result:** The recurrence was eventually diagnosed by MRI and was again solved by a radical (R0) surgical resection (because of tumor invasion into inferior caval vein, the vein had to be partially resected as well and substituted by a vascular prosthesis). **Conclusion:** The report describes a relatively typical case of retroperitoneal sarcoma, while pointing out the importance of timely diagnosis (which is definitely not easy to achieve) and especially radical surgical treatment.

PP-29  
**An Alternative Surgical Technique for Sacrococcygeal Pilonidal Sinus Disease: Mutaľ’s Triangular Closure**  
Mustafa Tannrezev a, Eyüp Duran b, Zafer Kilbas c, Mehmet İnce d, Yakup Cil d, Orhan Kozak d, Mehmet Ozdemir a  
**a** Diyarbakir Military Hospital, Department of General Surgery, Diyarbakir, Turkey; **b** Balikesir Military Hospital, Department of General Surgery, Balikesir, Turkey; **c** Gulhane School of Medicine, Department of General Surgery, Ankara, Turkey; **d** Etimesgut Military Hospital, Department of Plastic and Reconstructive Surgery, Ankara, Turkey

**Background:** Sacrococcygeal pilonidal sinus diseases (SPSD) can be excised and closed by primar sutures simply. However, the optimal treatment procedure for large defects of pilonidal sinus surgery, especially those with complicated is an interesting issue. In this study we present an alternative surgical procedure which has been put in practice successfully for the myelomeningocele and hidradenitis suppurativa of the sacrococcygeal region, also can be used for the closure of large fasciocutaneous defects in SPSD. **Material and Methods:** In this procedure, skin and subcutaneous tissues related with pilonidal sinus disease were removed totally in a triangular shape. Then, the triangular defect is closed by transposition of 2 skin flaps designed in a z-plasty manner. We aimed to remove as little as possible healthy tissue by using the triangular shape. **Result:** A tension-free single stage closure was achieved in all patients. There was minimal wound dehiscence in two patients, and tip ischemia in one patient. The other patients healed with no complication. There was no patient with infection. A mean follow-up for 15 months (7-21 months) revealed no recurrence of pilonidal sinus disease seen. All patients didn’t require additional surgery. **Conclusion:** Triangular closure technique enables the surgeon to achieve a tension-free defect closure of large sacrococcygeal defects of SPSD. We can borrow tissue for the defect from multiple directions (vertical, oblique, transvers) in triangular closure technique. We think that tri-
angular excision protects more healthy tissue and this closure technique seems to be, easy to learn and feasible in practice for SPSD.

**PP-30**  
**Familial Adenomatous Polyposis with Invasive Cancer: Where do Polyps more often turn into Cancer?**  
Eyup Duran a, Nail Eroz b, Mustafa Tahir Ozer b, Mehmet Fatih Can a, Sezai Demirbas b  

a Department of General Surgery, Balikesir Military Hospital, Balikesir, Turkey; b Department of General Surgery, Gulhane Military Medical Academy, Ankara, Turkey

Background: Familial adenomatous polyposis (FAP) is well known as development of polyposis in the colon and rectum. Polyps can develop into colon and rectum cancer. The aim of this study is to evaluate where these polyps more often turn into cancer. Material and Methods: The study included 15 FAP patients with invasive colorectal cancer, who presented between 2000 and 2013. Clinicopathologic features and cancer localization were analyzed. Result: Cancer was found in 15 colectomy specimens. Most patients were male (66%) and the mean patient age was 51.9 (33-71 years). Based on the histopathological findings, the ratio of T1/T2/T3/T4 was 3/2/6/4, respectively. Lymph node metastases were found in 5 patients and no distant metastases were found. 4 patients experienced recurrence. Most malignant polyps were located in rectum (46%) and sigmoid colon (26%). Conclusion: The high risk of cancer was observed in rectum and sigmoid colon. We suggest proctocolectomy and all polyps, especially on rectum and sigmoid colon, should be carefully examined histopathologically.

**PP-31**  
**New biomarkers in the diagnosis of acute mesenteric ischemia**  
Eyup Duran a, Mustafa Tanrseven b, Mehmet Ince c, Zafer Kilbas c  

a Department of General Surgery, Balikesir Military Hospital, Balikesir, Turkey; b Department of General Surgery, Diyarbakır, Turkey; c Department of General Surgery, Gulhane Military Medical Academy, Ankara, Turkey

Background: Clinical diagnosis of acute mesenteric ischemia is often diagnosed late. Despite various clinical and laboratory parameters have been assayed for diagnosis, the mortality rate remains high. The only solution is to diagnosis as early as possible. The aim of this study is to review new biomarkers for early diagnosis of acute mesenteric ischemia. Material and Methods: The PubMed database was searched for the following terms: acute mesenteric ischemia and diagnosis. All papers cited until January 2005 were reviewed. Result: 9 animal and 6 human studies were included. Plasma markers such as D-dimer (4 studies), procalcitonin (2 studies), L and D-lactate, ischemia-modified albumin, intestinal fatty-acid binding protein (I-FABP), plasma C-type natriuretic peptide, serum omentin, visfatin, phosphorus, plasminogen activity and C-reactive protein levels have been tested. Haematological parameters such as mean platelet volume, neutrophil/lymphosite ratio, platelet/lymphosite ratio, lymphosite, red cell distribution width levels have been tested. Conclusion: There is still no specific marker for early diagnosis of acute mesenteric ischemia. The results about new biomarkers should be checked by clinical series.

**PP-32**  
**Is Faecal Calprotectin Being Used Appropriately by Clinicians?**  
Mahmuda Khan, Jonathan Easow, Jordan Palmer, Timothy Bullen  

University Hospital North Midlands, Stoke-on-Trent, United Kingdom

Background: Faecal calprotectin (FC) is released from degraded neutrophils in the intestines and associated with intestinal inflammation. In 2013 NICE recommended FC to support clinicians diagnosing inflammatory bowel disease (IBD) or irritable bowel syndrome (IBS) in patients with recent lower GI symptoms and in who cancer is not suspected. We assessed if testing FC levels followed this guidance at our trust. Material and Methods: A retrospective case note review of 159 patients (58 M: 101 F; aged 3 to 84, median 41 years) who had FCs requested by clinicians at North Midlands University Hospital between January and April 2015. Result: Twenty-one patients were excluded due to inadequate information (n=138). Indications for FC were: IBD monitoring in 53 cases and diagnostic in 85 cases. Eighteen patients (21%) having diagnostic FC’s were over 60 years and 13 had subsequent GI investigations. Twenty-eight (42%) patients under 60 years had a normal FC level; 7 also had a colonoscopy. These patients were subsequently diagnosed with IBS, diverticular disease or pancreatic insufficiency. Conclusion: FC levels are poorly understood by some clinicians. We feel twenty-five (29%) diagnostic FCs at our trust have been tested unnecessarily and is an inefficient use of resources.
PP-33
How adequate is timing of the consenting process for surgery? Patient survey evaluation of the current practice
Mohammad Eddama, Engin Akyol, Leyte Lorente, Richard Cohen
University College London Hospital, London, United Kingdom

Background: This audit aimed to evaluate and improve the timing of the consenting process at our centre. Material and Methods: A retrospective analysis of the timing of the consenting process from patients’ notes was completed for 32 patients undergoing minor, moderate and major surgery. Patients completed a validated questionnaire to verify documented information as well as assess their satisfaction and preference for the timing of the consenting process. Result: Patients undergoing major surgery (n=18) were significantly (p<0.01) older (mean=65, SD=11) than patients undergoing moderate (n=14), (mean=43, SD=19) or minor surgery (n=4), (mean=40, SD=14). All clinic letters issued when surgery was offered stated the name of the procedure and that risks and benefits were discussed. Timing of the written consenting process of patients undergoing major surgery demonstrated that 7 (39%) patients were consented in the clinic and 11 (61%) were consented on the day of surgery. Furthermore, patients preferred to be consented in advance of the operation date X2 (1) =21.3, OR=24.9, p<0.0001. Difficulties in maintaining paper notes has been identified as the main reason why the consenting process is not always completed in advance. Conclusion: Consenting process is best completed in advance of surgery; the use of electronic resources may encourage this practice, which is currently being developed at our centre.

PP-34
A Rare Cause of Abdominal Pain: Abdominal Wall Endometriosis
Sinan Akay, M. Suphi Turgut, Sami Eksert
Sirnak Military Hospital, Sirnak, Turkey

Background: Endometriosis is characterised by the presence of normal endometrial tissue outside the uterine cavity. Abdominal wall endometriosis is the most common location of extrapelvic endometriosis and usually occurs after cesarean section. In the current paper, we aimed to present clinical and ultrasonographic features of an endometrial implant located at anterior abdominal wall in a case with left lower quadrant pain for 3 years. Material and Methods: A 28-year-old female was admitted to our hospital with a history of left sided abdominal pain for 3 years that has started after her last C-Section. She had a history of totally 4 C-Sections. The pain was related to her menstrual periods. Result: On physical examination, left sided paramedian abdominal pain with palpation and rebound tenderness at that area were observed. Ultrasonography (US) was planned for the further evaluation. On US, a 25*17 mm-sized, hypoechoic-heterogenous, solid lesion with ill-defined borders located in the left rectus abdominis muscle was seen. On Color Doppler US, internal vascularization was detected in the lesion. Due to the classic ultrasonographic appearance, the relationship between the pain and menstrual periods, and history of C-Sections, we considered abdominal wall endometriosis as the primary diagnosis. The patient referred to gynecology department for the treatment. Conclusion: Abdominal wall endometriosis is a rare pathology that may complicate the clinical scene in female patients with abdominal pain. This entity should always be kept in mind in patients with an abdominal wall mass near a cesarean section scar and the classical history of cyclical pain.

PP-35
Story of a Lucky Man and Tired AK-47 Bullet: Atypical gunshot injury to the anterior region of neck
Mehmet Burak Asik a, Arif Selcuk b, Sinan Akay a, Sami Eksert a, Kenan Keklikci a
a Sirnak Military Hospital, Sirnak, Turkey; b GATA Haydarpasa Research and Training Hospital, Istanbul, Turkey

Background: Gunshot injuries of the head and neck from the AK-47 rifle (a common assault rifle) are a significant contributor to morbidity and mortality among army combatants. They may cause significant damage to the closely arranged structures in head and neck and the bullet’s trajectory can be very difficult to determine regarding to its small scale structure. We present an unusual case of gunshot injury with an atypical tired bullet entry wound, profound injury to the neck, lodgment between the right carotid artery and trachea. Material and Methods: A 38-year-old male combatant was referred to the Level 1 trauma hospital having simple gunshot injury to the neck due to an AK-47 rifle. The gunshot injury was to the anterior side of his neck with a 1-cm diameter ragged entry wound and no exit wound. Result: Prior basic wound care and radiological imaging showed lodgment of the bullet in his neck, between trachea and common carotid artery at the level of first and second thoracic vertebrae. Standard debridement of his wound was done. The ‘wandering’ bullet was successfully removed surgically. A tracheal defect was determined between the anterior part of fifth and seventh tracheal cartilages. Conclusion: AK-47 rifle bullet injuries may present with characteristically small entry wounds and cause complex structural injuries at the area of impact. The consequent trajectory is difficult to predict and making regional examination and radiological investigations are essential in management. Securing the airway, controlling hemorrhage and identifying other injuries are the first vital steps.
PP-36
The Efficiency of Instant Messaging Application in Coordination of Emergency Calls for Combat Injuries: A Pilot Study

Sami Eksert, M. Burak Asik, Sinan Akay, F. Nuri Aydin, Kenan Kekikci, Mehmet Coban, Ali Kantemir, Onur Gungor, Beyazit Garip, M. Suphi Turgut, Kenan Olcay
Sırnak Military Hospital, Sırnak, Turkey

Background: Coordination of emergency response team is an important determinant of prompt treatment of combat injuries. We hypothesized that instant messaging applications can be used as a proper tool for notification of emergency response team members. Our aim was to investigate the efficiency of a commercial instant messaging application as a communication tool for the emergency team in a Level-I Trauma Center. Material and Methods: We have retrospectively evaluated the messages in the instant messaging application group which was formed to coordinate response to patients suffered from combat injuries transported to our hospital via helicopter during an eight-week period. The response times, and the differences in the response times of the doctors, nurses and technicians to the initial message sent by the team leader and contained the information regarding the patients were evaluated. Result: A total of 510 emergency call messages pertaining to 17 combat injury were logged. Median time of response times were 4.1 minutes, 6 minutes, and 5.3 minutes, for doctors, nurses and the other team members, respectively. The differences in these response times between the groups were statistically significant (p=0.03), with subgroup analyses revealing significant differences between the doctors and the nurses (p=0.038). From the team leaders’ perspective, use of this application has resulted in reduction in the workload of nurses and the other team members, respectively. The difference in response times between the doctors and the nurses (p=0.038). From the team leaders’ perspective, use of this application has resulted in reduction in the workload of nurses and the other team members, respectively. The difference in response times between the doctors and the nurses (p=0.038). From the team leaders’ perspective, use of this application has resulted in reduction in the workload of nurses and the other team members, respectively.

Conclusion: Instant messaging applications for smartphones can be an efficient, easy to operate, and time-saving communication tool for the transfer of medical information and the coordination of emergency response team members in hospitals.

PP-37
Circulating tumor cells (CTCs) – new oncomarker in colorectal carcinoma (CRC)

Petra Eliasova a, b, Katarína Kolostova b, Anna Jakabova b, Michael Pinkas b, Eliska Pospíšilova b, Vladimír Bobek b, Robert Gurlič a
a Department of Surgery, University Hospital Kralovske Vinohrady, Prague, Czech Republic; b Department of Laboratory Genetics, University Hospital Kralovske Vinohrady, Prague, Czech Republic

Background: Circulating tumor cells (CTCs) are responsible for the development of metastatic disease, and may also hold the key to determining tailored therapies of advanced cancer disease in colorectal carcinoma (CRC). Material and Methods: In total, 72 patients with CRC, 49 candidates for surgery and 23 participants of monitoring during endoscopic controls after surgery, were enrolled in the study between July 2013–October 2015. Peripheral blood samples were collected peri- and postoperatively. Detection of CTCs were based on the combination of the cytomorphological characterization and gene expression analysis. Gene expression of tumor associated genes (KRT7, KRT18, KRT19, KRT20, EpCAM, MUC1, EGFR, CHGA) and white blood cell markers (CD45, CD68) was analyzed in CTCs. The molecular analysis was completed by determination of chemoresistance-associated genes expression (ERCC1, MDR1, MRP1-7) and mutational analysis for K-RAS gene in CTCs. Result: Both, the evaluation of CTCs presence and analysis of chemoresistance genes expression in CTCs were correlated with clinical status of disease (localization tumor, TNM classification, stage, grade, extent surgery). CTCs were detected in 55% (27/49) of tested patients, with 74% positivity in metastatic vs. 44% non-metastatic patients. We detected CTC in 40.9% (9/23) patients of endoscopic controls. The presence of CTC is highly individual, but for patients at increased risk (eg. N1) CTC appeared already 3-6 months after surgery. Conclusion: We may hypothesize that CTC-positivity reflects the metastatic and local recurrence process after correlation analysis of clinical disease criteria and CTC-presence.

PP-38
Immunohistochemical Assessment of hENT1 Biomarker as a Predictor of Gemcitabine-Based Adjuvant Chemotherapy for Resected Pancreatic Ductal Adenocarcinoma: A Systematic Review and Meta-Analysis

Nicholas Bird, Mohamed Elmasry, Mohammed Elniel, Michael Kelly, Stephen Fenwick, Hassan Malik
UHA, Liverpool, United Kingdom

Background: Research has inferred that the abundance of hENT1 transporters in resected pancreatic ductal adenocarcinoma (PDAC) is a prognostic biomarker of adjuvant chemotherapy. The aim of this meta-analysis and systematic review is to assess if hENT1 abundance, as determined by immunohistochemistry, is a prognostic marker of subsequent treatment with Gemcitabine-based adjuvant chemotherapy. Material and Methods: The authors systematically identified articles pertaining to hENT1 immunohistochemical analysis in resected PDAC specimens from patients who subsequently underwent adjuvant Gemcitabine-based chemotherapy. Eligible studies had to contain survival analysis statistics, reporting specifically Overall Survival (OS) and Disease Free Survival (DFS) with associated Hazard Ratios (HR’s) stratified by hENT1 status. Potential sources of inter-study heterogeneity were identified and accounted for in the statistical meta-analysis by use of a Random-Effects
model to produce Forest Plots. Result: Of 40 received articles, 8 were deemed suitable for review, with a total population of 1223 patients under statistical meta-analysis. Immunohistochemically detected hENT1 abundance is found to be significantly associated with both DFS (0.45 [95% CI 0.34-0.6]), p=0.00001) and OS (0.45 [95% CI 0.33-0.62]), p=0.00001). Conclusion: This novel meta-analysis demonstrates empirical evidence that hENT1 abundance is a valid predictor of response for patients undergoing adjuvant Gemcitabine-based chemotherapy. The hENT1 biomarker should be used to stratify patients into appropriate adjuvant chemotherapeutic regimens to improve outcomes and reduce unnecessary exposure to inefficacious treatments for patients determined to be hENT1-ve.

PP-39
Post-operative administration of aspirin in patients undergoing coronary artery bypass surgery: A single centre review

Klaire Exarchou a, Helen Bermingham b, Deborah Harrington b

a Liverpool Heart and Chest Hospital, Liverpool, United Kingdom; b Liverpool Heart and Chest Hospital, Liverpool, United Kingdom

Background: To review the practice of post-operative antplatelet therapy in a tertiary cardiothoracic centre. The post-operative use of antplatelet and anticoagulation therapy has been shown to improve the patency rate of saphenous vein grafts and to reduce the incidence of thromboembolic events. Current guidelines of the European Association for Cardio-Thoracic Surgery (EACTS) support the early use of aspirin post coronary artery bypass surgery (CABG). Material and Methods: A retrospective audit of all patients undergoing CABG only was undertaken between June-July 2014. Data was entered in an Excel spreadsheet and statistical analysis was performed using the Fishers exact test. Result: 100 patients were identified, 87 were male and median age 66 years old. Mean number of bypass grafts was 3.12. Aspirin was given to 31% of patients and only 12% overall received this within 6 hours. 9 patients were re-operated on for bleeding. There was no statistically significant difference between those who were administered aspirin and those who were not (p=0.240). Conclusion: The post-operative administration of aspirin does not increase the risk of post-operative bleeding and return to theatre. The EACTS guidelines were poorly adhered to and wide variation in practice within the Trust was noted.

PP-40
Direct intraperitoneal resuscitation with lidocaine, methylene blue and pentoxiphylline combination does not decreases inflammation after intestinal ischemia-reperfusion injury in rats

Marco Gandini a, Simona Cerri b, Paola Pregel b, Gessica Giusto a, Cristina Vercelli a, Vittorio Caramello c, Selina Iussich a, Massimiliano Tursi a, Anna Maria Farca a

a Department of Veterinary Sciences, University of Turin, Grugliasco (TO), Italy; b Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Liege, Liege, Belgium

Background: Ischemic and reperfusion (I/R) injuries are recognized after stroke, myocardial infarction, transplant, trauma and intestinal strangulation. IR tissue damage mechanism is not completely understood, but it was suggested that the oxidative stress leads to inflammatory mediators release, leukocytes activation, apoptosis and necrosis. Previous studies tried to decrease IR tissue damage using many drugs and substances. The aim of the study was to evaluate the effects of an intraperitoneal solution of methylene blue, lidocaine and pentoxiphylline on intestinal I/R injury. Material and Methods: Superior mesenteric artery was isolated and clamped in 36 adult male Sprague Dawley rats. After 60 minutes, clamp was removed and a group received intraperitoneally UNIITO solution (PTX 25mg/kg + lidocaine 5mg/kg + MB 2mg/kg), while the other group was treated with warm 0.9% NaCl solution. Rats were euthanized 45 min after drug administration. Lung and bowel were collected and clamped in 36 adult male Sprague Dawley rats. After 60 minutes, clamp was removed and a group received intraperitoneally UNIITO solution (PTX 25mg/kg + lidocaine 5mg/kg + MB 2mg/kg), while the other group was treated with warm 0.9% NaCl solution. Rats were euthanized 45 min after drug administration. Lung and bowel were collected and evaluated for histological evaluation (using Park’s score) and determination of MPO and MDA levels. Result: Control samples showed lymphoplasmocytic infiltrate and crypt necrosis of villi. MPO and MDA measurements shown no differences between treated and control groups. Conclusion: The combination of lidocaine, methylene blue and pentoxiphylline administered intraperitoneally at the studied dose, did not decreased histological lesion scores and biochemical markers levels in intestinal ischemia/reperfusion injury.
Background: Novel honey-based membranes have been developed and characterized as a medical device. In this study, a novel, simple and fast method to produce pectin-honey wound dressings is described. An ideal wound dressing is yet to be developed. Ideally, a wound dressing should protect the wound from foreign microbes, and have shape-conformability, biocompatibility, and antibacterial activity. 

Material and Methods: The properties of these honey-based membranes were systematically investigated with respect to physical and chemical parameters, including swelling ability, water vapor transmission rate, hydrogen peroxide production, methylglyoxal content and antibacterial activity. Furthermore, these membranes were assessed for cytocompatibility by performing a proliferation study using cultured fibroblast cells. Result: The new membranes may be used as wound dressings as they have a good WVTR and fluid uptake and have no proven cytotoxicity to fibroblasts. The membranes demonstrate good antibacterial activity toward clinically relevant pathogenic microorganisms such as S. aureus and E. coli. Conclusion: In conclusion, the honey-based membranes can be applied as a medical device for fabrication of wound dressings. The presence of a natural active component, conformability, and complete resorbability are the characteristics of this new biocompatible biomaterial that respects the pathophysiology of wounds, improves healing, and does not cause pain upon removal. Furthermore, the production of these device is extremely simple and inexpensive.

PP-42
Anesthetic Management of a Patient with Situs Inversus Totalis
Zafer Güçlü, Sükrü Tekindur, Fatih Şimşek, Serkan Şenkal, Mehmet Burak Eşkin
Gulhane Military Medical Academy Department of Anesthesiology & Reanimation, Ankara, Turkey

Background: Situs inversus totalis is a congenital morphological anomaly characterized by transposition of all internal viscera. Because of this anatomical differences, we aimed to present the anesthetic evaluation of this case. Material and Methods: A 31-year-old, ASA II, female was scheduled for an excision of cystic mass lesion in the left breast. On pre anesthetic visit we found out that patient was diagnosed situs inversus at 4 years old by an examination of cardiac beats. She had levothyroxin for hypothyroidis and she had not any operation before. Chest x-ray showed us cardiac shadow on the right side is called dextrocardia as well as 12 lead electrocardiography (ECG) displayed marked right axis deviation with negative p wave in lead aVL and I, with reverse lead placement showing no abnormality. Fundal gas shadow on the right side and the left hemi diaphragm to be raised are all evidences of the internal organs positioned in the mirror image. Result: In the operation theatre standard anesthetic monitorization was applied just a difference of the opposite placed ECG electrodes. Operation and anesthesia was completed uneventfully. Conclusion: Situs inversus totalis is seen either as a part of a syndromic cases or without any disease. On pre anesthetic evaluation cardiovascular and pulmonary system are especially examined. Mainstem intubation can occur on left side and should be kept in mind while intubating the trachea. For the right image of ECG, electrodes should be placed in reverse manner. Detection and documentation of situs inversus is important to prevent inadvertent future surgical mishap.

PP-43
Uvular Necrosis Following Double Lumen Endotracheal Tube
Zafer Güçlü, Muhammed Tekin, Mehmet Emin Ince, Serkan Şenkal, Mehmet Burak Eşkin, Mehmet Emin Orhan
Gulhane Military Medical Academy Department of Anesthesiology & Reanimation, Ankara, Turkey

Background: Sore throat after general anesthesia is a frequent complication but uvula necrosis which is one of the reasons of sore throat is an unusual complication encountered rarely. In the literature, uvula necrosis has been reported attributed to the endotracheal tube, laryngeal mask and shaft of the endoscopes. So, we aimed to present uvula necrosis in a patient who had intubated with a double-lumen endotracheal tube. Material and Methods: An emergency operation was planned by thoracic surgeons for an 18 year-old, 59 kg, 183 cm, ASA1E male patient which had have spontaneous pneumothorax. In physical examination of the patient, no upper airway infection and any morphologic abnormality with the exception of the longer uvula was determined in the epipharynx. After ensuring adequate muscle relaxation, endotracheal intubation was performed with a 37 french, left-sided double-lumen tube under direct laryngoscopy and the tube was fixed in the midline. The operation taking 1 hour was completed without any problem and the patient was extubated uneventfully after decurar-
sation. **Result:** In operation day's evening, the patient presented with severe sore throat and foreign body sensation while swallowing. In his examination, it was seen that uvula was elongated and red. Analgesic and anti-inflammatory treatment was administered. On 3rd postoperative day white demarcation line was detected. On 7th postoperative day necrotic part of uvula was separated and swallowed. **Conclusion:** The most frequent complication of endotracheal intubation is postoperative sore throat and sometimes it can cause rare, but severe complications like uvula necrosis. It keeps in mind that if the sore throat is prolonged.

---

**PP-44**

Is there a relationship between the high velocity projectile pathways and abdominal vascular injury

**Sahin Kaymak, Aytekin Ünlü, Rahman Senocak, Oguz Hancerliogullari, Nazif Zeybek**

Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Penetrating abdominal trauma can be life threatening because intra-abdominal organs can bleed profusely especially the retroperitoneum may hold a large amount of blood. We studied trajectory pathways and their relationship with the occurrence of vascular injuries. **Material and Methods:** Ninety seven military casualties with high velocity misilse related penetrating abdominal injuries were reviewed retrospectively. Data comprised age, gender, type of wounding mechanism, entrance and exit wounds, associated abdominal organ injuries, vascular injuries, surgical interventions. Trajectories were assigned as anterior-posterior and tranverse-oblique according to the entrance and exit wounds. **Result:** Of 97 casualties, 95 (98%) were male and the mean age was 23. Only 2 patients were managed non-operatively and 95 patients underwent urgent laparotomies due to hemodynamic instability. Nineteen (20%) patients had concomitant vascular injuries. In seven patients with transverse-oblique trajectories had inflicted 2 iliac artery, 1 iliac vein, 1 abdominal aorta, 1 middle colic artery, 1 splenic artery, 1 renal vein injuries and 2 retroperitoneal hematomas. In 12 patients with anterior-posterior trajectories, 7 retroperitoneal hematomas, 4 inferior caval vein, 1 splenic artery and 1 abdominal aorta injuries were found intraoperatively (Table 1). Non-expanding posterior projectile pathways and abdominal vascular injuries were treated primarily. Two patients with splenic artery injuries and 1 patient with renal injury underwent spleenectomies and nephrectomy, respectively. Injury to the middle colic artery was managed by ligation of the artery. **Conclusion:** Major vascular injuries in casualties with anterior-posterior projectile trajectories seems to be more frequent than the transverse-oblique injuries.

---

**PP-45**

Early postoperative stoma complications after stoma surgery

**Sho Haneda, Ken-Ichi Takahashi, Fumito Sajio, Naoki Matsumura, Ryohei Nomura, Mitsuhashi Muto, Akihiro Yasimoto, Takehide Tajima, Hirokatsu Chitose, Yasushi Mochizuki, Kaoru Sato, Takashi Toshima, Mi Shibahara, Yu Katayose, Hiromi Tokumura**

Tohoku Rosai Hospital, Sendai, Japan

**Background:** Stoma complications occasionally occur after stoma formation and it affect directly to the QOL of the patients. However, there are few reports reviewed for the rate and the severity of early post-operative stoma complications. Aim of this study was to investigate the rate and the severity of early post-operative stoma complications. **Material and Methods:** A prospective study who underwent surgery for stoma construction in Tohoku Rosai Hospital were carried out over a seven-month period between June and December 2015. The rate and the severity of the early post-operative stoma complications (within 30 post-operative days) were investigated. Severity of the complications were assessed by grade classification system modified from CTCAE (grade 1-4), proposed from The Japan Society of Coloproctology. **Result:** Total 37 patients (23 men, 14 women) underwent stoma surgery. Median age was 61 (18-92). Primary disease was colorectal cancer in 19 (51.4%), ulcerative colitis in 12 (32.4%), and others in 6 (16.2%). Ileostomy was constructed in 20 (54.1%), and colostomy was in 17 (45.9%). Early post-operative stoma complications occurred in 6 cases (16.2%). Mucocutaneous dehiscence in 3 (8.1%), parastomal hernia in 3 (8.1%), retraction in 2 (5.4%), fistula in 1 (2.7%), and stoma site infection in 1 (2.7%). Grade of the complications were under 2 in all the cases and no surgical therapy were necessary in each cases. **Conclusion:** Short-term results of our surgical therapy for stoma construction were considered satisfactory.

---

**PP-46**

Percutaneous Needle Decompression of the Colon before Surgery for Sigmoid Volvulus: A Case Report

**Anwar Hussain, K Charan, H Mohammad, M Hershman, Muhammad Saad Azhar**

Royal Stoke University Hospital, Stoke-on-Trent, United Kingdom

**Background:** Sigmoid volvulus (SV) is a common cause of bowel obstruction in the elderly, institutionalised and debilitated. The first-line treatment is untwisting with flexible sigmoidoscopy. We report an interesting case of SV where a patient went into peri-arrest after attempted decompression with flexible sigmoidoscopy. We did a simple manoeuvre of percutaneous needle decompression (PND) of distended bowel to reduce patient's intra abdominal pressure and...
before going for surgery. **Material and Methods:** A 70-year-old man admitted with SV and no systemic signs of sepsis. Initially managed with rigid sigmoidoscopy and flatus tube. Went on to have flexible sigmoidoscopy and decompression. Procedure abandoned because patient complained of excruciating abdominal pain and collapsed. Patient's blood pressure and conscious level did not improve with intravenous fluids and oxygen. Result: PND of sigmoid colon done to reduce the intra-abdominal pressure and increase the venous return using two 16G cannulae. Patients haemodynamics improved with this manoeuvre. At laparotomy later there was no intra-abdominal contamination. A Hartmann's procedure was performed and patient made uneventful recovery. Conclusion: Acute abdominal compartment syndrome (ACS) is rare complication of flexible sigmoidoscopy in SV. Our case highlights this rare complication but simple treatment that can save life and possibly turn emergency laparotomy into semi-elective procedure.

**PP-47**

**Anesthesia Management for DPS Placing Procedure in a Patient with ALS**

Mehmet Emin İnce a, Serkan Şenkal a, Umut Kara a, Fatih Şimşek b, Mehmet Burak Eşkin b, Gökhan Özkan a

a Gülhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey; b Diyarbakir military hospital, department of anesthesiology, Diyarbakır, Turkey

**Background:** Amyotrophic lateral sclerosis (ALS) is a rare but rapidly progressive neuromuscular degenerative disorder that affects the upper and lower motor neurons. ALS has no curative treatment but some palliative and supportive therapies may be used to prolong patient survival. The diaphragmatic pacing system (DPS) has been used for an alternative treatment method to prolong the onset of mechanical ventilation dependency in ALS patients since 2005. **Material and Methods:** A 59-years-old female diagnosed with ALS 2 years ago was scheduled for a DPS insertion. Her recent PFT demonstrated a severe restrictive pattern with a FEV1 0.81 (37.4% predicted) and FVC 0.85 (33.2% predicted). Her preoperative laboratory results were normal except RBBB in ECG. In order to perform the procedure we decided to administer general anesthesia. After establishing monitoring with pulse-oximeter, electrocardiogram, non-invasive blood pressure, and neuromuscular monitoring, remifentanil infusion was started. Result: Anesthesia induction was performed with bolus doses of propofol and rocuronium. Anesthesia was maintained as TIVA with propofol and remifentanil infusion. Before mapping of the motor point of each hemi-diaphragm, 2mg/kg sugammadex was given but both the TOF ratio and DBS were not increased enough to get appropriate motor response. The electrode implantation and DPS system testing were finally achieved after TOF ratio reached >0.90 by additional 2mg/kg sugammadex. At the end of surgery, the adequately spontaneous breathing patient was extubated in the operating room with discontinuation of anesthesia and transferred to the ICU. Conclusion: The combination of rocuronium-sugammadex and TIVA can be used safely for DPS implantation with neuromuscular monitoring in ALS patients.

**PP-48**

**Continuous Spinal Anaesthesia in a Patient with High Cardiac Risk**

Gökhan Özkan, Mehmet Burak Eşkin, Serkan Şenkal, Ercan Kurt

Gülhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

**Background:** The continuous spinal anesthesia (CSA) technique can be used to achieve an adequate height of sensory blockade slowly for patients with cardiac and pulmonary coexisting diseases. **Material and Methods:** A 86-year-old woman undergoing hip fracture surgery had diabetes mellitus, hypertension and heart failure. In her preoperative assessment prolonged expirium, bilateral rales were detected. Also, transthoracic echocardiogram determined ejection fraction 25%, pulmonary arterial pressure 60 mmHg and global hypocinesia. In the operation room the patient's blood pressure was 140/72 mmHg, heart rate 140 bpm and peripheral oxygen saturation 91%. The patient was positioned to right side.18-gauge Tuohy needle was inserted in the midline at the L3-4 level and the epidural space was identified with the loss of resistance technique. After puncturing the duramater and observing a free flow of spinal fluid, catheter was inserted through the needle and improved 5 cm beyond the tip. We administered 1 ml 0.5% isobaric bupivacaine and 10 mcg fentanyl from this catheter with a speed of 0.4ml/min. Result: Adequate block level was assessed by pinprick and ice. During surgery, hemodynamically stable patient was not needed to apply additional medication through the catheter. The patient was taken to the PACU after surgery and 0.5 ml 0.5% isobaric bupivacaine was administered from the catheter for analgesia. After following for 24 hours in the PACU, the catheter was removed and the patient was discharged to clinic. Conclusion: Compared with single dose spinal anesthesia, since the block occurs in CSA was slow and segmental, CSA facilitates adaptation of cardiovascular system and reduces hemodynamic changes that may occur.
PP-49
General Anesthesia is Favorable to Manage Pediatric Patients during Electrophysiological Study

Gökhan Özkan, Suat Doğanç, Mehmet Emin Ince, Vedat Yıldırım, Ayhan Kılıç, Ahmet Coşar

Gülnahıe military medical academy, department of anesthesiology and reanimation, Ankara, Turkey; Gülnahıe military medical academy, department of cardiovascular surgery, Ankara, Turkey; Gülnahıe military medical academy, department of pediatric cardiology, Ankara, Turkey

Background: Pediatric patients undergoing cardiac catheterization require anesthetic management including adequate analgesia, sedation, immobility and cardiovascular stability. Currently deep sedation has been widely provided as standard method during the catheterization to preserve spontaneous breathing, because it is thought that positive pressure ventilation might affect hemodynamic and respiratory status, and confuse the cardiac catheterization data. However, deep sedation without mechanical ventilation might cause respiratory problems due to hypoventilation in patients during the procedure and influence pulmonary vascular resistance. Inadequate light sedation because of respiratory depression can cause increased sympathetic discharge or patients’ movement. Material and Methods: The patient was a 14-year-old, 45kg, boy scheduled for EPS and cryo-ablation procedure under general anesthesia. His medical history and preoperative non-cardiac physical examination was normal. His blood pressure was 108/65 mmHg and the remainder of her vital signs was unremarkable. Patient monitored with 5 lead ECG, pulse oximeter, non-invasive blood pressure. Result: He was premedicated 0.05 mg/kg midazolam iv. and anesthesia was induced propofol 2mg/kg, fentanyl 1mcg/kg, rocuronium 0.6mg/kg; maintained sevoflurane inhalation with mixture of %50 air-oxygen combination and remifentanil infusion. Lungs were ventilated with tidal volume 6-8 ml/kg and a respiratory rate of 14 per minute. The patient’s intraoperative course was uneventful. After procedure he was extubated and transferred coronary ICU for close monitoring. Conclusion: The demand for cardiac electrophysiological procedures is increasing, as is the range of procedures performed. If these procedures combined with therapeutic ablations it can be very painful especially in pediatrics. General anesthesia using remifentanil and sevoflurane under conventional mechanical ventilation is safe and suitable to control cardiovascular and respiratory conditions in patients undergoing pediatric cardiac catheterization.

PP-50
Incidentally Diagnosed Persistent Left Vena Cava Superior Syndrome

Gökhan Özkan, Mehmet Emin Ince, Sami Eksert, Ender Sir, Ömer Yanarates, Ercan Kurt

Gülnahıe military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

Background: Persistent left vena cava superior syndrome (PLVCS) is the most common type of anomalies with abnormal venous return to the heart. Left VCS drains to coronary sinus and then right atrium. However, in rare cases it can be draining to the left atrium. If it’s draining to left atrium, it’s often together with atrial septal defect and left-to-right shunt. This syndrome cannot be recognized by chest radiography alone, but is often determined by chance after catheter or pacemaker electrode was placed because catheter was on the left side of the cardiac silhouette. Material and Methods: A 50-year-old ASA-II female patient with restrictive lung disease, undergoing lobectomy due to mass in the left lower lobe, was monitored in the operating room after premedication. Following induction, she intubated with right double-lumen tube(NO:37) and left subclavian central venous catheter(CVC) was placed using Seldinger method. Result: After a three-hours surgery, the patient was smoothly awaken, extubated and taken to the PACU. Control chest radiography revealed CVC on the left side of the cardiac silhouette. After angiography, PLVCS was the final diagnose. Conclusion: CVC is widely used in PACU and major surgical operations such as thoracotomy with aim of pressure monitoring, fluid resuscitation, drug delivery and parenteral nutrition. After insertion of CVC, in order to confirm the location of the catheter and to detect possible complications, chest radiography is routinely used. In these patients, CVC can lead to thrombus formation due to the small diameter of coronary sinus. When faced with such a situation, although cases have been reported remaining two weeks in the literature, the majority of publications recommends the withdrawal of the catheter.

PP-51
Percutaneous Ventricular Septal Defect Closure: Anesthetic Considerations

Gökhan Özkan, Nusret Pusat, Vedat Yıldırım, Ahmet Coşar

Gülnahıe military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

Background: Most ventricular septal defect (VSD) repairs are performed in childhood. Adults who present for VSD closure usually have small congenital defects or acute defects after myocardial infarction. The latter patients may be hemodynamically unstable because of intracardiac shunting or arrhythmias. The perioperative management depends
upon the current status of the cardiac disease, compensatory cardiovascular mechanism and associated diseases. Material and Methods: A 24-year-old, 58kg, ASA II male patient who had VSD scheduled for closure with percutaneous technique under general anaesthesia. His medical history was unremarkable. Patient monitored with 5 lead ECG, pulse oximeter, cerebral pulse oximeter, urine output and left radial artery catheter were inserted under local anesthesia before surgery. He was premedicated 0.05 mg/kg midazolam iv. and anaesthesia was induced with propofol 2mg/kg, fentanyl 1mcg/kg, vecuronium 1mg/kg; maintained sevoflurane and remifentanil infusion. Result: Lungs were ventilated with 50% O2 in air using tidal volume 6-8 ml/kg and a respiratory rate of 12 per minute. Right internal jugular venous cannula and transesophageal echocardiography was attached after induction. Procedure was uneventful and after procedure he was extubated in the hybrid operating room and charged cardiac ICU. Conclusion: Even the patients with asymptomatic defects, has limited cardiac and pulmonary reserves when compared with others without cardiac defects. The real challenge for us is the patient with a VSD and fixed pulmonary hypertension who eventually may present sudden increase in pulmonary vascular resistance and rapid deterioration. Manipulations that may increase PVR in these patients include hypoxia, hypercapnia, acidosis, hypothermia and hyperinflation of the lungs, atelectasis, sympathetic stimulation and polycythemia. Equipment and drugs should be always ready before the induction of anesthesia.

### PP-52
**Transthoracic Echocardiography Guided Central Venous Catheter Placement in Plasmapheresis Performed Pregnant Patient**

Gökhan Özkan, Mehmet Emir Ince, Umut Kara, Mehmet Burak Eşkin, Vedat Yıldırım

Güllhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

Background: The proper placement of central venous catheters is confirmed by methods such as fluoroscopy, angiography and chest X-ray. In cases where the patient is pregnant, the use of these methods has drawbacks. Transthoracic echocardiography can easily be used instead of these methods. Material and Methods: Hemosidalysis catheter placement was planned to a 38 years old pregnant woman, in whom an anti-D immunoglobulin was not applied in the first pregnancy, and had CV hemosidalysis catheter inserted with the guidance of transthoracic echocardiography for the purpose of plasmapheresis. In the operating room the patient monitored with electrocardiogram, non-invasive blood pressure, and pulse oximeter. After initial injection of 3ml 2% lidocaine for skin infiltration, guide-wire was advanced in the right subclavian vein through the needle. Result: Before dilatation orientation of the guide-wire was confirmed by using transthoracic echocardiography then an 12F dialysis catheter was placed in the right subclavian vein using Seldinger technique with aseptic precautions. The catheter was advanced until the tip image was seen at the entrance of right atrium in echo view. The catheter was then fixed with sutures in place. The catheter was used for plasmapheresis without any complications. Conclusion: Typically, chest X-ray is performed to confirm desired position of the catheter because of its easier accessibility and also exclude pneumothorax at the same time. As in pregnant patients if the conventional radiological methods cannot be used; with the help of transthoracic echocardiography, proper placement of the guide-wire, skin-cava-atrial junction distance measuring and placing the catheter in the direction with the verification of the location can be achieved and possible complications can be minimized.

### PP-53
**Paediatric Appendicectomy is a safe operation at a district general hospital, results of an audit**

Fazain Jarral, Charanjit Milkhu, Shahid Roomi, Andrew Jackson, Lucy Rigg, Muhammad Hanif Shiwani

Barnsley Hospital NHS Foundation, Barnsley, United Kingdom

Background: Around 12,000 appendicectomies are performed annually in England, with 80% performed in District General Hospitals (DGHs), 20% performed in Specialist Paediatric Units (SPUs). We aimed to compare our results to national standards as defined by the British Association of Paediatric Surgeons (BAPS) – Commissioning Guide 2014: Paediatric Emergency Appendicectomy. Material and Methods: Method A retrospective review of 47 patients who underwent emergency appendicectomy from 2014 to 2015. Patient notes were analysed to gather data on: time to operation from decision, type of operation, histology, length of hospital stay, post-operative complications and re-admission rates. Result: Result Forty-three (91.5%) operations occurred within 12 hours. Twenty-three (48.9%) were laparoscopic and 23 (48.9%) open. One (0.7%) procedure was converted from laparoscopic to open. Histology showed 5/47 (10.6%) were normal. Average hospital stay was 2 days. Three patients (6.4%) were readmitted within 28 days post-operatively with none requiring further intervention. One (2.13%) patient was transferred to a specialist paediatric centre (prolonged ileus). Conclusion: Our performance meets current national standards. There was no absolute recommendation for length of stay, 28-day readmission and transfers to an SPU. Our performance meets current national standards.

Eur Surg Res 2016;57(suppl 1):1–141

DOI: 10.1159/4461311
Published online: May 25, 2016

© 2016 S. Karger AG, Basel
0014-312X/16/0573-0001$39.50/0
www.karger.com/esr
PP-54
Significance of Enterobius Vermicularis in Acute Appendicitis: A Six-Year Single Centre Study
Fazain Jarrai, Shahid Roomi, Muhammad Hanif Shiwani
Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

Background: Enterobius Vermicularis is an infrequent histological finding in appendicectomy specimens in non-tropical countries, mostly in paediatric population. The primary aim of this study was to find the incidence of E. Vermicularis in all age groups undergone appendicectomy, with a secondary aim to analyse significance of pre-operative blood markers and radiological findings to determine a relationship which could aid in pre-operative diagnosis. Material and Methods: Retrospective study of all patients who had appendicectomy in a six-year period. A Demographic data, biochemical markers, radiology and histology results for all patients found to have E. Vermicularis were analysed. Result: E. Vermicularis was found in 20 of 1562 cases (1.28%). Acute appendicitis was histologically proven in 5 cases (25%). Demographics included: Mean age 16.6 (6-44), 12 cases (60%) paediatric (age 6-16), 8 (40%) in adults (age >16). Female preponderance of 3:1 was found in all cases of E. Vermicularis. Blood markers showed increased neutrophilia in 10 cases (50%), with 3 cases showing acute inflammation (15%). Eosinophilia in 3 cases (15%) with no acute inflammation, C reactive protein (CRP) raised in 8 cases (40%) with 2 cases of acute inflammation (10%). US abdomen was performed in only 2 patients with normal results. CT in one patient showed did not show appendicitis. Conclusion: Enterobius Vermicularis is an infrequent finding in acute appendicitis. Eosinophilia, neutrophilia and raised CRP are inadequate for predicting pre-operative E. Vermicularis. Radiological investigations were found insignificant in diagnosis.

PP-55
Tumor Infiltrative Pattern Predicts Sites of Recurrence after Curative Gastrectomy for Stage II/III
Mitsuro Kanda a, Akira Mizuno a, Daisuke Kobayashi a, Chie Tanaka a, Masamichi Hayashi a, Naoki Iwata a, Suguru Yamada b, Tsutomu Fujii b, Goro Nakayama b, Hiroyuki Sugimoto b, Masahiko Koike b, Michitaka Fujii b, Yoshiie Shimoyama b, Yasuhiro Kodera b
a Department of Gastroenterological Surgery (Surgery II), Nagoya University Graduate School of Medicine, Nagoya, Japan; b Department of Pathology, Nagoya University Hospital, Nagoya, Japan

Background: The tumor infiltrative pattern (INF) has been routinely evaluated by hematoxylin and eosin stained sections as a pathological characteristic of surgically resected specimens in East Asia. Material and Methods: Infiltrative pattern of gastric cancer (GC) has been histopathologically classified into INF types a, b, and c according to the Japanese Classification of Gastric Carcinoma. The prognostic value and characteristics of the pattern of disease recurrence for each INF type were assessed in 785 patients with various stages of GC, and also in 243 patients with stage II/III GC. Result: Comparison of overall survival of patients independent of stage revealed that INF was significantly associated with prognosis. Specifically, peritoneal metastasis was present in 91% of stage IV patients in the INFc group, whereas hepatic metastasis was present in 39% of stage IV patients in the INFa/b. INF was not significantly associated with survival after curative gastrectomy of patients with stage II/III GC. Prevalence of peritoneal recurrence was significantly higher in the INFc group compared with that of the INFa/b group, whereas prevalence of hepatic recurrence was significantly higher in the INFa/b group compared with that of the INFc group. Multivariate analysis identified INFc as an independent risk factor for peritoneal recurrence after curative gastrectomy. The association of the INF type with the incidence of peritoneal recurrence was observed with all disease stages regardless of whether the patient was given adjuvant chemotherapy. Conclusion: Evaluation of the INF type shows promise as a predictor of postoperative sites of recurrence in patients with GC.

PP-56
Anesthetic Management of A Child With Noonan’s Syndrome: A Case Report
Umut Kara, Mehmet Emin Ince, Serkan Şenkal, Abdulkadir Atım, Gökhan Özkaz
Gülhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

Background: Noonan’s syndrome is a genetically disorder, characterized by low posterior hairline, down-sloating eyes, a webbed neck, chest deformities and congenital heart disease. This case report describes anesthetic management for a 5-year-old boy with Noonan syndrome, scheduled for adenoidectomy under general anesthesia. Material and Methods: There is no known family history of Noonan’s syndrome. He had a history of repair on patent ductus arteriosus when he was 2 years old. Haematological examination revealed no coagulation or platelet function defects. The child had normal development using with growth hormone therapy. As prophylaxis for bacterial endocarditis, intravenous ampicillin was administered. Induction of anesthesia was achieved with fentanyl, propofol, ketamine and vecuronium bromide. After 3 minutes of ventilation, video laryngoscopy was carried out. Auffed oral endotracheal tube number 5.0 mm internal diameter was safely placed into the trachea. Result: Maintenance of anesthesia was achieved with total intravenous anesthesia with propofol and remifentanil. The hemodynamic state was stable during surgery. At the end of surgery neuromuscular blockade was reversed with neostigmine and atropine and the patient was extubated in the operating room when he met extubation criteria.
criteria. His emergence and postoperative course were uneventful. The child was discharged on 2nd postoperative day. **Conclusion:** Noonan’s syndrome is characterised by multisystem involvement, requiring thorough preoperative assessment of cardiovascular and haematological systems. All patients with Noonan’s syndrome should be considered to be at risk for the development of malignant hyperthermia. We can conclude that for successful anesthetic management in a case of Noonan Syndrome without inhalation anesthesia.

---

**PP-57**

**Anesthetic management of laparoscopic appendectomy in a patient with Behçet’s disease**

Umut Kara a, Mehmet Emin Ince b, Murat Urkan b, Ümit Alakus b, Mehmet Ulu Meral c

a Gülhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey; b Gülhane military medical academy, department of general surgery, Ankara, Turkey; c Izmir military hospital, department of general surgery, Izmir, Turkey

**Background:** Behçet’s disease (BD) was first described by the Turkish dermatologist Hulusi Behçet in 1924. BD is a chronic inflammatory disease characterized by recurrent oral and genital ulcers and iritis. BD can also involve visceral organs such as the gastrointestinal tract, pulmonary, musculoskeletal, cardiovascular and neurological systems. The purpose of this case report is to review the anesthetic management in BD. **Material and Methods:** A 32-year-old patient with BD was scheduled for emergency laparoscopic appendectomy. His past history revealed recurrent oral and genital ulcers 5 years back. He was diagnosed then as BD and was on regular medication (0.5 mg colchicine once daily). Monitoring was done by pulse oximeter, 3 lead electrocardiogram and automatic noninvasive blood pressure, set to record every 3 minutes. LMA-ProSeal™ size 5 was inserted after anaesthesia induction. **Result:** 14F size nasogastric tube was successfully introduced through the drain tube. Patient was ventilated in volume control mode (tidal volume of 5 mL/kg producing airway pressures of 15–20 cmH2O). Anesthesia was maintained with remifentanil continuous infusion and sevoflurane 1–2%. The hemodynamic parameters remained stable throughout the procedure. **Conclusion:** Oral ulcers and avoiding recurrent attacks leads to difficult intubation were our main concerns during the conduct of anesthesia in this patient. Perioperative management of case of BD is aimed at minimizing the airway complications and needle punctures (diffuse inflammatory skin reaction). We conclude that perioperative management of BD includes thoroughly assessing other organ function.

---

**PP-58**

**Use of the C-MAC® Video Laryngoscope for Intubation in Madelung’s Disease**

Umut Kara, Mehmet Emin Ince, Serkan Şenkal, Abdulkadir Atım, Gökhan Özkan

Gülhane military medical academy, department of anesthesiology and reanimation, Ankara, Turkey

**Background:** Launois Bensaude Madelung’s disease, also called multiple symmetric lipomatosis, is a rare disorder characterized by extensive symmetric nonencapsulated subcutaneous fat tissue on the neck and shoulder areas. Bag mask ventilation and intubation difficulties are potential problems related to anesthesia when applying the surgery in Madelung’s disease patients. **Material and Methods:** We present the case of a 51-year-old, ASA physical status I, male patient who underwent conventional surgical resection of fat tissue in the anterolateral neck region. He was diagnosed with Madelung’s disease ten years earlier. **Result:** On preanaesthetic airway evaluation, he was classified as Malmi score III, with head and neck flexion extension movement range of 20 degrees. His body mass index was 27.71. Interincisor distance was 4 cm. The thyromental and sternomental distances were not measured due to the gigantic submamillary mass. A neck computed tomography imaging showed no signs of tracheal deviation or compression. The patient was successfully intubated using a C-MAC® video laryngoscope (STORZ) and difficult intubation d-blade, following inhalation induction of anaesthesia using 5% sevoflurane and intravenous remifentanil 1.5 mcg/kg without the use of neuromuscular blocking drugs. The surgery proceeded without any complications. The patient met criteria for extubation at the end of surgery and he was extubated safely. His postoperative period was uneventful and he was discharged home on the 2nd day. **Conclusion:** Tracheal intubation with C-MAC® video laryngoscope d-blade, using sevoflurane and remifentanil may be an alternative to traditional tracheal intubation with neuromuscular blocking agents.

---

**PP-59**

**Pylorus Preserving Procedures Attenuate Impaired Gastric Reservoir and Emptying Function after Gastrectomy**

Masahiko Kawamura a, Koji Nakada b, Keishiro Murakami b, Taizo Iwasaki b, Hideo Konishi b, Tomoki Koyama c, Atsuo Shida c, Nobuyoshi Hanu a, Norio Mitsumori b, Katsuhiro Yanaga b

a Kawamura Hospital, Shizuoka, Japan; b Jikei University School of Medicine, Tokyo, Japan; c Kawamura Hospital, Tokyo, Japan
Background: Postgastrectomy syndrome is commonly seen after gastrectomy. This may be caused by reduced gastric reservoir capacity and rapid gastric emptying after gastrectomy. In Japan, pylorus-preserving procedures are often applied for early gastric cancer at the upper or the middle stomach, to reduce postgastrectomy syndrome. However, the implication of the pylorus-preserving procedures on motor physiology of the remnant stomach was not well described. Aims: To compare gastric motor function among various gastric resection procedures by using 13C-acetate breath test. Material and Methods: 13C-acetate breath test was performed in 20 healthy volunteers (HV), in 12 distal gastrectomy with Billroth I reconstruction (DG), in 10 pylorus-preserving distal gastrectomy (PPG), and in 7 proximal gastrectomy (PG) patients. Liquid meal (200kcal/200ml, Racol, Otsuka Pharm. Co. Ltd, Tokyo, Japan) mixed with 100 mg of 13C-acetate was ingested. Breath samples were collected before and 5, 10, 15, 20, 30, 40, 50, 60, 75, 90, 105, 120, 135, 150, 165, 180 minutes after ingestion of test meal. 13CO2 content was measured by infrared spectro-photometry. Gastric reservoir and emptying function were evaluated by retention rate at 5 minutes (RR5) and half emptying time (T1/2) calculated by Wagner-Nelson analysis method, and they were compared among the groups. Result: RR5 was 93.7±, 33.2±, 63.3± and 75.0± %, and T1/2 was 23.3±, 4.1±, 9.8± and 11.5± minutes (mean ± SEM), in HV, DG, PPG and PG patients, respectively. (* p<0.05 vs. HV, + p<0.05 vs. DG patients) Conclusions: Reduced reservoir capacity and rapid gastric emptying were evident in DG patients. Conclusion: Pylorus-preserving procedures (PPG and PG) partly attenuated impaired motor function after gastrectomy, therefore, seems potent to reduce postgastrectomy syndrome.

PP-60 Laparoscopic Spleen Preserving Surgery for Symptomatic Post-Traumatic Splenic Cysts – Is it feasible?

Khalid Khan, Khurram Siddique, Muhammad Hanif Shiwani, Suhail Anwar
Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

Background: Post-traumatic splenic cysts are rare and are classified as secondary cysts. Large symptomatic cysts may require surgical intervention to prevent complications. Several spleen-conserving techniques have been proposed owing to the post splenectomy consequences. We present here two challenging cases of splenic preservation for symptomatic splenic cysts following blunt trauma. Material and Methods: Case 1: A 17-year-old male presented with left sided abdominal pain after being punched. Initial ultrasound suggested a large 8cm splenic haematoma. He was managed successfully with conservative treatment. Follow-up imaging, a close radiological monitoring program of regular ultrasound scans was initiated which confirmed increasing cyst size of 14 cm. The patient had persistent symptoms and opted for surgery. Operative findings confirmed a large 14 cm cyst along the upper pole. After division of the pericystic adhesions, partial cystectomy and marsupialization of the splenic cyst was laparoscopically performed using a harmonic scalpel. Case 2: A 26-year-old male presented with 2 years history of left sided abdominal pain following blunt trauma. Examination confirmed a mass in his left upper quadrant. Ultrasound and CT scan showed 19 x 19 cm cystic mass displacing spleen inferiorty. All bloods results were normal and hydatid antibodies were negative. The patient’s symptoms were getting worse affecting his work and he opted for surgical intervention. The operative technique was similar to case one. Result: The histology of both cases showed simple splenic cysts. Conclusion: Laparoscopic surgery for post-traumatic splenic cyst is feasible and safe. It avoids the loss of important immunological & haematologically functions of spleen.

PP-61 Primary extranodal, mural small bowel lymphoma causing complete acute intestinal obstruction

Khalid Khan, Mini Varghese, Muhammad Hanif Shiwani
Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

Background: The primary extra-nodal lymphoma of gastrointestinal tract accounts for 2% of all gastrointestinal malignancies. Clinical presentation depends on the site of involvement. It rarely presents as complete intestinal obstruction. Material and Methods: A 51-year-old lady, with known coeliac disease, was initially referred with iron deficiency anaemia to surgical clinic. She had laparoscopic tubal ligation in the past. The upper GI endoscopy showed antral gastritis and slightly atrophic mucosa in D2. Colonoscopy couldn't be completed due to poor bowel preparation. CT colonography was normal. Four weeks later, she acutely presented with abdominal pain. This responded to conservative management, she was discharged home. One week later, she re-presented with acute abdomen. Her CT scan suggested small bowel obstruction. She underwent laparotomy after a failed trial of conservative management. Laparotomy revealed obstruction secondary due to a stricture at proximal ileum. Segmental resection and anastomosis of small bowel was performed. She made uneventful recovery. Result: Histology revealed features of a small bowel mucosa infiltrated by an isolated small bowel diffuse large B cell lymphoma, hence the diagnosis of high grade B cell lymphoma. Completion staging CT scan chest didn't suggest any metastasis. Conclusion: There is reported association between gastrointestinal lymphomas with coeliac disease. Hence, in case of iron deficiency anaemia, an early diagnosis of small bowel tumour can be achieved by carrying out a through full GI endoscopies including small intestine. Abdomen pain warrant an early CT scan which would help in identifying disease at early stage and avoid further complication.
PP-62
Malignant intestinal lymphomas
Veronika Lovássová, Kamil Navrátil, Martin Oliverius, Jiří Froněk
IKEM, Prague, Czech Republic

Background: Malignant lymphoma of the bowel is a rare disease. Histology most often shows non Hodgkin’s primary extra-nodal B-cell lymphoma. The incidence in the small intestine is rising in the ablora direction. The occurrence in the colon is uncommon. This disease affects people aged 60-65 years but occurrence at a younger age is not unusual. Immunodeficient and transplant patients are most at risk. Material and Methods: We highlight a serious complication which is an acute abdomen as a primary manifestation of this condition. Result: Case report: We present a male 39-year-old patient J.H. after combined pancreas and kidney transplantation in 2006. Five years after transplantation the patient was operated for an acute abdomen. During the surgery the tumor of the size of man’s head perforating the 1 year-old patient J.H. after combined pancreas and kidney transplantation in 2006. Five years after transplantation the patient was operated for an acute abdomen. During the surgery the tumor of the size of man’s head perforating the 1 year-old patient J.H. after combined pancreas and kidney transplantation in 2006. Five years after transplantation the patient was operated for an acute abdomen. During the surgery the tumor of the size of man’s head perforating the...

PP-63
Continuous Local Wound Anaesthesia following Kidney Transplantation
Štěpán Malý, Petr Píza, Jiří Froněk
Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Background: Modern multimodal approach to the pain management stands for applying anaesthetics from various pharmacological branches with an additive effect for the patient. That allows us to lower the dosage of the single drugs (especially continuously applied intravenous opioids) and thus lower the danger of their numerous adverse effects. An application of a local anaesthetic seems to be a suitable alternative to a continuous opioid usage. It can be achieved by a catheter, installed into the wound at the end of the surgery. Material and Methods: For the study, patients after the living-donor kidney transplantation were chosen. We prepared a protocol for installation of the catheter into the interfascial space of the surgical wound. In the first phase of the study, we focused on finding the right dosage of the chosen anaesthetic (0.5% bupivacaine) without exceeding the maximum recommended dosage. We prepared a protocol for monitoring the post-operative pain relief as well as complications, we proposed a proper co-analgesia. Result: Between September and December 2015, first seven patients were enrolled in the study. In 86% of patients, the locally applied anaesthesia was sufficient without the need for continuous opioid usage. No adverse effects of the chosen anaesthetic (bupivacaine) were observed. Conclusion: Surgically installed catheter enables the application of local anaesthetic (bupivacaine) directly into the wound. This method of analgesia seems to be safe and effective. It doesn’t increase the risk of in-wound infection. It has been proven, that the method has its place in post-operative pain management after the living-donor kidney transplantation.

PP-64
Successful conservative management of a pustulant peri-aortic root graft collection using irrigation and antibiotics
Leeron Marshall a, b, Callum Shields a, b, Thomas Theologou b, Carlos Nistal b, Debbie Harrington b, Manoj Kuduvalli b, Aung Oo b, Mark Field b
a University of Liverpool, Liverpool, United Kingdom; b Liverpool Heart and Chest Hospital, Liverpool, United Kingdom

Background: A 48-year-old patient underwent root replacement with a mechanical conduit in 2014. He was discharged home and followed an unremarkable course. He represented unwell with rigors. Imaging showed normally functioning aortic valve prosthesis however a large perigraft collection. Blood cultures grew Staphylococcus Aureus. Material and Methods: Treatment options included: a) redo-sternotomy and explant of the root prosthesis; b) redo-sternotomy and drainage of the collection. Given the risks of performing redo-root replacement in the presence a grossly infected operative field we elected to adopt a conservative approach. The patient underwent redo-sternotomy and pus was aspirated. The graft was irrigated with 10% hydrogen peroxide, rifampicin solution (600mg/500mls Saline) and powdered with 1g Vancomycin. An irrigation system was constructed with an inlet through the superior aspect of the sternum and outlet via normal mediastinal drains. The sternum was closed. The irrigation was run at 100ml/hr for 3 weeks together with IV Tecioplanin (800mg/day) and Rifampicin (600mg bd). Result: After 6 weeks he was discharged home with a 3-month course of home antibiotics. He was then readmitted to be converted to oral fluclaxacillin and repeat imaging. He is currently well on lifelong oral antibiotics and CRP surveillance remains static and normal (<7). Conclusion: This case is presented as it demonstrates that successful conservative management of a gross and purulent proximal aortic root graft infection, avoiding the need for high risk redo surgery. Such an approach is however only feasible in the absence of valvular malfunction, conduction defects, myocardial cavities or pseudo-aneurysms.
PP-65
Evaluation of Blood stream Infection in Liver Transplant Recipients
Koji Masuda a, Taku lida b, Takehisa Matsuyama b, Tsukasa Nakamura a, Katsuhiro Koshino a, Tomoyuki Suzuki a, Shuji Nobori b, Hitetaka Ushigome b, Norio Yoshimura b

Background: Blood stream infection (BSI) is a crucial complication in liver transplant recipients, and prevention and treatment are important. Material and Methods: Ninety-seven recipients who underwent liver transplantation from September 2003 to December 2015 were divided into a blood culture-positive group (BCP) and blood culture-negative group (BCN). We retrospectively evaluated each group with respect to prognosis and risk factors for BSI, such as preoperative infections, the MELD score, and reoperation for postoperative bleeding. Result: Of the 97 recipients, 18 were in the BCP group and 79 were in the BCN group. Preoperative infections such as pneumonia, urinary tract infection, and spontaneous bacterial peritonitis occurred in 8 of 18 (44.4%) patients in the BCP group and 17 of 79 (21.5%) patients in the BCN group (p = 0.448). The MELD score was higher in the BCP group (21.8 ± 10.6) than in the BCN group (16.5 ± 7.9). Reoperations were performed in 4 of 18 (22.2%) patients in the BCP group and 5 of 79 (6.3%) patients in the BCN group. In the BCP group, blood cultures were proven positive on postoperative day 127 ± 9.5. The recipients’ 5-year survival rate was significantly lower in the BCP than BCN group (58.23% vs 90.23%, respectively; p < 0.05). Conclusion: Preoperative infections and reoperation obviously increased the risk of BSI. A high MELD score also appears to be a risk factor. Recipients’ mortality was higher in the BCP than BCN group; therefore, it is very important to control the preoperative conditions and postoperative bleeding to prevent BSI.

PP-66
Results of living-donor liver transplantation with old donor grafts >55 years old
Takehisa Matsuyama, Taku lida, Koji Masuda, Tsukasa Nakamura, Katsuhiro Koshino, Tomoyuki Suzuki, Shuji Nobori, Hitetaka Ushigome, Norio Yoshimura
University Hospital, Kyoto Prefectural University of Medicine, Kyoto, Japan

Background: The results of living-donor liver transplantation with old donor grafts are poor. We herein report our results of adult living-donor liver transplantation from an old donor aged >55 years. Material and Methods: Sixty-five adult living-donor liver transplantsations were performed at our hospital from 2003 to 2015, excluding blood type-incompatible and crossmatch-positive cases. Twelve donors were >55 years old. The patients were classified into two groups: liver transplant recipients from an old donor (Group O, n = 12) and liver transplant recipients from a young donor (Group Y, n = 53). The treatment results were compared between the two groups. Result: Group O comprised 12 patients (male/female, 9/3; age range, 56–65 years; right graft/left graft, 8/4). Group Y comprised 53 patients (male/female, 23/30; age range, 20–55 years; right graft/left graft, 34/19). There were no significant differences in the graft type, Child–Pugh score, Model for End Stage Liver Disease score, graft-to-recipient weight ratio, cold ischemic time, warm ischemic time, operation time, or amount of bleeding between the two groups. The survival rate in Group O was lower than that in Group Y (p = 0.0165) and decreased 5 years after transplantation. Five patients in Group O died of graft malfunction (n = 2), chronic refusal (n = 1), hepatocellular carcinoma recurrence (n = 1), and neuropathy of unknown origin (n = 1). Conclusion: The survival rate was lower in Group O than Y. Liver transplant recipients from old donors require greater consideration.

PP-67
Colorectal cancer stem cell signature in case of colorectal carcinoma
Omar Khardizehvili a, Giaorgi Merabishvili b, Levan Gofodze b, Zaza Demetrashvili b, Tea Zurabashvili b

a Central university clinic after academic N. Kipshidze, Tbilisi, Georgia; b Central university clinic after acad. N. Kipshidze, Tbilisi, Georgia

Background: A frequent complication in colorectal cancer is regeneration of the tumor after therapy and its chemo-resistance. CRC (colorectal cancer stem cell) has major role in cancer recidives, its chemo-resistance and predicts disease relapse. It is well recognized that tumor initiation, growth, invasion and metastasis are promoted by CSCs. An important reason for the widespread interest in the CSC model is that it can comprehensibly explain essential and poorly understood clinical events, such as therapy resistance, minimal residual disease, and tumor recurrence. Material and Methods: The study is done on 20 patients, age from 35-70. visualisation of primary antibodies done by streptasidin-biotin-peroqsidaze complex (Biogenex, San Ramon, CA). Semi-quantitative analysis is done by 10X10 enlargement and quality evaluated by 4 denominator 0 (negative), 1*(weak), 2*(medium), 3*(high). Positive cells are counted on 10X20 enlargement (microscopy). Data is processed on SPSS v.19.0programme. Result: According to a survey result, new diagnostic, treatment and prevention methods of colorectal cancer will be implemented... Conclusion: A better understanding of how tumor-initiating cells, such as CSCs, escape chemo-therapy, the establishment of appropriate biomarkers, and the definition of novel clinical endpoints for monitoring the efficacy of combined...
and multimodal therapeutic strategies will be a challenge to improving future colon cancer treatment.

**PP-68**
Acute Abdominal Pain Management of a Patient with Dysfibrinogenemia

Orhan Ureyen *a*, Enver Ilhan *a*, Ulvi Mehmet Meral *b*, Ugur Gokceli *a*

*a* Bozyaka Research and Training Hospital, Izmir, Turkey; *b* Izmir Military Hospital, Izmir, Turkey

**Background:** Congenital dysfibrinogenemia (CD) is a rare condition with abnormality in the fibrin molecule results in defective fibrin clot formation. We wanted to present a CD case with acute abdominal abscess due to spontaneous gastric perforation and transmetatarsal amputation in the 6th postoperative day. **Material and Methods:** Thirty-six-year-old male patient admitted to emergency service with severe abdominal pain with a two day story. The patient had a surgical history consisting of splenectomy due to splenic trombosis, gastric perforation and segmenter small bowel resection. Besides peritoneal irritation signs, WBC was 24.000. We decided to exploration and laparotomy was performed after fresh frozen plasma transfusion. **Result:** In the exploration; intraabdominal severe abscess formation and gastric perforation at the posterior surface of cardia. Gastric repair, irrigation of peritoneal space and gastric biopsy of perforated region was performed. In the postoperative 6th day, unilateral transmetatarsal amputation was performed because of ischemic necrosis of toes. The patient was discharged in the 23th day after repair of abdominal eviseration in the 20th postoperative day. **Conclusion:** Congenital dysfibrinogenemia may lead to different types of pathologies in the whole body. Surgical team should be on alert for possible surgical disorders at the presence of peritoneal irritation signs in CD patients. Also they should pay attention for trombogenic complications of surgical procedures in these patients.

**PP-69**
Esophago-Gastric Malignancies Detected in a Tertiary Surgical Center Endoscopy Unit: Descriptive Study of 39 cases

Orhan Ureyen *a*, Ulvi Mehmet Meral *b*, Murat Uz *a*, Enver Ilhan *a*

*a* Bozyaka Research and Training Hospital, Izmir, Turkey; *b* Izmir Military Hospital, Izmir, Turkey

**Background:** Gastric cancer (GC) is the third most frequent oncological cause of death, the fifth most common malignancy and accounts for 6.8% of all tumors. **Material and Methods:** This retrospective study covered the 5-year period from January 1, 2011, to December 31, 2015 and included all upper gastrointestinal endoscopies performed. We collected data about sex, age, endoscopy indication and description of the gastric lesions and pathological findings. The study is based on pathologically revealed upper gastrointestinal malignancies in our case series. Esophagus cancers were divided into three groups as proximal, mid and distal; gastric cancers were also divided into three groups as 1/3 proximal, 1/3 middle and 1/3 distal, according to anatomical locations. **Result:** In the malignity positive group, the mean age was 63,4 (33-88). 24 was male and 15 were female. 39 (1.17%) of 3309 endoscopies found malignant lesions in the five-year period. In endoscopic findings; 27 (69,2%) had only tumor, 7 (17,9%) had ulcer, 3 (7,69%) had edematous gastric mucosa and 2 (5,13%) had limitis plastic. Two proximal and two distal esophagus tumor were detected, all were squamous cell carcinoma. 12 were distal, 10 were proximal, 7 were middle gastric tumors. Four patients were limitis plastica and two were previously operated due to benign diseases and their tumors were located at gastrojejunostomy anastomosis. In the gastric cancer group; 29 were adenocarcinoma, 5 were signet ring cell carcinoma and 1 was lymphoma. **Conclusion:** Although malignity incidence of endoscopically detected patients was lower in general surgery unit; preoperative endoscopic evaluation by surgeon is important. Elder patients with faint symptoms must be examined by endoscopy.

**PP-70**
Intraabdominal Sepsis Due to Tumor Perforation of Gastric Diffuse Large B-Cell Lymphoma

Enver Ilhan *a*, Orhan Ureyen *a*, Ulvi Mehmet Meral *b*, Ugur Gokceli *a*

*a* Bozyaka Research and Training Hospital, Izmir, Turkey; *b* Izmir Military Hospital, Izmir, Turkey

**Background:** Gastric Diffuse Large B-Cell Lymphoma (DLBCLs) is a rare tumor of stomach. Recent studies showed the relationship between the oncogenesis and Helicobacter Pylori (HP) presence at the mucosa. We wanted to share a patient who was admitted with disseminated peritonitis and intraoperatively diagnosed as gastric DLBLC. **Material and Methods:** Forty-seven year old male patient was admitted with complaints of nausea, vomiting and abdominal pain. Since started one month ago, the complaints were intensified 5 days ago. While physical examination showed muscular tenderness, WBC was 26000, Hb was 8,2. In CT scan, multiple disseminated abscess formations, conglomerated lymph nodes and gastric Wall irregularities were detected. He had co-morbid respiratory problems due to abdominal sepsis. **Result:** Laparotomy, gastric Wall repair and irrigation-aspiration-drainage procedures were performed. After three days under intensive care, the patient died because of multiple organ failure. **Conclusion:** Gastrointestinal tract is the most common localization with a rate of 5-20% of extranodal lymphomas. Although the primary gastric lymphomas are rare, it is increasing in parallel with other tumors. Like
most malignancies; DLBCLs has better prognosis in early-stage diagnosed patients. Gastroscopies performed at regular intervals and HP eradication can help prevention - early treatment of DLBCLs.

**PP-71**

**Early micro-rheological alterations in mesenterial ischemia-reperfusion in the rat**

Anita Mester, Zsuzsanna Magyar, Viktoria Sogor, Norbert Nemeth

Department of Operative Techniques and Surgical Research, Faculty of Medicine, University of Debrecen, Debrecen, Hungary

**Background:** The border of reversible-irreversible microcirculatory and morphological changes after mesenterial ischemia-reperfusion (I/R) hasn’t been completely elucidated yet. Supposedly, micro-rheological parameters (erythrocyte deformability and aggregation) may show early deterioration contributing to microcirculatory failure. **Material and Methods:** Female CD outbred rats were anesthetized and divided into Control (n=5) or I/R (n=7) groups (permission: 20/2011/DEMAB). The left femoral artery was cannulated then median laparotomy was performed. In the Control group no other intervention was made. In the I/R group the superior mesenteric artery was clamped for 30 minutes, and a 120-minute reperfusion period was observed afterwards. Blood samples were taken before and after ischemia (base, i30), in the 30th, 60th and 120th minutes of the reperfusion (R30, R60, R120). Hematological parameters (Sysmex F800 automate), erythrocyte deformability (LoRRcα MaxSiS rotoroscan rotational ektacytometer) and aggregation (Myrenne MA-1 aggregometer) were determined. **Result:** Hematocrit increased in I/R group during the reperfusion (vs. base and Control, at R30: p=0.021 and p=0.002, at R60: p<0.001 and p=0.003; at R120: p=0.065 and p<0.001, respectively). Leukocyte and platelet counts slightly increased. Erythrocyte deformability showed worsening in I/R group during the first hour of the reperfusion (SS1/2 parameter at R30: p=0.037; R60: p=0.04 vs. Control). All erythrocyte aggregation index values increased significantly and gradually in I/R group (e.g., M5s index vs. base and Control, at i30: p=0.016 and p<0.001; at R30: p=0.005 and p<0.001, at R60: p=0.001 and p<0.001; at R120: p=0.001 and p=0.014, respectively). **Conclusion:** Micro-rheological parameters may show early and significant deterioration during the reperfusion that might contribute further to microcirculatory alterations.

**PP-72**

**Xanthogranulomatous cholecystitis: A rare pathology of difficult laparoscopic cholecystectomy**

Charanjit Singh Miku, Fazain Jarraal, Daniel Raw, Ajaykumar Malayakkal, Muhammad Hanif Shiwani

Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

**Background:** Xanthogranulomatous Cholecystitis (XGC) is an unusual inflammatory condition of the Gall Bladder (GB) which is not easy to diagnose preoperatively. Many surgeons are not familiar with the clinical perspective of this pathological condition. We aim to share our experience. **Material and Methods:** A retrospective review of 1079 patients who underwent LC from 2012 to 2015 in our institution. Fourteen patients with XGC were identified. The preoperative radiology, operative findings, operative outcome and postoperative pathology results were analysed for this group of patients. Independent ‘blinded’ pre-operative radiology review was also carried out by two consultant radiologists. **Result:** The incidence of XGC is 1.3%. Preoperative imaging showed thick walled GB in 11 patients (79 %) and 3 (21%) thin walled GB. No case showed suspicion mimicking cancer preoperatively, during independent ‘blinded’ radiology review or in the final histology specimen. All cases were challenging surgically; five (36%) perforated intraoperatively. None required conversion to open. **Conclusion:** XGC is a benign, rare, pathological entity which is difficult to diagnose preoperatively or intraoperatively. It does not mimic cancer from our study radiologically, clinically or pathologically. Surgeons must be aware of XGC as a possible diagnosis when encountered with a difficult cholecystectomy. The risk of perforation could be higher.

**PP-73**

**Abdominal compartment syndrome – a severe complication after laparoscopic cholecystectomy**

Muresan Mircea a, Brinzaniciu Klara b, Muresan Simona c

a University of Medicine and Pharmacy of Tirgu Mures – Surgery Clinic No.2, Tirgu Mures, Romania; b University of Medicine and Pharmacy of Tirgu Mures – Anatomy Department, Tirgu Mures, Romania; c University of Medicine and Pharmacy of Tirgu Mures – Physiology Department, Tirgu Mures, Romania

**Background:** Abdominal compartment syndrome represents a well known concept in patients of intensive care units, consisting in intra-abdominal hypertension, over 20 mmHg, associated with at least an organ failure. **Material and Methods:** We present the case of a male patient operated for acute cholecystitis which undergone laparoscopic cholecystectomy with unfavorable course, developing septic shock with pulmonary dysfunction, requiring mechanical ventilation. Due to a progressive abdominal distension, it
was decided the intra-abdominal pressure monitoring ussing the urinary bladder catheter. Despite the conservative treatment, the pressure increased, surpassing several times the value of 22 mmHg, with worsening of pulmonary dysfunction and renal failure association. The last choice was the surgical approach which consisted of decompression laparotomy with closing off the abdominal wall using the anterior lamina of rectus abdominis sheaths flipped medially and sutured on the median line. Result: Postoperative intra-abdominal pressure decreased progressively with pulmonary function improving and extubation in the fourth postoperative day. After discharge, the patient was followed up, requiring a second surgery for a midline incisional hernia. It was performed an onlay mesh abdominal wall plasty with good postoperative results. Conclusion: Abdominal compartment syndrome is a severe complication requiring aggressive therapeutic approach, conservatively initially, followed by surgery. Decompression laparotomy using the anterior lamina of rectus sheath, represents a feasible solution and live saving in such conditions, even if subsequently require a second surgery for abdominal wall strengthening. Acknowledgements: This project is financed through internal research grants by the University of Medicine and Pharmacy of Targu Mures, Romania, No. 17800/10/22.12.2015.

PP-74
Appendicular duplication: A rare variation that should not be ignored
Sarah Mizrahia, Schemasy-Mehdi Feddala, Arnaud Delebarreia, Jean-François Quinchonb, Sabrina Dar-dennesc
a Lille University Hospital, Lille, France; b GHICL, Lille, France

Background: The appendicular duplication is a rare anatomical variation around 0,004% and the diagnosis is often coincidental in adults whereas in children it is associated with uro-genital, digestive and vertebral malformations. Material and Methods: We report the case of a 36 years old female patient with no particular medical background. The patient was diagnosed with appendicitis and local peritonitis which had a difficult exploration of the caecum. The patient presented persistent abdominal pain and inflammatory syndrome despite a strong antibiotic treatment. A second surgical intervention was necessary 22 days later for a suspicion of abscess of the appendicular stump. During the intervention, a second appendix was found. Result: The two appendices were confirmed by pathology analysis and where both 5cm length. Different anatomic variations of the appendicular duplication helped established a classification of the double-appendix. Conclusion: Only about a hundred cases were described in the literature since the 19th century and even though it is rare, it must be verified whenever it is possible to avoid postoperative complications.

PP-75
Young gynecologists and basic pelvic anatomy
Sarah Mizrahi, Michel Cosson, Chrysèlle Rubod, Géraldine Giraudet
Lille University Hospital, Lille, France

Background: Anatomy is often underestimated by medical students but it is an essential requisit to every surgeon. In France, medical students learn anatomy mainly in the first years of their curriculum before they even choose their specialty. Young gynecologists follow a 5-year residency to complete their training but they feel that their knowledge in anatomy is insufficient and may even be dangerous for patients. Our study aims to assess the level in anatomy of young gynecologists. Material and Methods: A survey was performed on residents in gynecology at the Lille University Hospital. Questions about their background as well as a test of knowledge assessment in basic pelvic anatomy is was performed. Result: 52 residents at the Lille University Hospital answered a one-page survey. They all have a various experience of surgery: a one to five years experience in gynecology. More than 90% of the residents interrogated feel that their knowledge in anatomy is insufficient. None of them answered correctly to all the basic anatomy questions. Conclusion: It is difficult to imagine a surgeon that is not well trained technically but also that does not master the anatomical region he is exploring. Young gynecologists have insufficient knowledge in basic anatomy and it is important and urgent to establish a pedagogical program based on the pelvic anatomy during their training.

PP-76
Adverse Effects of Intraoperative Blood Loss on Long-term Outcomes after Curative Gastrectomy of Pat
Akira Mizuno, Mitsuru Kanda, Daisuke Kobayashi, Chie Tanaka, Naoki lwata, Suguru Yamada, Tsutomu Fujii, Goro Nakayama, Hirohiko Sugimoto, Masahiko Koike, Mitsitaka Fujiwara, Yasuhiro Kodera
Department of Gastroenterological Surgery (Surgery II), Nagoya University Graduate School of Medicine, Nagoya, Japan

Background: Gastrectomy with systemic lymphadenectomy sometimes causes excessive bleeding even by experienced surgeons. The aim of this study was to evaluate how intraoperative estimated blood loss (EBL) affected on the long-term outcomes after curative surgery of patients with stage II/III gastric cancer (GC). Material and Methods: This study included 203 patients with stage II/III GC who did not receive perioperative blood transfusion between 1999 and 2015. The optimal cutoff and the prognostic significance of EBL were determined retrospectively. Result: The median EBL was 285 ml. Receiver operating characteristic curve
PP-77
A Study of Bilateral Non-Simultaneous Hip Fractures in the Context of an Ageing Population
Prasad Ellanti, Kunal Mohan, Adeel Memon, Niall Hogan, Tom Mccarthy
Department of Trauma & Orthopaedics, Saint. James’s Hospital, Dublin 8, Ireland

Background: In modern healthcare, hip fractures are a significant cause of morbidity and mortality in the elderly population. Patients presenting with non-simultaneous bilateral hip fractures are increasingly numerous. Material and Methods: A retrospective study of patients that sustained a neck of femur or a pertrochanteric hip fracture presenting to our unit between January 2007 and December 2010 was undertaken. Demographic data of age, sex and type of fracture was recorded. Additionally, in patients with a previous contralateral hip fracture, the age of initial fracture, the type of 1st and 2nd fracture and the time in months between the two fractures was noted. Result: A total of 749 hip fractures were treated during this time, of which 630 were over the age of 60. 462 of these were females (73.5%) and 167 males (26.5%), with a mean age of 79.9 years (60-99). There were 457 neck of femur fractures and 173 pertrochanteric fractures. Of this cohort, 40 patients had a previous contralateral hip fracture. The average age at first and second fracture was 82.4 and 88.6 years respectively. The average time interval between fractures was 70 months (1-75). 66% of fractures were intracapsular in both episodes. The majority of patients had a similar fracture type at the second incident. Conclusion: Our findings show that 2nd hip fractures occur at similar anatomical location in most patients, on the contralateral side. The average time interval between fractures is 5-6 years. Early identification of this patient cohort on first admission is of paramount importance in prevention of subsequent hip fractures.

PP-78
Preliminary results on the characteristics of 500 consecutive patients with anterior cutaneous nerve entrapment syndrome (2013–2014)
Frederique Mu Mol, Robbert Maatman, Marc Scheltinga, Rudi Roumen
Maxima Medical Center, Veldhoven, the Netherlands

Background: Approximately 1500 patients with anterior cutaneous nerve entrapment syndrome (ACNES) have been treated at the SolviMax Center of Excellence for Abdominal Wall and Groin Pain (Eindhoven, The Netherlands) in the period 2006-2016. A series of this size has not been described in literature yet and could serve as a means to describe the population. ACNES is caused by an ongoing entrapment of terminal branches of intercostal nerves in the rectus abdominis, causing debilitating pain. The diagnosis is based upon a combination of characteristics in anamnesis and physical examination. Treatment options are injection therapy or a neurectomy, which have a relative success rate of 30% and 70%. Recurrences after initial successful treatment have been observed. Material and Methods: Patient data has been collected retrospectively from patient files of consecutive patients diagnosed with ACNES in 2013-2014. 499 patients were identified and analyzed for baseline characteristics using SPSS 22. After completion of the database a prediction model will be created to identify predictors for therapy success and risk for recurrence. Result: Baseline characteristics showed that gender ratio was 1:4 (m:v), mean age 42 years (±18,1) and mean BMI 25.4 (±5.3). Patients had been suffering from ACNES before diagnosis for an average of 4.5 years. Average pain was 5.4 (±2,2) on a numeric pain rating scale, with peak scores up to 8.1 (±1.6). 12.5% of patients had bilateral ACNES. Conclusion: Baseline characteristics of ACNES describe a young population, predominantly female, suffering from average to severe pain. Prediction models for treatment success and risk of recurrence are currently being developed.

PP-79
Cholecystokinin as a Trigger for Acute Gallstone Pancreatitis
Vita Myessoyedova
Ivano-Frankivsk national medical university, Ivano-Frankivsk, Ukraine

Background: Opie explained the theory of "common channel" which is existing between the common bile duct and the pancreatic duct. Material and Methods: There is a contradiction since the majority of patients (20 to 60%) don't fall under the "common channel" theory. 48 patients (20 males and 28 females) have been assessed. 26 out of them have been diagnosed with acute calculous cholecystitis (1st study group), the rest 22 have been diagnosed with acute pancreatitis. However, the difference was statistically not significant (p < 0.05). A series of 48 patients was treated at the Maxima Center of Excellence for Abdominal Wall and Groin Pain (Eindhoven, The Netherlands) during the period 2006-2016. A single injection of cholecystokinin (CCK-8) in a dose of 25 μg in 2 mL of saline was given as a test dose. CCK is an endogenous hormone that acts as a gastrointestinal hormone, and a trigger for gallbladder contraction. Result: The response was observed as a change in pain intensity, a decrease in pain duration, and an improvement in patient well-being. Conclusion: Cholecystokinin is a potential trigger for acute gallstone pancreatitis. Further studies are needed to determine the exact role of CCK in the pathogenesis of gallstone pancreatitis.
calculus cholecystitis and acute pancreatitis (2nd study group). **Result:** As soon as there are no reference values for cholecystokinin serum concentration in literary sources, we have defined average values assessing inspection group (almost healthy people), that constitute 1,60 +/- 0,02 ng/ml. In the first study group cholecystokinin (CCK) level constituted 2,03 +/- 0,02 ng/ml and in the second study group – 4,18 +/- 0,03 ng/ml. Laparoscopic cholecystectomy has been carried out on all the patients. The highest decrement of cholecystokinin level during the postoperative period has been observed in the second group where measures are usually normalised 8 days after an operation. The tendency for CCK level decrement is also observed in the 1st study group, but is not as dynamic and is normalized in 3 days after an operation due to relatively low initial CCK level. Results of patient laboratory assessments have shown that cholecystokinin (CCK) is directly associated with α-amylase and γ-glutamyltransferase level. **Conclusion:** So, calculus cholecystitis complication in the form of acute gallstone pancreatitis is most likely associated with the rising of cholecystokinin (CCK) α-amylase and γ-glutamyltransferase serum concentration.

### PP-80
Renal Function Does Not Deteriorate after Elective Digestive Surgery in Severe Chronic Kidney Disease Patients in the Predialysis State

**Background:** Background: The incidence of CKD is increasing with increases in the proportion of the aging society and in patients with lifestyle-related diseases. The outcome of patients on maintenance hemodialysis undergoing abdominal surgery has been described in the literature. However, the postoperative outcome in stages 4 and 5 CKD patients who are in the predialysis state is not well known, which presents an important clinical question. Purpose: To clarify the short-term outcomes of predialysis patients with severe chronic kidney disease (CKD) who had undergone elective digestive surgery for neoplasms. **Material and Methods:** Methods: We retrospectively analyzed the clinical data of 24 predialysis patients with CKD stages 4 and 5 who had undergone elective gastroenterological surgery from January 2000 to December 2011. The preoperative estimated glomerular filtration rate (eGFR) was compared with that prior to discharge, and the transitional change in the perioperative eGFR was analyzed. **Result:** Results: The morbidity and mortality rates were 58.3% and 4.2% for patients with CKD stage 4 and 5, respectively. Four patients experienced severe postoperative complications; however, no patients required dialysis perioperatively. The mean eGFR value determined immediately prior to discharge was significantly higher than the preoperative value (28.7 ± 10.6 vs. 22.1 ± 5.4; P = 0.015). Most (66.7%) patients had the lowest eGFR preoperatively. During the postoperative period, the most common time point with the lowest eGFR was postoperative day 1. **Conclusion:** Conclusion: Renal function does not deteriorate after elective digestive surgery for neoplasms in severe CKD patients in the predialysis state.

### PP-81
Intermittent abdominal mass secondary to renal pelvic dilatation from pelvi-ureteric junction obstruction

**Joseph M Norris**, **Florence Wedmore**, **Peter Kyle**, **Sangeeta Ravi-Shankar**

**a University College London, London, United Kingdom; b The Whittington Hospital, The Whittington Hospital NHS Trust, London, United Kingdom; c King’s College Hospital, King’s College Hospital NHS Foundation Trust, London, United Kingdom**

**Background:** The differential for abdominal mass is wide and includes hernia, malignancy and subcutaneous lesions. Rarely, urological pathology may present in this way, however, due the rarity infrequency of this presentation, successful diagnosis may prove challenging to the clinician. Here, we present a fascinating case of intermittent abdominal mass due to renal pelvis dilatation from pelvi-ureteric obstruction. **Material and Methods:** A 40-year-old lady presented to us with a painful, intermittent abdominal mass in the right upper quadrant. Unusually, she had noted that this lump was often associated with drinking alcohol or caffeine. She has past medical history of recurrent miscarriage and eczema, but significantly no abdominal surgery. On examination, she had a tender mass in the right upper quadrant, with no cough impulse palpable. Bloods and urine were unremarkable. **Result:** Abdominal computed tomography and ultrasonography were all initially normal, however, they were not undertaken when symptoms were present. When ultrasound scanning was repeated when symptomatic, both the radiologist and clinicians were surprised to note that the mass represented a distended renal pelvis and calyces. Subsequent DMSA imaging demonstrated right-sided pelvi-ureteric obstruction and renal pelvic dilatation (though renal function was preserved and equal bilaterally). All imaging is included with this report. **Conclusion:** Pelvi-ureteric obstruction is a very rare cause of abdominal mass, which both urological and general surgeons must remain cognisant of when assessing patients with abdominal symptoms. It is important to consciously consider both common and rare differential diagnoses, and not to ignore subtle nuances in the history which may clarify the clinical picture.
PP-82
Novel thermosensitive antiretropulsion gel for ureteric calculus fragmentation: Description of surgical technique

Joseph M Norris a, b, c, James N Armitage c, Oliver J Wiseman c, Nishim C Shah c

a University College London, London, United Kingdom; b University of Cambridge, Cambridge, United Kingdom; c Addenbrooke’s Hospital, Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

Background: BackStop® is a novel antiretropulsion material utilising colourless, reverse thermosensitive gel to form a ureteric luminal plug, proximal to the calculus, to prevent cephalad migration. Here, we describe the surgical technique, including our refinements, following initial experience with the device. Additionally, we consider optimal clinical situations for its use. Material and Methods: Guidewire insertion and ureteroscopy are first undertaken to visualise the calculus, followed by retrograde contrast injection to fill and opacify the proximal ureter and renal pelvis. Next, the BackStop® deployment catheter is inserted through the ureteroscope, approximately 4-5 cm beyond the calculus. Then, BackStop® gel is deployed through the catheter, beyond the calculus. The amount of gel required to occlude the ureter can be judged by monitoring displacement of contrast, fluoroscopically. Safe laser fragmentation can then be undertaken, with reassurance that neither the stone nor any fragment will undergo cephalad displacement. Upon completion, gel can be removed by flushing with cool saline. Result: BackStop® gel may be used in patients with calculi at any ureteric site, provided there is sufficient proximal length in which to deploy the material. We have found BackStop® ideally suited to primary ureteroscopy (unstented ureters) as the ureteric wall is less flexible and may be occluded with a smaller gel volume. A larger volume of gel is necessary when BackStop® is used in ureters which have been previously stented. Conclusion: BackStop® gel is a safe, effective adjunct to stone surgery. The technique described here will aid urologists in correct utilisation, and will assist with the identification of appropriate patients.

PP-83
The Optimal Cut-off Value of the Prognostic Nutritional Index for Hepatocellular Carcinoma

Yukiyasu Okamura d, Teiichi Sugiuira d, Takaaki Ito d, Yusuke Yamamoto d, Ryos Ashida c, Katsuhiko Uesaka d

a Division of Hepato-Biliary-Pancreatic Surgery, Shizuka Cancer Center Hospital, Shimo-Nagakubo, Sunny-Nagaizumi, Shizuoka, Japan; b Division of Hepato-Biliary-Pancreatic Surgery, Shizuka Cancer Center Hospital, Sunny-Nagaizumi, Shizuoka, Japan

Background: Several papers have shown that the PNI is associated with the survival. The aim of this study was to determine the optimal cut-off value of the preoperative prognostic nutritional index (PNI) for the prognosis according to the Tumor Node Metastasis (TNM) stage for hepatocellular carcinoma (HCC) after curative resection. Material and Methods: This retrospective study enrolled 375 patients. The optimal cut-off value of the PNI was determined according to the TNM stage, and the overall survival was compared between the low and high PNI groups. Result: The median PNI was 49.2 (range, 30.2–67.4). The optimal cut-off value of the PNI decreased with increasing TNM stage; 52, 47 and 43 were determined in stage I, II and III, respectively. The rates of patients in the low PNI group with stage I, II and III disease were 70.4%, 39.0% and 20.0%, respectively, and the majority of patients with stage I disease was included in the low PNI group. A low preoperative PNI predicted a poorer overall survival than a high PNI in stage I (P < 0.001) and II (P = 0.002), but not stage III (P = 0.052). The multivariate analysis revealed a preoperative PNI to be an independent predictor of the overall survival in stage I and II (hazard ratios: 6.96 and 3.57, P = 0.001 and P = 0.001, respectively). Conclusion: The present study shows that the optimal cut-off value of the PNI for the prognosis differs among the TNM stages and the preoperative PNI is considered to be a favorable prognostic factor for stage I HCC.

PP-84
A Rare Cause of Acute Abdomen: Splenic Infarct Due to Celiac Trunk Thrombosis

Zafer Kilbaş, Yaşar Subutay Peker, Oğuz Hançerlioğlu, Mehmet Inci, Rahman Şenocak, Hüseyin Sinan

Gülekhane Military Medical Academy, Department of General Surgery, Ankara, Turkey

Background: Thrombosis of celiac plexus including splenic/hepatic arteries is a rare but devastating problem. There is no consensus about which treatment modality is optimum. We aimed to discuss the treatment modalities of celiac trunk thrombosis by means of a case. Material and Methods: Case is presented with review of the literature. Result: 37-years-old female patient presented C emergency department with left upper quadrant pain. She had a history of pulmonary thromboembolus as a result of deep vein thrombosis and was administered oral anticoagulant therapy for six months. Physical examination revealed tenderness and muscular rigidity in left upper quadrant. Laboratory tests were as follow: WBC: 17.000/µL, platelet: 657.000/µL and CRP: 155.00mg/L. Radiologic imaging and additional CT-angiography showed splenic infarct due to complete ob-
struction of celiac trunk resulting from thrombosis. But fortunately, perfusion of liver was normal by means of collateral circulation between superior mesenteric artery and hepatic artery. All blood test and genetic analysis related to coagulopathy were within normal limits. Conservative management and high-dose enoxaparine treatment was handled for 1 week. However, recanalization was not observed, and patient underwent laparoscopic splenectomy because of ongoing pain and splenic necrosis. **Conclusion:** There is still no consensus on management of vascular thrombosis, including celiac plexus. Medical treatment with high-dose enoxaparine was preferred as the initial approach with a hope of recanalization. Endovascular techniques may be a chance for isolated splenic artery thrombosis, but it has risks of triggering embolic mobilization of thrombus which may be fatal. All treatment modalities should be kept in mind for the management of patients with vascular thrombosis.

**PP-85**
**Extremely Rare Case: Invasive Papillary Breast Carcinoma of Male Patient**
Ramazan Yıldız a, Yaşar Subutay Peker b, Ismail Hakki Özerhan a, Ayhan Özcan a
a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey; b Gülhane Military Medical Academy, Department of Pathology, Ankara, Turkey

**Background:** Invasive papillary breast carcinoma (IPBC) is a rare case with incidence of 0.5-2% of all breast cancers and much more rare at male. In-situ and invasive types of papillary breast cancer is most common at postmenopausal female where at this case we presented a male patient with non-metastatic IPBC. **Material and Methods:** Case of a male patient with IPBC is presented. **Result:** 83-years-old male patient with mass at left breast applied to our clinic. Physical examination showed mass of 1.5x2.5cm localized just posterior of the nipple without axillary pathological mass. Patient was evaluated radiologically. Breast ultrasonography and computerized tomography confirmed the physical examination. Fine needle aspiration biopsy reported invasive carcinoma without subtype. Breast mass had SUVmax value of 3.7 at PET-Scan without nodal and organ metastasis. Left mastectomy with sentinel lymph node dissection(SLND) by sentinel node and occult lesion localization(SNOLL) was applied to patient. Intraoperative frozen section evaluated the SLND as unpredictable and axillary sampling performed. Histopathology showed IPBC. **Conclusion:** Breast cancer is the most common cancer for females where IPBC is rare and much more rare at male. IPBC is usually well-defined bordered, with microscopic view of finger like structures. Co-incidence ductal carcinoma in-situ is common at IPBC. Patients may be evaluated for estrogen-progesteron receptor and HER2-neu and chemo-hormo-therapy can be medicated. Surgery is the golf standard treatment however breast preserving or mastectomy and radiotherapy can be applied but neoadjuvant chemotherapy is being debated for IPBC. This rare type of breast cancer may comeout with more rare conditions as it come out with male patient at our case.

**PP-86**
**Is Acute Mesenteric Ischemia a Surgical Problem or Is Surgery Overtreatment Where Endovascular Technique/Hybrid Technique Approach Is Enough for Life Saving Treatment?**
Yaşar Subutay Peker a, Murat Urkan a, Ümit Alakus a, Şahin Kaymak b, Orhan Kozak c
a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey

**Background:** Management of acute mesenteric ischemia (AMI) is a race against time with mortality (60-80%). Should surgery with high mortality/morbidity be applied which AMI has high risk of mortality/morbidity? We aimed to discuss weather surgery is overtreatment or effective treatment for AMI. **Material and Methods:** Keywords ‘AMI/acute mesenteric artery ischemia/mesenteric artery ischemia/mesenteric artery obstruction/non-operative management of mesenteric artery obstruction’ were searched with “PubMed” for 2015. Case series/reviews were evaluated. **Result:** Study-1, 439 patients, 27 (6%) endovascular technique (ET), 23 (5%) hybrid technique (HT), ET results with 2.5 fold decreased death(p:0.018), less complication.Study-2, 13 patients with ET.6 (46%) success, 5 (39%) relaparotomy, 4 (31%) 30-day mortality.Study-3, 73 patients, 13 (18%) ET with 67% survival, 37 (51%) bowel resection(BR) with 44% survival.Study-4, 5 ET patients, 2 operated for BR without mortality.Study-5, 40 patients, only 2 ET intervened 16-hours after disease upset and 5 survived.15 patients, 2 ET intervened before 16-hours before onset, all survived. Study states, 16th hour is cutoff-line for survival and preservation of functional bowel(p:0.0009). Study-6, 83 patients had 11 (13%) only-ET approach, 18 (21%) HT with 89% survival/7% 30-day mortality. Study suggests multidisciplinary approach. Study-7, 37 ET approach, 27(73%) surgery as second step intervention (SSI) with 15 (40.5%) BR, 10 (27%) mortality. Study-8, 6 ET, 2 (33%) recover, 3 (50%) BR as SSSI, 1 (17%) mortality. Study-9, 66 patients, 50 (76%) ET, 44 (66%) successful ET, 6 (12%) failed ET, 20 (45%) of successful ET had laparotomy, 17 (85%) of 20 had BR.10 (22%) of 44 successful ET patients died. **Conclusion:** 762 patients were evaluated with 114 (15%) ET, 99 (13%) HT for treatment.ET seems feasible for AMI where SSSI may be needed. ET decreases the mortality/morbidity of SSSI, increases survival. Early intervention at AMI must be kept in mind.
PP-87
Neurofibromatosis as a Rare Cause of Unilateral Pseudogynecomastia: Case Report
Zafer Kilbas a, Yaşar Subutay Peker a, Ramazan Yıldız a, İsmail Hakkı Özerhan b, Muzaffer Durmuş b
a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey; b Gülhane Military Medical Academy, Department of Plastic and Reconstructive Surgery, Ankara, Turkey

Background: Neurofibromatosis is an inherited case with incidence of 1/3000 and presented with café-au-lait spots and neurofibromas. Type and localization of neurofibromas determine the severity of the disease. Herein, we aimed to share a rare case of neurofibromatosis presenting with unilateral pseudogynecomastia.

Material and Methods: Case report and review of the literature. Result: 20-years-old male patient presented with unilateral gynecomastia. Physical examination confirmed the gynecomastia and additional neurofibromas and café-au-lait spots applied on his left chest. Medical history included excisional biopsy for breast mass, but histopathological result could not be obtained. Patient was evaluated for neurofibromatosis due to accompanying physical signs. Neurologic evaluation was normal with normal electroencephalography, cranial-MR, KENT-EGY intelligence test and neurological examination. Breast MRI revealed multiple neurofibromas in left breast and they were showing continuity towards thorax. Fine needle aspiration biopsy from breast was reported as neurofibroma without malignancy. With the help of thoraco-abdominopelvic CT, patient was found to have neurofibromas localized around abdominal-aorta, left posterior pleural surface and left breast. He was operated from left breast with keyhole incision for neurofibroma. Histopathologic diagnosis was neurofibroma as expected. Conclusion: Neurofibromatosis may be presented with different neurological or dermatological symptoms which unilateral pseudogynecomastia is one of them. This is the very rare case (less than 15 at English literature) for neurofibromatosis presenting with pseudogynecomastia. Surgeons must keep neurofibromatosis in mind for etiology of unilateral pseudogynecomastia.

PP-88
Omental Torsion between Liver & Anterior Abdominal Wall
Ali Kagan Coskun, Umit Alakus, Mehmet Ince
Gülhane Military Medical Academy, Ankara, Turkey

Background: A rare cause of acute abdominal pain is omental torsion. The conservative management is in the foreground. The intraoperative exploration and the pathological evaluation of the resected material are needed for definitive diagnosis. We would like to present a case of primary omental torsion.

Material and Methods: A 26-year-old man were admitted to the emergency department with right upper quadrant pain. An abdominal tenderness at right upper quadrant without muscular rigidity were detected at the physical examination. A mild increase at white blood cell count was noted with 14400 /mL. The omentum was located between liver and anterior abdominal wall at computerized tomography. Result: The patient underwent laparoscopy. The ischemic omentum stuck to falciform ligamentum between liver & anterior abdominal wall was seen. Resection was performed. Postoperative period was uneventful. Conclusion: A rare cause of acute abdomen is primary omental torsion. Whether the diagnose at preoperative period was difficult, the usage of the radiological imaging is the critical tool. Especially for the confusing diagnose, the use of advanced radiologic techniques has an important role for the surgeons.

PP-89
Our Experience and Management of Appendical Incidental Tumors
Oğuz Hançerlioğulları a, Yaşar Subutay Peker a, Süleyman Deniz Kahraman b, Mahmut Yılmaz a, Zafer Kilbas a, Öner Mentes a, Orhan Kozak a, Armağan Günl a, Melih Kılıç b
a Gülhane Military Medical Academy, Department of General Surgery, Ankara, Turkey; b Gülhane Military Medical Academy, Department of Pathology, Ankara, Turkey

Background: Malign neoplasms of appendix (MNA) are one of the biggest problems for the patient and surgeon because the treatment protocols may differ according to the type, localisation and the size of the tumor. We aimed to search for MNA at patients who were prediagnosed as acute appendicitis and had surgery of appendectomy.

Material and Methods: Patients who had appendectomy between October-2012/May-2015 at our clinic were evaluated retrospectively for MNA without any limitation. Result: 1332 patients and 20 of 1332 (0.01%) patients had MNA. Mean age was 44.6±14.41 years. Male/female was 13 (65.00%) / 7 (35.00%). Mean preoperative WBC was 9645.0±4490.3/mm³. 9 (45.00%) patient's appendix were evaluated radiologically and mean diameter was 10.65±4.16mm. None of them had meckel. Appendectomy was performed to 19 (95.00%) patients and 1 (5.00%) had appendectomy+partial caecal resection. Histopathological diagnosis was low-grade mucinous neoplasm in 9 (45.00%), appendiceal adenoma in 6 (30.00%), neuroendocrine tumor in 4 (20.00%) and metastases of gastric adenocarcinoma in 1 (5.00%) patient. The mean hospitalization was 6.1±2days for 19 (95.00%) patients. Mortality was 1 (5.00%) whose histopathological result was metastasis of gastric cancer to appendix. Conclusion: Appendiceal tumors are 0.08% of cancers, 0.5% of gastrointestinal tumors and 1% of appendectomies. Even carcinoid tumors of appendix were tought to be the most common, now it is debated at recent studies that mucinous tu-
mors may be more common than carcinoids, which the results of our study supports it. Incidence of appendiceal adenocarcinomas are 0.12/1,000,000 annually. These rare cases of appendix may cause problems both for doctor as medicolegal issues and patient as progressive disease. For this reason, histopathological results of appendectomies must be evaluated by the surgeon for the need of further operations, which is usually been passed over.

PP-90
What Is the Dissection Limit for Metastatic Papillary Carcinoma of Thyroid
Mustafa Öner Menteş, Zafer Kilbas, Yaşar Subutay Peker, Murat Urkan, Ramazan Yıldız, Ismail Hakki Ozerhan, Orhan Kozak

Background: Papillary carcinoma of thyroid (PCT) is 1% of all thyroid carcinomas with increasing incidence and more frequent at female sex. PCT has long survival with 82% at non-metastatics. PCT characteristically metastasizes through lymphatic vessels most common to cervical lymph nodes (CLN). At this video presentation, we aimed to share our experience about bilaterally/central neck dissection of bilaterally CLN metastatic PCT patient. Material and Methods: Data/operation video of bilaterally CLN metastatic PCT patient is presented. Result: Thyroidectomy was completed with Kocher incision bilaterally expanded to angulus mandibula. Level-6(central) CLN was dissected and resected. Lateral neck dissection was proceeded from right. Sterno-cleidomastoideus (SCM) muscle sheath was dissected to reach level-2/3/4 CLN behind SCM. CLN were dissected and resected unblock from lateral of carotis sheath, anterior of trapezius muscle and internal jugular vein (IJV). Nervus accessorius, vagal and phgenic nerves were preserved. Same procedure was applied to left CLN. We applied functional neck dissection instead of radical neck dissection by preserving IJV, SCM and spinal accessory nerves. Conclusion: One of the most important prognostic factors at PCT is lymph node metastasis and extent of dissection is significant of survey and local relapse. CLN metastasis at PCT differs from 20-90%. For this reason, all PCT cases requires pre-operative radiological evaluation and biopsy (if needed) of CLN. Thyroidectomy with bilaterally CLN/central lymph node dissection is feasible when operated by experienced surgeons with low/without complication. As in conclusion, we suggest CLD must be preoperatively evaluated and CLN dissection must be applied if needed, at an experienced medical center.

PP-91
What is the optimum treatment of presacral bleeding during rectal surgery?
Zafer Kilbas, Mehmet Ince, Oguz Hancerliogullari, Eyup Duran, Rahman Senocak, Orhan Kozak

Background: Presacral bleeding is a rare but life-threatening complication of rectal surgery. Effective and rapid bleeding control is essential to prevent a fatal outcome. There have been different surgical techniques to manage this condition. But optimum procedure with best results still remains controversial. Material and Methods: Report of a case and review of the literature. Result: A 67-year old woman, with the diagnosis of mid-rectal cancer underwent low anterior resection. Her past medical history included previous pelvic surgery. After completing posterior rectal dissection, an undesired bleeding from the presacral venous plexus occurred. Firstly, tamponade with gas compresses was applied, then haemorrhage was tried to get controlled with haemostatic agents and vessel sealing systems. With these efforts, the degree of bleeding was decreased. But since the bleeding re-activated, pelvic packing with gas compresses was handled. 48 hours later the patient was reoperated and unpacking was applied. It was noticed that bleeding was successfully controlled with tamponade. Conclusion: The most important way of preventing presacral bleeding is to proceed into the plane between the fascia propria of the rectum and the presacral fascia. Many methods with different success rates have been described to control presacral bleeding during rectal surgery. Topical haemostatic agents, tacking techniques, suture and coagulation methods and traditional pelvic packing are some of the most frequently used ones. Since the vessel may retract into the sacrum, conventional haemostatic manoeuvres may fail. Despite the new developed energy devices and haemostatic agents, traditional pelvic packing is still one of the most effective technique for presacral bleeding.
PP-92
Prophylactic use of polypropylene meshes pre-soaked in antiseptics (chlorhexidine, allicin) to prevent bacterial infection in an experimental model of abdominal wall repair

Bárbara Pérez-Köhler a, b, Francisco García-Moreno a, b, Paloma Pérez-López a, b, Gemma Pascual c, b, Juan Manuel Bellón a, b
a Department of Surgery, Medical and Social Sciences, Faculty of Medicine and Health Sciences, University of Alcalá, Madrid, Spain; b Biomedical Research Networking Centre on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain; c Department of Medicine and Medical Specialties, Faculty of Medicine and Health Sciences, University of Alcalá, Madrid, Spain

Background: The combination of biomaterials for hernia repair with antiseptics such as chlorhexidine or allicin (a natural antibacterial agent) could decrease the bacterial adhesion to the material surface. This study assesses the efficacy of pre-soaking reticular polypropylene meshes in chlorhexidine, alone or combined with allicin, for preventing bacterial infection in a short-time hernia repair rabbit model.

Material and Methods: Partial hernial defects were created on the abdominal wall of 21 New Zealand White rabbits and contaminated with 0.5 mL of 106 CFU/mL Staphylococcus aureus ATCC25923. The defects were repaired using the antimicrobial mesh DualMesh Plus (control) or a Surgipore aureus ATCC25923. The defects were repaired using the antimicrobial mesh DualMesh Plus (control) or a Surgipore mesh presoaked in either chlorhexidine (0.05 %) or allicin-chlorhexidine (900 µg/mL-0.05 %) (n=7 each). Fourteen days post-implant, specimens were taken to evaluate mesh contraction, bacterial adhesion to the implant surface, host-tissue incorporation and macrophage response. Result: The polypropylene implants allowed the infiltration of loose connective tissue across the mesh pores, while the DualMesh Plus implants were surrounded by a thin fibrous capsule. The highest bacterial clearance was found in both DualMesh Plus and chlorhexidine-soaked implants. Meshes soaked in allicin-chlorhexidine showed differently sized abscesses and living bacteria, as well as a diminished macrophage response and the highest mesh contraction. Conclusion: The presoaking of reticular polypropylene materials with a low concentration of chlorhexidine provides the mesh with antibacterial activity without disrupting tissue integration. This antiseptic could be utilized as a prophylactic treatment to resist infection by prosthetic mesh during hernia repair.
PP-94
Laparoscopic versus open distal pancreatectomy: Surgical stress response comparison in the porcine model
Radek Pohnan a, Miroslav Ryska a, Jaroslav Kalvach a, Ludek Hana a, Jaroslav Pejchal b
a Department of surgery Central Military Hospital, Prague, Czech Republic; b Faculty of Military Science, Hradec Kralove, Czech Republic

Background: In the present days is the laparoscopic surgery an established alternative to conventional surgery in a variety of diseases. Although there have been already developed techniques of laparoscopic distal pancreatectomy in experimental animals and in human patients, so far is not enough information about their pathophysiological mechanisms, especially the impact of surgical stress response. The objective of this study was to compare the surgical stress response of conventional distal pancreatectomy versus laparoscopic distal pancreatectomy using the inflammatory protein levels in the experiment on porcine model. Material and Methods: In the group of 10 pigs was performed conventional distal pancreatectomy and in the group of 10 pigs was performed laparoscopic distal pancreatectomy. In both groups were monitored intraoperative and postoperative complications, operative time, CBC and serum levels of pancreatic amylase. Postoperative stress was compared by determining serum levels of interleukin 1, 6 and CRP. Result: Kinetics of the plasmatic levels of interleukin 1, 6 and CRP, CBC and serum levels of pancreatic amylase in both experimental groups of open and laparoscopic distal pancreatectomy was similar in all measured parameters. In the both groups (open vs laparoscopic) was similar length of the operation (mean time 55 vs 57 min, p 0.221). There were 4 complications - surgical site infections in the group of open distal pancreatectomy (p 0.087). Conclusion: When evaluating surgical stress response in this experiment, laparoscopic distal pancreatectomy did not reach significantly different values of immune response compared to conventional open distal pancreatectomy.

PP-95
5-year experience of sternal fractures in a Major Trauma Centre: Demographics and resource implications
Florentina Luiza Popescu a, C J Bond, Omar Nawaytou, S J Rooney, T R Graham
Queen Elizabeth Hospital, Birmingham, United Kingdom

Background: Sternal fractures are a relatively uncommon consequence of thoracic trauma but imply a significant energy transfer to the mediastinum. Most result from high impact injuries, but occasionally occur due to attenuated mechanical resistance from underlying bone pathology. Therefore we reviewed recent experience of sternal fractures in a large regional UK major trauma centre. Material and Methods: All patients with a sternal fracture reviewed May 2010 – October 2015 were retrospectively identified from our PATS database. Demographics, additional injuries and length of stay were collected from this. Result: 22 patients had sternal fracture. Median age 65y (IQR 47-74), 15 male (68%). All cases had high impact injuries, 14 RTAs (64%), 7 falls and 1 crush injury; although 3 cases suffered osteoporosis. In 8 patients (36%) the injury was isolated. Thoracic visceral injuries were modest, 3 with pulmonary contusion, 2 pneumothorax and 1 a haemothorax; no myocardial confusions. Otherwise significant other injuries were usually bony, 9 patients with multiple rib fractures and 6 with spinal fractures. 2 patients required intubation, 1 a period of CPR. No mortality resulted. Median length of stay was 9 days (IQR 4–15). Conclusion: Sternal fractures were a relatively infrequent injury, feature of multiply injured patients. The population was predominantly male, of higher median age than normal for major trauma patients, reflecting perhaps increasing bone frailty with age. Surprisingly, no underlying mediastinal injuries were witnessed. Despite this the resource burden was significant, reflecting the concomitant injuries.

PP-96
Peripheral venous cannulation for the junior surgeon: A novel technique for vasodilatation in tricky cases
Sangeeta Ravi-Shankar a, Joseph M Norris b
a King’s College Hospital, King’s College Hospital NHS Foundation Trust, London, United Kingdom; b University College London, London, United Kingdom

Background: Establishing venous access is an essential clinical procedure performed on almost all surgical inpatients, in both emergency and elective settings. The safest and commonest method of establishing access is via a cannula inserted into a peripheral vein, traditionally by an inexperienced junior surgeon. The general technique for peripheral venous cannulation is well-established. However, when starting out, junior surgeons may experience difficulty in inserting cannulae successfully. This problem has multifaceted aetiology: lack of cannulation teaching at medical school, lack of experience globally, and partly due to the innate fear of hurting or harming patients that we all share. Material and Methods: Here, we present a simple, novel technique to greatly increase the success rates of peripheral venous cannulation. The technique involves the judicious use of warmed gauze placed within standard clinical gloves, to induce local peripheral vasodilatation. To complement the technique, we have conducted a succinct review of the peripheral cannulation literature, and included detailed technique photography. Result: We have had highly successful results utilising this approach on surgical wards. The technique is
applicable to both preoperative and postoperative surgical patients, and to all gauges of cannulae. The detailed photography that we present here will make the technique easy to learn for all junior surgeons. Finally, our succinct literature review demonstrates alternative techniques, and confirms the novel nature of our approach. Conclusion: We recognise that cannulation is a stressful aspect of a junior surgeon’s job, and hope our technique will go some way to lessen the pain for both surgeon and patient.

PP-97
The Clinical Impact of Preoperative Upper Endoscopy in Bariatric Surgery, 498 Consecutive Cases
Mark Tenhagen a, Beata Reiber b, Michiel Hunfeld b, Huib Cense b, Ahmet Demirkiran b
a VU medical center, Amsterdam, the Netherlands; b Red Cross Hospital, Beverwijk, the Netherlands

Background: To the clinical impact of preoperative esophagogastroduodenoscopy (EGD) in bariatric surgery. Material and Methods: A retrospective analysis of 498 consecutive cases scheduled for bariatric surgery. Upper gastrointestinal symptoms and proton pump inhibitor (PPI) use were recorded. All findings at EGD were recorded, as well as their treatment implications. Result: 498 patients were included of which 414 (83%) females. Mean age was 45.3 years, body weight 125.8 kg and BMI 43.6 kg/m². A total of 457 (92%) EGD’s were performed. No abnormalities were found in 164 (36%) cases, one in 179 (39%) and two or more in 114 (25%). Medical treatment was initiated in 81 (17.6%) cases. Surgery was postponed in 7 (1.5%) cases pending treatment, 1 operation was cancelled due to gastric adenocarcinoma and in 2 cases RYGB was performed instead of GS. Main abnormalities found were; gastritis 164 (36%), sliding diaphragmatic herniation 129 (28%), esophagitis 90 (20%), ulceration 10 (2.2%), and adenocarcinoma 1 (0.2%). Helicobacter Pylori testing was performed in 456 (92%) cases and positive in 70 (15%). Age was the only independent risk factor for abnormal findings at EGD (p = 0.006). Conclusion: Performing EGD prior to bariatric surgery reveals abnormalities in 64%. Surgery was rescheduled or cancelled in 8 patients (1.7%), and a change in type of procedure occurred in 2 (0.4%). In 17% the findings resulted in medical treatment without impact on surgery date and type. Age was the only risk factor for finding abnormalities at EGD. The question remains whether these findings justify routine endoscopy in all bariatric surgical candidates.

PP-98
Global perspectives on rhinoplasty exposure amongst plastic surgery trainees
Iñigo Roa Esparza a, Kain Nakul b, Charles Malata b, c
a University of the Basque Country Medical School, Bilbao, Spain; b a. Department of Plastic Surgery, Addenbrooke’s Hospital, Cambridge, United Kingdom; c a.c Anglia Ruskin University Postgraduate Medical Institute, Cambridge and Chelmsford, United Kingdom

Background: Training in rhinoplasty procedures forms an important part of the plastic surgery curriculum. UK trainee experience in rhinoplasties has declined over time owing largely due to a reduction in management of nasal trauma, changes in funding afforded to rhinoplasty procedures and preferential GP referrals to ENT surgeons. In contrast, the otorhinolaryngology (ENT) trainees continue to obtain and maintain their skills from septorhinoplasties secondary to trauma and ‘functional’ rhinoplasties. Anecdotal evidence suggests training in rhinoplasty procedures in other countries has not been similarly affected, if anything, has improved owing to different management pathways of nasal trauma. Material and Methods: To ascertain global differences in rhinoplasty training, we conducted an online five-question survey. The operating experience in rhinoplasty procedures of plastic surgery trainees, at different training levels, in different plastic surgery units across the five continents was analysed. Result: There were over 200 number respondents globally, predominantly from the USA and Canada (70%). Similarly to North America, most European trainees (17%), irrespective of training year, had observed or assisted in less than 5 rhinoplasties. Other counterparts from Australia and New Zealand (5%), South Africa (5%), South America (1%) and Turkey (1%) corroborated the need for more exposure. Conclusion: We discuss the implications of this survey in terms of how trainees compare to their international counterparts and with respect to residency curriculum. The findings of the survey provide a picture of the scarce exposure to rhinoplasties in residency programmes worldwide and may serve to raise awareness among curriculum organizers in pursuance of improving the formation in this area.

PP-99
Modified Appleby procedure in locally advanced body pancreatic adenocarcinoma combined with both arterial and venous reconstruction
Fabien Robin, Aude Merdrignac, Laurent Sulpice
Service de Chirurgie Hépatobiliaire et Digestive, CHU, RENNES, France

Background: Modified Appleby procedure (MAP) is a left pancreatecto-splenectomy combined with resection of the
celiac axis (CA). This major procedure should be discussed in case of controlled locally advanced cancers. **Material and Methods:** A 65 years old, woman, had a pancreatic cancer of the body (involving: i) splenic vessels; ii) the CA and the origin of hepatic artery (CHA); and iii) the porto-mesenteric venous axis. Neoadjuvant treatment consist to FOLFIRINOX regimen (6 cures) followed by chemoradiotherapy. An objective response (higher than 30% of tumor reduction) allows to consider this surgery. **Result:** Through laparotomy MAP was performed. This procedure was combined with portal vein reconstruction using a patch of umbilical vein (dissected in teres ligament). Considering the low caliber of gastro-duodenal artery and the absence of right hepatic artery, common hepatic artery was implanted on the ostium of the CA. As described by Strasberg left Gerota's fascia including a part of left adrenal gland were resected. Pathology report concluded to a well-differentiated carcinoma classified pT3N0–R0. The only postoperative side effect was diarrhea. **Conclusion:** For selected patients, responders to neoadjuvant treatment, MAP should be systematically considered.

---

**PP-100**

**A migrated biliary stent causing entero-enteric fistula, a rare sequel of laparoscopic cholecystectomy**

_Sangram Patil, Shahid Roomi, M Hanif Shiwani_

Barnsley Hospital, Barnsley, United Kingdom

**Background:** Biliary stent is a choice of treatment for a bile leak after laparoscopic cholecystectomy. These stents can migrate distally causing devastating complications. We report a case of entero-enteric fistula caused by stent migration, required surgical intervention. **Material and Methods:** A 72-year-old man underwent a routine laparoscopic cholecystectomy for a symptomatic gall stones which was complicated by bile leak from the cystic duct stump. This was managed by endoscopic insertion of a plastic stent. Six months later, stent migrated to the jejunum and caused an entero-enteric fistula. This was successfully treated by an emergency laparotomy and segmental resection and anastomosis of jejunum jejunal fistula complex. **Result:** Patient recovered well after the operation and was discharged on 5th post-operative day. **Conclusion:** Endoscopically placed biliary stent can migrate and cause serious complications especially if the biliary stenting was for a benign cause. Clinicians should be aware of this very rare sequel of the laparoscopic cholecystectomy.

**PP-101**

**Laparoscopic to Open Cholecystectomy Conversion Risk Factors: A Single Centre 7-year Study**

_Shahid Roomi, Sangram Patil, Hunain Shiwani, Fazain Jarral, Muhammad Hanif Shiwani, Suhail Anwar_  

a Barnsley Hospital, Barnsley, United Kingdom; b St. James Hospital, Leeds, United Kingdom

**Background:** This study aims to evaluate the prevalence of factors in patients who had conversion from laparoscopic cholecystectomy. **Material and Methods:** A retrospective review of medical records was undertaken at a single centre over a 7-year period between September 2009 and September 2015. Factors studied for conversion included; age, sex, choleliathiasis, with or without cholecystitis, gallbladder wall thickness on ultrasound scan, common bile duct stones, pancreatitis, ERCP, previous abdominal surgery, history of gallbladder and intraoperative findings necessitating conversion. **Result:** In a 7-year period, 2031 laparoscopic cholecystectomies were performed at Barnsley General Hospital. Of these, 532 were male (26.1%) and 1499 were female (73.8%). Out of total 70 were converted to open cholecystectomy (3.4%), 29 male conversions (41.4%) and 41 female conversions (58.6%). The mean age was 63.4 years (Standard deviation 14.8) ranging from 36 to 92 years. Significant risk factors for conversion were males (p<0.01), choleliathiasis (48.6%), gall bladder wall thickness >4mm, preoperative ERCP (22.9%), pancreatitis (12.5%), previous abdominal surgery (23%), dense adhesions (44.4%), obliterated anatomy of the Callot’s triangle (12.5%). **Conclusion:** The overall conversion rate in our series is 3.4%. The conversion risk for laparoscopic cholecystectomy increases greatly in the elderly, males and when inflammation, adhesions, thick walled gall bladder, obscure anatomy is present.

---

**PP-102**

**Primary endometriosis of the sigmoid colon: A rare presentation as acute colonic perforation and obstruction**

_Shahid Roomi, Sangram Patil, Fazain Jarral, Muhammad Hanif Shiwani_

Barnsley Hospital NHS Foundation, Barnsley, United Kingdom

**Background:** Endometriosis of the sigmoid colon involving presenting with bowel perforation and colonic obstruction is rare in menopausal women. We present a rare case of a 62-year lady presenting to emergency department with acute abdomen and sepsis. **Material and Methods:** A retrospective case study with review of current literature using patient notes, radiology findings and histological results. **Result:** A 62-year-old female presented with a two day history of severe abdominal pain, vomiting and loose, black stools. Past medical history was systemic hypertension,
PP-103
Taking Nice Guidelines Further: Straight – To – Test for Dysphagia
Gloria S Z Tun, Niniv Rezwan, Elmuhaydy Said, Shahid Roomi, Suhail Anwar, Muhammad Shiwani
Barnsley Hospital NHS Foundation Trust, Barnsley, United Kingdom

Background: The Straight To Test (STT) as two week wait (2WW) referral pathway was started in Barnsley Hospital, NHS Foundation Trust using the guideline of Government of England to reform cancer services in the country. It offers a “one stop assessment” as all patients has “on table” consultation and examination before the procedure with additional investigations arranged if needed. Material and Methods: Retrospective analysis of all STT upper gastrointestinal endoscopies performed from November 2014-October 2015. Patients were identified through an electronic data base “Endosoft”. Primary end-point was total diagnostic yield with secondary end-point of the clinical outcome. Result: A total of 1192 patients were referred as 2WW. 398 (33 %) of these were referred as STT, of which, 385 proceeded to have upper GI endoscopy. Ratio of male and female were equal. Mean age of males and females was 63 years (range 26–95 in males and 25–95 in females). Oesophageal cancer was detected in 6 % (18 males, 5 females) which include adenocarcinoma (70%), Squamous cell carcinoma (17%), Carcinoma in situ (9%), and metastatic lung cancer (4%). Other conditions were gastritis/duodenitis (26%), Oesophagitis/oesophageal ulcer (24%), Hiatus Hernia (20%), Oesophageal stricture/Schatkski ring (3%), peptic ulcer disease (2%), others (6%) and incomplete/non-diagnostic (1%). 19% were normal. Multiple diagnoses co-existed in patients. Conclusion: The STT pathway in our institution helps in maintaining overall prescribed target time for patients with oesophago-gastric cancer. There is a good diagnostic yield as oesophageal cancer was detected in 6%, expediting their final management plan.

PP-104
Compliance with guidelines for the investigation and management of biliary colic: a quality improvement project in a district general hospital
Sabrina H. Rossi, Caroline Phillips, Dermot O’riordan, Nicholas Ward
West Suffolk Hospital, Bury St Edmunds, United Kingdom

Background: Patients with biliary colic have a 50% risk per annum of further episode of pain and 1–2% risk of development of serious complications. We aim to assess compliance with guidelines for the investigation and management of biliary colic in a district general hospital. Material and Methods: Data was collected on 35 consecutive patients with biliary colic. Individuals with acute cholecystitis (clinical or ultrasound evidence) were excluded from the analysis. Antibiotics should be prescribed only if sepsis criteria are fulfilled. All patients should receive advice regarding a low fat diet. Laparoscopic cholecystectomy should be offered unless contraindicated. The Royal College of Pathologists recommend a minimum retesting interval of 36-72 hours for LFTs. Result: Mean age was 54 years (22-90) and mean length of stay 3 days (1-5). 100% patients (35/35) had LFTs checked on admission; however 51% (18/35) patients did not adhere to the minimum retesting interval, with 14 patients having daily LFTs. 26% patients (9/35) received antibiotics inappropriately. 43% patients (15/35) did not receive advice regarding low fat diet. Laparoscopic cholecystectomy should be offered unless contraindicated. The Royal College of Pathologists recommend a minimum retesting interval of 36-72 hours for LFTs. Conclusion: Over half of patients are having unnecessary daily assessment of LFTs. A large proportion of patients are receiving inappropriate antibiotics and not receiving dietary advice. We instituted a comprehensive multidisciplinary education program and re-audit data to demonstrate improvement in the investigation and management of patients presenting with biliary colic.
PP-105
Marking clips for tumour-bed localization as a cause of chronic sinus formation and pain after breast conservation surgery for cancer: A case series of 4 patients
Sabrina H. Rossi, Charles M. Malata, Parto Forouhi
Cambridge Breast Unit, Addenbrooke’s Hospital, Cambridge, United Kingdom; Department of Plastic and Reconstructive Surgery, Addenbrooke’s Hospital, Cambridge, United Kingdom

Background: The Association of Breast Surgeons recommends the intra-operative placement of six paired surgical vessel ligation clips to allow accurate tumour bed localization during breast conserving surgery (BCS) to facilitate delivery of adjuvant radiotherapy. Titanium clips are considered inert and easy to use. Little has been published regarding wound complications secondary to foreign-body reaction to titanium clips used for this purpose.

Material and Methods: Case presentation: We describe a series of four patients who developed delayed chronic wound complications following BCS, including non-healing ulcers, sinus formation and chronic pain. Result: Case Presentation: In all cases, clinical examination and radiographic imaging suggested subcutaneous migration of clips. All four patients were treated by excision of the surgical clips and affected tissue, and excellent cosmetic results were achieved. Pathology assessment of the excised tissue demonstrated a giant cell foreign-body reaction accompanying the marking clips. Conclusion: We describe a case series of four patients and delineate valuable learning points. Material and Methods: A 76-year-old woman presented with a 2-week history of a non-reducible painless femoral mass. Outpatient ultrasound demonstrated a 36 x 20mm smooth walled, multiloculated, partially cystic lesion anterior to the right inguinal ligament in keeping with an incarcerated femoral hernia. Urgent operative management was scheduled. Result: Intra-operatively the appendix was found to be incarcerated within the sac of the femoral hernia, and appendectomy was performed. Histopathology demonstrated no evidence of inflammation within the appendix, however an incidental appendiceal diverticulum was identified. Conclusion: It is widely recognised that a De Garengeot’s hernia may present with concomitant appendicitis, secondary to raised intraluminal pressure within the incarcerated appendix. Appendiceal diverticulosis is also believed to develop in response to raised pressure within the appendix, and may therefore develop secondary to incarceration within a De Garengeot’s hernia. However, to our knowledge, only one such case has been described in the literature. De Garengeot’s hernia is a rare entity, which poses significant diagnostic challenges. A high index of clinical suspicion is necessary as these hernias are at particularly high risk of perforation, and therefore prompt surgical management is paramount.

PP-107
An unusual occurrence of adult sigmoid intussusception due to extraluminal cause: A Case Report and literature review
Nehemiah Samuel, Antonia Durham-Hall, Roderic Hutchinson
Doncaster Royal Infirmary, Doncaster, United Kingdom

Background: We report on an unusual presentation of large bowel obstruction due to sigmoid intussusception secondary to adjacent adnexa and a literature review of such occurrences. Material and Methods: A 77-year-old lady presented acutely with a 6-week history of LIF pain, constipation and overflow diarrhoea. Preliminary investigations including CT-scan of abdomen-pelvis demonstrated a strictured sigmoid colon likely representative of an obstructive tumour, deemed unsuitable for colonic-stenting. A laparotomy was performed to find a large sigmoid mass adherent to the adjacent pelvic wall and adnexal structures. The entire large bowel proximal to the stricture was significantly distended with impending perforation. A total colectomy and end-ileostomy was undertaken. Histopathologic assessment surprisingly revealed sigmoid intussusception without an obvious cause other than the left ovary & fallopian tube firmly adherent to the intussuscptum sigmoid segment which may have been an extraluminal cause for this occurrence. An English literature search was carried out on MEDLINE/PubMed using MeSH terms Adult Intussusception/etiology; Large-Bowel Intussusception; Sigmoid neoplasms/diagnosis/complications. Result: Intussusceptions account for only 5% of mechanical bowel obstruction in adults. Of diverticulum within a De Garengeot’s hernia, and delineate

PP-106
Type 4 appendiceal diverticulum within a De Garengeot’s hernia: when rare meets rarer
Sabrina H. Rossi, Eamon Coveney
Department of General Surgery, West Suffolk Hospital, Bury St Edmunds, United Kingdom

Background: De Garengeot’s hernia is defined as an incarcerated femoral hernia containing the vermiform appendix. We describe the case of a patient with a type 4 appendiceal diverticulum within a De Garengeot’s hernia, and delineate valuable learning points. Material and Methods: A 76-year-old woman presented with a 2-week history of a non-reducible painless femoral mass. Outpatient ultrasound demonstrated a 36 x 20mm smooth walled, multiloculated, partially cystic lesion anterior to the right inguinal ligament in keeping with an incarcerated femoral hernia. Urgent operative management was scheduled. Result: Intra-operatively the appendix was found to be incarcerated within the sac of the femoral hernia, and appendectomy was performed. Histopathology demonstrated no evidence of inflammation within the appendix, however an incidental appendiceal diverticulum was identified. Conclusion: It is widely recognised that a De Garengeot’s hernia may present with concomitant appendicitis, secondary to raised intraluminal pressure within the incarcerated appendix. Appendiceal diverticulosis is also believed to develop in response to raised pressure within the appendix, and may therefore develop secondary to incarceration within a De Garengeot’s hernia. However, to our knowledge, only one such case has been described in the literature. De Garengeot’s hernia is a rare entity, which poses significant diagnostic challenges. A high index of clinical suspicion is necessary as these hernias are at particularly high risk of perforation, and therefore prompt surgical management is paramount.
these colo-colonic intussusception is rare (1%) and those reported in literature are predominantly due to malignant bowel lesion as the identified cause. For this reason, reports recommend non-reduction of the intussusception (when recognised pre-op) and resection en-block. None of the reports described an extra-colonic cause for intussusception. Conclusion: The above patient received treatment as for obstructive sigmoid cancer. A pre-operative diagnosis of intussusception would have also warranted the same treatment because of the high incidence of primary bowel cancer found in colonic intussusception.

PP-108
Transsthoracic robotic excision of esophageal leiomyoma
Kuthan Kavakli, Ersin Sapmaz, Sedat Gürkok, Alper Gözubuyuk
Department of Thoracic Surgery, Gulhane Military Medical Academy, Ankara, Turkey

Background: Today, submucosal tunneling endoscopic resection gaining popularity in the removal of esophageal leiomyoma. However, most researchers recommended a maximum resectable lesion size of 4 cm. In this video, we aimed to present a transsthoracic robotic excision of 6 cm diameter esophageal leiomyoma. Material and Methods: Our robotic surgery video archive was searched to identify critical steps and technical details of each technique. A final illustration enhanced video to serve for visual analysis was created. Result: A 48-year-old male admitted with the complaint of dysphagia. Thorax CT revealed a 6 cm diameter lesion located in the carinal level of the esophagus. The endoscopic findings confirmed leiomyoma with no mucosal invasion and obstructing 75% of the esophageal lumen. Submucosal tunneling endoscopic resection is not suitable for this giant leiomyoma and the patient underwent transsthoracic robotic excision. The excision was completed without any complication. His postoperative course was uneventful and he was discharged on 3th postoperative day. The esophageal peristaltizm was normal on barium swallow graphy in second postoperative month. Conclusion: We believe that robotic approach is feasible, safe and it is superior with its technical aspects when compared with other minimally invasive techniques in the surgical removal of thoracic esophageal leiomyoma.

PP-109
Left ventricular dysfunction and pure mitral stenosis surgery
Aniss Seghrouchni a, Mahdi Ait Houssa b, Younes Moutakiallah d, Abdessamad Abdou d, Mehdi Boums d, Fouad Nya d, Noureddine Atmani a, Shham Belhouize a, Hatim Ghadbane a, Mohammed Drissi a, Fouad Amal Wahid a, Youssef ElBekkali a, Roland Demaria b, Abdelatif Boulaya a

a Cardiovascular surgery department, university military hospital Mohammed V, Rabat, Morocco; b Thoracic and Cardio vascular surgery department, Montpellier, France

Background: The systolic dysfunction of the left ventricle (LV) in case of mitral stenosis (RM) is rare and its aetiology is unknown. The objective of this study is to investigate the incidence and possible recovery of LV function after correction of mitral stenosis. Material and Methods: This is a retrospective study from January 1994 to December 2012. Thirty patients (17 women, mean age = 43.9 ± 9.7) operated for pure RM with LV dysfunction defined for an ejection fraction (EF) LV ≤ 45%. The most common aetiology was rheumatic disease. Dyspnea stage III-IV NYHA was present in 80%. Twenty tree patients were in permanent atrial fibrillation arrhythmia. Result: One patient was operated urgently. The average duration of extracorporeal circulation (ECC) was 82.2 ± 33.7 min. The mean duration of aortic clamping (AC) = 54.2 ± 25.7 min. Median assisted ventilation was 9 h [6-18]. The mean LV EF increased from 39.8 ± 4.5% to 52.8 ± 8.6% (p = 0.017). Sixteen patients had mitral valve replacement (MVR), 10 had a MVR + tricuspid plasty (PT) and 4 patients underwent open heart mitral commissurotomy. The mortality rate was 13.3%. The main causes of death were low cardiac output. Conclusion: Despite a high mortality, mitral stenosis surgery allows in most cases a recovery of the left ventricular function.

PP-110
A Diverticulitis of Appendix Vermiformis: A distinct case from Acute Appendicitis
Rahman Senocak, Sahin Kaymak, Umit Alakus
Gulhane Military Medical Academy, Ankara, Turkey

Background: Appendiceal diverticulitis is considered a relatively rare disease. Although right lower quadrant pain is the main clinical symptom of both acute appendicitis and appendiceal diverticulitis, appendiceal diverticulitis has been commonly dismissed as a variant of acute appendicitis. Acute appendiceal diverticulitis is reported as a rare cause of appendicitis with a frequency of 0.004% to 2.1% [1]. It can be easily overlooked by surgeons and pathologists, with most of them are diagnosed after surgery. Clin-
ical features of AD are similar to conventional acute appendicitis. We report a case of acute appendiceal diverticulitis postoperatively diagnosed. **Material and Methods:** A 30-year-old female with a presumptive diagnosis of acute appendicitis from history and physical examination was admitted to our hospital. Abdominal ultrasound sonography demonstrated an enlarged, non-compressible swollen appendix with a cross section diameter of 10 mm, and unidentified the distal part of the appendix. The surrounding was heterogeneous and wall thickening of appendix was more prominent. **Result:** The resected appendix was 5.5 cm long and 1.5 cm in diameter with fibrin covered distally. Microscopic study revealed a perforation of a pseudodiverticulum distally associated with serositis findings characterizing as acute supplicative inflammation. She had an uneventful recovery and was discharged two days after surgery. **Conclusion:** Diverticular disease of the appendix is a rare disease; male sex and adult age are risk factors. Clinicians and radiologists are still widely unaware of its clinical features. Patients with older age and longer duration of symptoms suspected of appendicitis should be given more attention and suspicion for AD.

---

**PP-111**

**Intestinal Ischemia in a Young Male Associated with Acute Marijuana and Spice use**

Şahin Kaymak, Rahman Şenocak, Oğuz Hançerlioğulları, Mehmet Fatih Can, Zafer Kılbaş

Gulhane Military Medical Academy, Ankara, Turkey

**Background:** Intestinal ischemia is encountered more commonly in elderly patients but can also be seen in younger patients. The causes can be divided into occlusive and non-occlusive entities. Although the complications of drug abuse occur much in cardiovascular or respiratory systems than gastrointestinal, whole gastrointestinal tract can be affected with the use of foreign substance such as cocaine, marijuana and spice. **Material and Methods:** A 30-year-old man presented to the ED with acute onset of severe crampy abdominal pain. He reported to have undergone laparoscopic anterior resection with the diagnosis of sigmoid colon cancer. He reported to frequently use illicit addictive drugs such as cocaine, marijuana and spice. Suddenly he experienced severe abdominal pain. Abdominal examination demonstrated diffuse tenderness without guarding. Abdominal CT scanning demonstrated dilated small bowels with 35 mm in diameter floating in widespread free abdominal fluid and suspicious filling defect in superior mesenteric vein. **Result:** In the operation, nonviable small bowel segments were resected and an end-to-end anastomosis was performed. Microscopic examination of resected bowel pathologically showed acute arterial gangrene with thrombotic occlusion of the intestinal vessels. He was discharged postoperatively on 7 days without complications. **Conclusion:** Although it is hard to show a direct potential relationship between illicit use of drug and bowel ischaemia, generally patients were relatively young, with no previous history of arteriosclerosis. Physicians examining patients presenting with abdominal pain to emergency department should be alert for the potential gastrointestinal complications of drug abusers and consider bowel ischemia whenever a drug abuser presents with abdominal pain.

---

**PP-112**

**Report of a Rare Case: Clear Cell Carcinoma Metastasis on an Incision Scar**

Şahin Kaymak, Aytekin Unlü, Rahman Şenocak, Emin Lapsekili, Hüseyin Sinan, Bülent Kurt, Mustafa Tahir Özer, Nazif Zeybek, Orhan Kozak

Gülhane Military Medical Academy, Ankara, Turkey

**Background:** Clear cell ovarian carcinomas (CCOC) constitute less than 5% of all cancers of the ovary. Their prognosis is poor and most frequently seen in fifth and seventh decades of life. **Material and Methods:** Fifty-seven years old female presented with a painless suprapubic mass on the previous incision scar. History revealed an undetailed gynecologic surgery in a private medical center. Physical examination revealed a phannen stiel incision scar, a firm, 6x6x5 cm suprapubic mass with roundedges was palpated. The mass was fixed to surrounding tissues. **Result:** Blood chemistry tests were normal. CT scan of the abdomen showed the soft mass was lobulated, heterogeneous and compressing urinary bladder. The CT report also stressed the possibility of a desmoid tumor for the differential diagnosis. The patient was taken to the operating room and en-bloc resection of the mass was performed. During the operation, the mass was densely fixed to the surrounding structures. The patient was discharged on the 5th day of hospital stay. Pathological examination of the tumor was reported as malignant epithelial tumor, metastasis of clear cell carcinoma. The patient was consulted with the Medical Oncology Department and chemotherapy treatment was planned. **Conclusion:** CCOC metastasis on the abdomen wall is a rare diagnosis. Patients that present with a soft tissue mass and with a history of previous gynecologic surgery, a through history taking and reports of previous surgical interventions are required. Any firm, suspicious mass on the abdomen wall should be a candidate for R0 resection.
**PP-113**
The role of the ultrasonography of abdomen performed by a general surgeon on diagnosis of acute appendicitis

Huseyin Tas a, Şahin Kaymak b, Emin Lapsekili b, Rahman Senocak b, Ramazan Yıldız b

a Izmir Military Hospital, Izmir, Turkey; b Gulhane Military Medical Academy, Ankara, Turkey

**Background:** We aimed to determine the benefits which ultrasonography of the abdomen performed by a general surgeon gives to himself to diagnose acute appendicitis in this study. **Material and Methods:** This study includes 215 patients followed by preliminary diagnosis of acute appendicitis within 3 different periods during 12 months, and was performed in two different first intervention center where referral of patients to another emergency center is not possible due to geographical reasons. Data of the patients were evaluated retrospectively and patients were divided into three groups. **Result:** Of patients, 200 male and 15 were female, and mean age was 23. A total of 66 patients from all groups underwent appendectomy. When the groups were compared for in terms of compliance with acute appendicitis according to the results of pathology in patients who underwent appendectomy, there was not statistically significant difference among groups (p = 0.362). When the groups were compared for in terms of truly determining non-acute appendicitis and avoiding negative laparotomy (appendectomy), there was statistically significant difference among groups (p = 0.002). Conclusion: In General Surgery Residency Training Core Curriculum published in 2006 by The Turkish Surgical Competence Steering Committee, within the framework of implementation and interpretation of the Ultrasonography on the diagnosis of acute abdomen, inclusion of ultrasound training into general surgery residency training will increase success of specialists working in the periphery hospitals on diagnosis and treatment, and also decrease their legal responsibility as they come up against.

**PP-114**
What is the best surgical option for managing prosthetic aortic valve endocarditis with root abscesses?

Callum Shields a, b, Leeron Marshall a, b, Thomas Theologou a, Carlos Nistal a, Debbie Harrington b, Manoj Kuduvalli b, Aung Oo b, Mark Field b

a University of Liverpool, Liverpool, United Kingdom; b Liverpool Heart and Chest Hospital, Liverpool, United Kingdom

**Background:** Infection of a prosthetic aortic valve with associated abscess cavity portends a poor outcome. There is little evidence describing the best surgical approaches to this scenario and even less data on outcomes. **Material and Methods:** We present two cases of prosthetic aortic valve endocarditis with root abscess demonstrating scenarios of patch root repair with AVR versus primary root replacement. **Result:** Case 1: A 52-year-old lady underwent isolated AVR in 2014 and presented 12 months later with prosthetic valve endocarditis (mycobacterium) and root abscess. Intra-operatively it was noted that there was a well-defined cavitation around the annulus between the left coronary and right coronary ostia. After debridement and washout the cavity was covered with a large patch of pericardium. An AVR was implanted placing sutures through the patch. The patient was discharged home. Case 2: A 48-year-old gentleman underwent isolated AVR successfully in 2015, 3 months following discharge he presented with signs and symptoms of PVE. He was taken to theatre where it was noted extensive annular destruction typical of Staphylococcus Aureus. He underwent a redo root replacement with Cabrol grafts. Apart from requiring a permanent pacemaker, he was discharged home. **Conclusion:** Patch repair of the root with AVR or a root replacement as described above is a difficult multifactorial decision. A criticism of the patch and AVR operation may be that by adopting a conservative approach one is simply delaying the natural history. An advantage however may be a lower operative risk while maintaining a further redo option for root replacement.

**PP-115**
Correlation between cardiopulmonary function and sarcopenia in patients undergoing living donor live

Hisaya Shirai, Toshimi Kaido, Yuhei Hamaguchi, Atsushi Kobayashi, Shinya Okumura, Shintaro Yagi, Etsuro Hatano, Hideaki Oogai, Shinji Uemoto

Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

**Background:** Sarcopenia is predictive of mortality in digestive surgery. However, the impact of preoperative cardiopulmonary function on sarcopenia remains unclear. **Material and Methods:** We investigated 231 patients who underwent living donor liver transplantation between January 2008 and April 2015. Using preoperative CT imaging, the quantity and quality of skeletal muscle were evaluated by psoas muscle mass index (PMI) and intramuscular adipose tissue content (IMAC), respectively. The hand grip strength was also measured since 2013. We assessed the following: 1) The correlation between the cardiopulmonary function and sarcopenic factors (IMAC, PMI, and hand grip strength). 2) Sarcopenic factors in patients classified according to pulmonary function. **Result:** 1) Ejection fraction (EF) was not significantly correlated with any sarcopenic factors. In males, preoperative VC and FEV1.0 were significantly correlated with IMAC (P=0.024, P=0.013), PMI (P<0.001, P<0.001) and grip strength (P=0.006, P=0.033). In females, preoperative VC and FEV1.0 were significantly correlated with IMAC (P=0.002, P=0.001) and grip strength (P=0.002, P=0.001). 2) In males, PMI was significantly lower in preoperative restrictive ventilatory impairment group
than normal group (P<0.001) and preoperative obstructive ventilatory impairment group (P=0.035). In females, there were no significant differences in sarcopenic factors among patients classified according to preoperative pulmonary function. 3) The overall survival rate was lower in patients with preoperative pulmonary dysfunction in both males (P=0.058) and females (P=0.008). **Conclusion:** Preoperative sarcopenia was closely related to pulmonary dysfunction. Perioperative pulmonary rehabilitation would improve overall survival in patients with sarcopenia.

**PP-116**
**Duodenal biopsies for the diagnosis of coeliac disease – are we adhering to current guidance?**

Nilofer Husnno, Wafaa Ahmed, Muhammad Hanif Shiwani

Barnsley District General Hospital, Barnsley, United Kingdom

**Background:** According to the British Society of Gastroenterology (BSG) guidelines on the diagnosis and management of adult coeliac disease (CD), if CD is suspected, at least 4 duodenal biopsy specimens should be taken at endoscopy. Previous studies have shown this to be associated with a higher diagnostic rate of CD compared to when fewer specimens are obtained. We aimed to assess compliance to guidelines within our trust and ascertain the influence of the number of biopsy specimens on our diagnostic rate of CD.

**Material and Methods:** We retrospectively collected data for a 10-month period on all duodenal biopsies performed, to include: indication for biopsy, number of specimens taken, histology and serology status. We defined a diagnosis of CD as ‘Marsh grade III’, or ‘Marsh grade I/II plus positive serology’. We used the chi-squared test for statistical analyses.

**Result:** 924 patients were included in our study (mean age 59.2 years). The most common indication for biopsy was anaemia (n=469), followed by suspected CD (n=120). Other indications included diarrhoea, dyspepsia, weight loss, reflux, all of which are recognised as features that should trigger duodenal biopsies for CD investigation as per guidelines. Only 24% of patients (n=219) had ≥4 biopsy specimens taken. The diagnostic rate for CD increased to 0.078% when ≥4 specimens were obtained compared to 0.018% with ≤4 specimens (P<0.0001). **Conclusion:** In our cohort, the detection rate of CD increased by 4 times when ≥4 duodenal specimens were obtained. Incorrect or missed diagnoses can lead to unnecessary investigations and inappropriate treatment. Improved adherence to guidelines is required.

**PP-117**
**Effectiveness of abdominal-wall injections in children suffering from anterior cutaneous nerve entrapment syndrome (ACNES)**

Murid Siawash, Rudi Roumen, Marc Scheltinga

Maxima Medical Center, Veldhoven, the Netherlands

**Background:** Anterior cutaneous nerve entrapment syndrome (ACNES) is increasingly recognized as a cause of chronic abdominal pain in children. The diagnosis is suspected on the combination of a characteristic physical examination and a normal workup including blood and urine analysis and imaging. The initial treatment strategy includes local nerve blocks. Success rates of this approach are unknown in pediatric populations. The objective of the present study is to report on the effectiveness of subfascial abdominal wall injection(s) in childhood ACNES.

**Material and Methods:** This observational study included children with ACNES receiving abdominal wall injection(s) between 2008 and 2014 at a single center. Main outcome was the long term success rate of injection therapy. Secondary outcome was identification of factors possibly predicting success.

**Result:** A total of 114 children were diagnosed with ACNES during the 7-year observation period and 108 fulfilled study criteria. Median age was 15 years (range 8-17) and 76% were females. Just a single abdominal wall injection using lidocaine offered prolonged pain relief in 15 children. Administration of 1-3 additional injections combined with 1ml of 40mg methylprednisolone resulted in long-term pain relief in another 24 children. An overall 36% injection success rate was calculated. Age ≤12 years was associated with success (p=0.02). In contrast, gender, pain localisation, intensity or delay in diagnosis did not affect treatment outcome. All children not responding to injections (64%, n=69) chose to undergo surgery.

**Conclusion:** One of three children with chronic abdominal pain due to ACNES experienced long-term pain relief following abdominal wall infiltrations.

**PP-118**
**A Case of Sacral Myxopapillary Ependymoma, Which Was Initially Diagnosed as a Chordoma**

Hakan Simsek, Md, Assistant Prof, Emre Zorlu, Md, Bulent Duz, Md Associate Prof

Gülhane Military Medical Academy, Haydarpasa Teaching Hospital, Department of Neurosurgery, Istanbul, Turkey

**Background:** Primary malignant sacral tumors such as chordomas, sarcomas, and lymphomas are rare. The presented case emphasizes that histopathological diagnosis of the tumor might lead to a more conservative resection of the tumor.

**Material and Methods:** Myxopapillary ependymoma is usually located in the caudal end of the spinal cord at the terminal filum and cauda equina. But it may rarely emerge
as the primary sacral tumor outside the thecal sac among other primary malignant tumors of the sacral region (1-5). Here we present a case of a 32-year-old woman who had sacral myxopapillary ependymoma that was pre-diagnosed as sacral chordoma. Therefore, extent of surgical resection was established on an invasive malign primary tumor of the spinal column. She presented with intractable pain in her groins. She underwent en bloc resection to provide better survival to the patient by totally resecting the chordoma(4).

**Result:** Thecal sac was traversed below the S2 root section. Thus she became clean intermittent catheterization (CIC) dependent. Histopathology revealed myxopapillary ependymoma as the final diagnosis of the patient. However, resection involved total sacrectomy and scarification of the thecal sac below S2 roots. **Conclusion:** A preoperative diagnosis of ependymoma with a needle biopsy could probably save the bladder functions of the young patient. Nevertheless, intraoperative frozen-section histological assessment should be performed to guide the extent of surgical resection.

---

**PP-119**

**Impact of Coinciding Cervical Neurodegenerative Disease on Decision Making About a Patient with Parkinson’s Disease Prepared for DBS Surgery**

Hakan Simsek, Md, Assistant Prof a, Emre Zorlu a, Mehmet Güney Şenol, Md, Associate Prof b, Gökhan Inangil, Md, Assistant Prof c, Bulent Duz, Md, Associate Prof a

a Gülhane Military Medical Academy, Haydarpaşa Teaching Hospital, Department of Neurosurgery, Istanbul, Turkey; b Gülhane Military Medical Academy, Haydarpaşa Teaching Hospital, Department of Neurology, Istanbul, Turkey; c Gülhane Military Medical Academy, Haydarpaşa Teaching Hospital, Department of Anaesthesiology, Istanbul, Turkey

**Background:** Parkinson’s disease (PD) is a progressive neurological disease that exhibits a gamut of motor and nonmotor findings, which have serious impacts on functionality and quality of life. These clinical features sometimes are very similar to that of other neurological entities, and differential diagnosis is required. Authors present a case of cervical spondylotic myelomalacia that had similar motor features of the PD. **Material and Methods:** A 76-year-old patient with PD for twenty years was considered for deep brain stimulation surgery. He had bradykinesia, rest tremor, and rigidity. We found out stiff and inflexible legs. He had clonus in the Achilles and quadriceps muscles. Deep tendon reflexes were exaggerated and had the positive Hoffmann’s sign in the upper extremities, predominantly in the left side. His anamnesis revealed cervical trauma 38 years ago. Magnetic resonance (MR) imaging study and cervical CT scans revealed spondylosis and canal narrowing because of ossified posterior longitudinal ligament. Sagittal T2 weighted MR scans discerned myelomalacia. So we decided first to operate him for the cervical pathology. **Result:** He underwent cervical corpectomy and two level disectomy via anterior approach. He continued his medication for PD but his rigidity improved. His modified ‘Japanese Orthopedic Association Scale’ score improved from 11 to 14. He is planning to have the DBS surgery in the end of sixth month postoperatively. **Conclusion:** Degenerative neurological disorders such as PD can exhibit various clinical features and should be rigorously questioned in order to not to miss any coinciding disorder that otherwise could mislead the functional neurosurgery team to a disappointing course.

---

**PP-120**

**Upper Gastrointestinal Haemorrhage Secondary to Haemosuccus Pancreaticus**

Prateush Singh, Asim Khan, Georgia Scott, Manuel Jasper, Javaid Subhani

Basildon University Hospital, Basildon, United Kingdom

**Background:** Haemosuccus pancreaticus is upper gastrointestinal haemorrhage from the ampulla of Vater via the pancreatic duct. It is usually due to a splenic artery aneurysm or pseudoaneurysm opening into the pancreatic duct. It is a diagnostic challenge as conventional investigations such as endoscopy are often not diagnostic due to the sporadic episodes of bleeding. **Material and Methods:** A 28-year-old Caucasian male with a history of pancreatitis presented with fatigue, intermittent melena, and anaemia (haemoglobin 28mmol/l). Symptomatic treatment was coupled with thorough investigation to localise the source of gastrointestinal haemorrhage in accordance with the SIGN (Scottish Intercollegiate Guidelines Network) and ACG (American College of Gastroenterology) guidelines. **Result:** Two oesophago-gastro-duodenoscopies and colonoscopies failed to identify a cause. A CT-abdomen revealed splenomegaly secondary to splenic vein thrombosis with evidence of portal hypertension and small collateral vasculature. A CT-encephrography and subsequent capsule endoscopy did not reveal small bowel pathology. A technetium scan excluded a potential Meckel’s diverticulum. A CT-mesenteric angiogram then revealed a splenic artery pseudoaneurysm. This was embolised via intervention radiology and the patient’s haemoglobin levels stabilised, indicating that the pseudoaneurysm had been haemorrhaging in to the duodenum via the Ampulla of Vater. During admission, the patient developed severe epigastric pain and MRCP revealed acute-on-chronic pancreatitis. The pain remained difficult to control, responding eventually to splenic nerve radiofrequency ablation. **Conclusion:** Investigation for gastrointestinal haemorrhage of unknown source must be systematic and involves multidisciplinary input from physicians and surgeons. It is important to consider rare diagnoses such as Haemosuccus pancreaticus in clinically similar patients.
PP-121
Incidence and Management of urological complications after total pelvic exenteration performed for advanced tumors of the small pelvis

Jaroslav Jarabak a, Roman Zachoval a, Jiri Stejskal c, Jaromir Simsa d, Vladimir Visokai d, Ludmila Lipska d, Miroslav Leveuy d

a Department of Urology, Thomayer Hospital, Prague, Czech Republic; b Department of Urology, 1st and 3rd Faculty of Medicine, Charles University, Prague, Czech Republic; c Department of Urology, Prague, Czech Republic; d Surgical Clinic, 1st Faculty of Medicine, Charles University and Thomayer Hospital, Prague, Czech Republic

Background: evaluate the incidence of urological complications in patients after total pelvic exenteration. Material and Methods: Retrospective evaluation of patients who underwent in the years 1999-2015 in our hospital a total pelvic exenteration. Were evaluated: oncologic characteristics of base tumor, foregone surgery, neoadjuvant therapy, previous urological disease and related surgery, length of surgery, blood loss, type and duration of urological complications and its solution. Result: The group of 54 patients, 38 men (70%) and 16 women (30%), average age 58 years (range 43-71). Urinary diversion was performed in 53 patients by ureteroileostomy, in one case by skin ureterostomy. Urological complications were detected in 12 patients (22,2%), in 4 early and late in 8 patients. Often complications featured in 3 patients urinary leakage from the ureteroileal anastomosis, in 1 patient sepsis on the basis of isolated urinary tract infection. Late complications were found, on average 24 months after surgery (range 4-60 months). In 7 patients had ureteral stricture in ureteroileal anastomosis. In one patient experienced stricture skin ureterostomy. The stage of cancer, previous surgeries, urology, surgery length and size of blood loss did not affect the incidence of complications. All patients with the occurrence of urological complications underwent neoadjuvant therapy. Conclusion: Urological complications after total pelvic exenteration occur in approximately one fifth of patients. Safe acute solution was to design a urinary diversion using a nephrostomy puncture. In patients with late complications at the 2. time replacement of nephrostomy for Transureteral stent. Patients in long-term remission of cancer then open to resection or drainage (PTGBA/D).
Material and Methods: To clarify the factors affecting margin positive resection, we investigated the patient who had residual tumor in microscopic findings even though they were thought to be performed margin free resection in macroscopic findings. This is a retrospective analysis of 190 patients (male: 138, female: 52, age: 67.8) with 264 tumors who underwent hepatic resection for HCC and had pathological findings of surgical margin in our hospital. Result: 25 tumors had positive margin (margin positive rate was 9.47%). Anatomical resection had 9 positive tumors (7.83%) and non-anatomical resection had 16 (10.47%), there were no significant difference (P=0.42). The location of margin positive tumors were S1.0/S (positive/negative), S2: 1/18, S3: 1/34, S4: 3/33, S5: 2/42, S6: 2/56, S7: 8/35, S8: 8/40. In S7 and S8, margin positive rate was significantly higher (P=0.01). Recurrent cases were 89 patients (intra hepatic: 71, extra hepatic: 37). Two of 71 cases had recurrence at positive surgical margin (2.8%). Relapse free survival rate between positive and negative margin had no significant difference in intrahepatic recurrence (P=0.67), and significant in extrahepatic recurrence (P=0.037). Conclusion: The tumor location had significant relation with margin positive rate. Pathological margin positive was not related with recurrence at liver surgical margin, but related with extrahepatic recurrence. The role of additional resection for the treatment of positive margin is still equivocal.

PP-124
Analysis of factors which affect postoperative complication after distal gastrectomy for patients with gastric cancer
Takano Y, Mitsumori N, Shida A, Iwasaki T, Nakada K, Yanaga K
Department of Surgery, Jikei University school of Medicine, Tokyo, Japan
Background: This study was performed retrospectively to identify risk factors associated with postoperative complications for patients with gastric cancer after distal gastrectomy (DG). Material and Methods: 580 consecutive radical gastrectomy was performed for patients with gastric cancer from year of 2006 to 2010 at Jikei University Hospital. Of the 580 operations, DG was performed in 298 patients (laparoscopic 138 vs. open 160). Postoperative complications were reviewed and their risk factors were retrospectively analyzed by database information. 22 (7.4%) patients suffered postoperative complications which satisfy Clavien-Dindo (CD) classification II and more. Anastomotic leakage in 6 patients, anastomotic stricture in 4 patients, hemorrhage from the anastomosis in 4 patients, delayed gastric emptying in 3 patients and not others were the other complications. Objective variables were postoperative complications which satisfy CD classification II and more. Explanation variables were as bellows, age, gender, operation method (laparoscopic vs. open), reconstruction (Roux-en Y vs. B-1), lymph node dissection (D2 vs D1+ or less), BMI, duration of operation, intraoperative blood loss, preoperative serum total protein, albumin, and pathological stage (stage I vs. II/III/IV). These factors were analyzed by logistic regression analysis. Result: Univariate analysis demonstrated that elderly patients (≥75 years old, P=0.0233) and Roux-en Y reconstruction (P=0.0449) were associated with postoperative complications. Multivariate analysis also revealed that elderly patients (P=0.0241, Odds ratio 2.5598) and Roux-en Y reconstruction (P=0.0458, Odds ratio 2.3914) were independent risk factors which affect postoperative complications. Conclusion: Elderly patients and Roux-en Y reconstruction are independent risk factors which affect postoperative complications for patients with gastric cancer after DG.

PP-125
Prognostic value of inflammation-based Glasgow Prognostic Score in patients with esophageal cancer after esophagectomy
Toshiaki Tanaka a, Satoru Matono a, Naoki Mori a, Haruhiro Hino a, Kazutaka Kadoya a, Ryosuke Nishida a, Yoshito Akagi a, Hiromasa Fujita b
a Kurume University, Kurume, Japan; b Fukuoaka Wajiro Hospital, Fukuoka, Japan
Background: Glasgow prognostic score (GPS), which is based on a combination of C-reactive protein (CRP) and albumin measurements, has a prognostic value for several types of cancer. However, the prognostic value of GPS for esophageal cancer remains unclear. Material and Methods: A total of 353 patients with esophageal cancer who underwent R0 esophagectomy between January 2000 and December 2014 were included in the study. The GPS was examined together with clinicopathologic factors in univariate and multivariate Cox regression analyses of overall survival (OS). The GPS was defined as follows; CRP ≥10 mg/L and albumin <35 g/L indicated GPS2, one of these abnormalities indicated GPS1, and normal CRP and albumin levels indicated GPS0. Result: The 5-year OS rate for the whole group was 60.2%; 74.4% for pT1, 63.2% for pT2, and 49.5% for pT3 (T1 vs T2, P = 0.1038; T2 vs T3, P = 0.0487). 257 patients (73%) had GPS0, 69 (19.6%) had GPS1, and 26 (7.4%) had GPS2. Prognostic factors were examined for T1-2 or T3 cancer separately. In patients with T1-2 cancer, age (≥65 vs <65) (HR: 2.356, 95%CI: 1.404-4.010, P=0.0012) and GPS (GPS1 vs GPS0) (HR: 2.455, 95%CI: 1.345-4.341, P=0.0041) were independent prognostic factors in multivariate analysis. For T3 cancer patients, stage grouping (ST3A vs ST3B) was the only independent factor detected in multivariate analysis (HR: 1.957, 95%CI: 1.175-3.455, P=0.0089). Conclusion: Prognostic factors are different between T1-2 cancer and T3 cancer. GPS has a prognostic value in patients with T1-2 esophageal cancer who underwent R0 esophagectomy, but not in T3 cancer patients.
Background: Myasthenia Gravis (MG) is an autoimmune disorder characterized with formation of antibodies against acetylcholine nicotinic postsynaptic receptors at the neuromuscular junction. These antibodies cause a reduction in the total receptor amount and decrease neuromuscular transmission. It is characterized with ophthalmoplegia, ptosis and muscle weakness manifested after repeated movements. Sugammadex is used to reverse the effect of nondepolarizing muscle relaxant in patients with myasthenia gravis. In this article, we aim to present our method of anaesthesia for a myasthenia gravis. Material and Methods: A 31-year-old female patient was diagnosed with myasthenia gravis 4 years ago due to complaints of weakness, drooping in the eyelid and double vision. Tymectomy operation was planned. After induction of anaesthesia the patient was intubated 120 seconds later using a 35 right double-lumen tube. Following the end of surgical operation, the patient started spontaneous ventilation on the 4th minute after the start of sugammadex with a dose of 4mg/kg and woken up without any problems. Result: In Myasthenia Gravis, the number of receptors are reduced due to autoimmune damage of acetylcholine nicotinic postsynaptic receptors at the postsynaptic membrane. Following the use of nondepolarizing muscle relaxants in patients to undergo general anaesthesia, neuromuscular block duration may be lengthened and there may be even a need for post-operative mechanical ventilation. Conclusion: Sugammadex is an agent that has selective steroid structure and that has the structure of cyclodextrin that binds nondepolarizing muscle relaxant agents. It binds the steroid structured muscle relaxants in circulation and in the nerve-muscle junction, creates a complex and cleared in the kidneys without being metabolised.

PP-127
The Effect of Ectopic Fat on Graft Function After Living Kidney Transplantation
Filip Thieme
Transplant Surgery Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Background: The mechanisms of reduced early renal graft function (ERGF) in obese kidney donors are still poorly understood. We compared ERGF in recipients with body mass index (BMI), perivascular fat and plasma inflammation markers of live kidney donors. Material and Methods: We included 58 living kidney transplantation pairs in the study. Donor and recipient demographic data, preoperative BMI, blood C-reactive protein (CRP) and adiponectin levels, perivascular adipose tissue (PAT) samples and recipient blood creatinine levels were analyzed. Result: We did not find any association between ERGF and the percentage of M1 macrophages in donor perirenal adipose tissue (p=0.83, r=0.03, n=58), adiponectin (p=0.65, r=0.06, n=58) or CRP (p=0.16, r=0.2, n=58) in plasma. ERGF, measured as an average increase of GFR in the first seven days after transplantation, did not correlate with the BMI of donors. The negative correlation between the BMI of recipients and an average increase of GFR in the first seven days after transplantation was significant (p<0.02, r=−0.325, N=58). Conclusion: The obesity level of donors, expressed as BMI, did not correlate with ERGF in the first seven days after transplantation. The associations between ERGF and plasma and perivascular fat inflammation markers were not significant. We confirmed a negative correlation between the BMI of recipients and an average increase of GFR in the first seven days after transplantation. We confirmed a negative correlation of adiponectin plasma concentration to the BMI of donors.

PP-128
Utility of diffusion-weighted MRI in early gallbladder cancer
Kazuya Uchikawa, Kentaroh Yamamoto, Mami Yamamoto, Hirotaka Taketomi, Fumio Yamamoto
Yamamoto memorial hospital, Imari, Japan

Background: The gallbladder cancer is known as one of the most aggressive malignant tumors with extremely poor prognosis. To screening the gallbladder, there are several radiological equipment such as ultrasonography (US), computed tomography (CT) with/without contrast agent, and magnetic resonance imaging (MRI) with/without contrast agent. Which radiological equipment is better is still controversial. We describe the feasibility of diffusion-weighted MRI (DWI). Material and Methods: In our hospital, before laparoscopic cholecystectomy, CT with contrast agent and MRI without contrast agent were taken simultaneously for gallstone disease and gallbladder polyp. We compared the utility of CT and MRI. Result: We found a case of early gallbladder cancer. He is a 72-year-old male. By the US and CT with contrast agent, he was diagnosed as adenomyomatosi. But by the MRI without contrast agent, he was diagnosed gallbladder cancer. The apparent diffusion coefficient (ADC) measured from high-b value diffusion-weighted imaging (DWI) of MRI of the gallbladder lesion was 1766 mm²/s. He underwent laparoscopic cholecystectomy, and the pathological finding revealed early gallbladder cancer (T1b). Conclusion: CT has higher spatial resolution than MRI, but the detectability is unsatisfactory. Even in early
Early-stage gallbladder cancer, MRI is preferable with the objective of detectability, X-ray exposure, and allergic reaction to the contrast agent.

**PP-129**

**A Rare Case of Metastasis to the Gallbladder**

Alba Vázquez Melero, Carmen González Serrano, María Inmaculada Concepción Cruz González, Sandra Ruiz Carballo, Jon Daniel Solano Iturri, Iker Bengoezeta Peña

Hospital de Basurto, Bilbao, Spain

**Background:** Clear renal cell carcinoma accounts for 1% of all cancers and approximately 90% of kidney tumors. One third of the patients will develop metastases. The most common sites of metastasis are the lung, soft tissues, bone and the liver. Gallbladder's clear cell carcinoma metastases are extremely rare. **Material and Methods:** CASE PRESENTATION We present the case of an 83-year-old woman with a history of clear renal cell carcinoma stage pT3aNxMx. In 2009 she underwent a right nephrectomy and partial hepatectomy. Six years later, she was hospitalized with abdominal pain in the right upper quadrant, weight loss, anorexia and anemia. She did not present abdominal tenderness, fever or jaundice. A CT was performed showing a lesion in the gallbladder wall suspected to be a metastasis. The patient underwent laparoscopic cholecystectomy. Anatomopathological examination resulted in renal cell carcinoma metastasis with tumor-free margins. No adjuvant treatment was needed. Four months after the surgery she shows no sign of recurrence. **Result:** DISCUSSION Identifying whether we face a primary gallbladder tumor or metastatic disease can be very difficult. Primary gallbladder cancer is rare, being melanoma, stomach, pancreas, ovary and biliary duct its most common source. No matter its origin, cholecystectomy is the best treatment. **Conclusion:** In patients with a history of renal cell carcinoma, gallbladder metastases have to be ruled out before diagnosing a benign gallbladder disease. Surgery should be performed as it increases patients' survival rate.

**PP-130**

**Kirschner wire breakage during removal requiring retrieval**

Kai Yuen Wong a, Rosalind Mole a, Patrick Gillespie b

a Salisbury NHS Foundation Trust, Salisbury, United Kingdom; b Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

**Background:** Kirschner wires (K-wires) are widely used for fixation of fractures and dislocations in the hand as they are readily available, reliable and cost-effective. Complication rates of up to 18% have been reported. However, K-wire breakage during removal is rare. We present one such case illustrating a simple technique for retrieval. **Material and Methods:** A 35-year-old male presented with a distal phalanx fracture of his right middle finger. This open fracture was treated with K-wire fixation. Four weeks postoperatively, he developed a pin site infection with associated finger swelling. The K-wire broke during removal with the proximal piece completely retained in his middle phalanx. To minimise risk of osteomyelitis, the K-wire was removed. To access the distal interphalangeal joint, the extensor tendon was divided on the ulnar side. An incision was made dorsally on the middle phalanx straight down to the K-wire allowing it to be pushed out distally. He had full return of hand function. **Conclusion:** K-wire fixation is common and its rigidity as effective if not better than other modalities. Intraoperative K-wire breakage has a reported rate of 0.1%. In our case, there was no obvious cause of breakage and the patient denied postoperative trauma. On the other hand, pin site infections are much more common with reported rates of up to 7% in the hand or wrist. **Conclusion:** K-wire fixation is a simple method for bony stabilisation but can be a demanding procedure with complications often overlooked. It is important to be aware of the potential sequelae.

**PP-131**

**Morphea of the breast masquerading as cellulitis**

Claire Sethu, Kai Yuen Wong, Diana Slade-Sharman

Salisbury NHS Foundation Trust, Salisbury, United Kingdom

**Background:** Morphea, or localised scleroderma, describes a spectrum of autoimmune diseases that primarily affect the skin. It is a rare condition and its presentation as erythematous lesions can be mistaken for a wide range of differential diagnoses. We present such a case following breast reconstruction and review the literature. **Material and Methods:** A 56-year-old female had a delayed right-sided latissimus dorsi flap breast reconstruction with silicone implant following mastectomy. She had a subsequent right-sided capsulectomy, implant exchange and left breast mastectomy. One month postoperatively she noted erythema over her left breast around the mastectomy incision. This was initially treated as cellulitis with antibiotics but there was no clinical improvement. On further examination, the erythema appeared plaque-like and extended laterally across her left breast. She had a similar area over her left clavicle and reported another area over her back previously. A clinical diagnosis of morphea was made after a dermatology review of the area and a full antibody screen revealed presence of antinuclear antibodies. The morphea was treated conservatively. **Conclusion:** Morphea is a spectrum of autoimmune diseases that primarily affect the skin. It is a rare condition and its presentation as erythematous lesions can be mistaken for a wide range of differential diagnoses. We present such a case following breast reconstruction and review the literature.
treatments have been proposed including topical therapy, phototherapy and systemic immunosuppression. **Conclusion:** Morphea is rare but can occur postoperatively and mimic infectious conditions.

**PP-132**
**Otoplasty technique: A review of 126 consecutive patients**
Kai Yuen Wong, Ashvina Segaran, Natasha Aikman, Toriq Ahmad
Cambridge University Hospitals NHS Foundation Trust, Cambridge, United Kingdom

**Background:** Over 200 techniques have been described for prominent ear correction. We describe our choice of procedure and evaluate the postoperative outcomes of otoplasties performed by the senior author over a 10-year period. **Material and Methods:** Retrospective study of all otoplasties performed by the senior author (2002-2012) at a single hospital. Preoperative assessment included severity grading of ear prominence and cartilage stiffness. All patients were sent questionnaires. **Result:** A total of 126 patients (237 otoplasties) with a mean age of 10 years (range 3-23) were evaluated. Only absorbable sutures were used. A posterior scoring technique was used in 191 otoplasties (80.5%). Scoring was not used for the remaining procedures and this has been since 2010. Complications occurred in 44 cases (18.6%) including asymmetry in 22 cases (9.3%) and recurrence in 13 cases (5.5%). Revisisional surgery was performed in 11 cases (4.6%). There were no haematomas. All patients were satisfied with the improvement in appearance. Using multivariate analysis with logistic regression, younger patients (p<0.05) and use of posterior scoring (p<0.05) were both found to independently significantly increase the postoperative rate of asymmetry and recurrence. **Conclusion:** Our evolved technique without the use of scoring is a safe procedure with a high satisfaction rate.

**PP-133**
**Is the intraoperative air leak test effective in the prevention of colorectal anastomotic leakage? A systematic review and meta-analysis**
Zhouqiao Wu a, Remondus C. J. Van De Haar b, Cloï L. Sparreboom b, Geesien S. A. Boersema b, Ziyu Li a, Jiafu Ji a, Hans Jeekel a, Johan Lange b

a Peking University Cancer Hospital and Institute, Beijing, China; b Erasmus University Medical Center, Rotterdam, the Netherlands

**Background:** The intra-operative air leak test (ALT) is a common intraoperative test used to identify mechanically insufficient anastomosis. This meta-analysis aims to determine whether ALT aids to the reduction of postoperative colorectal anastomotic leakage (CAL). **Material and Methods:** A literature search was performed to select studies in acknowledged databases. Full text articles targeting ALT during colorectal surgery were included. Quality assessment, risk of bias and the level-of-evidence of the inclusions were evaluated. ALT methodology, ALT(+) (i.e. leak observed during the test) rate, and postoperative CAL rate of the included studies were subsequently analyzed. **Result:** Twenty studies were included for analysis, in which we found substantial risks of bias. A lower CAL rate was observed in patients underwent ALT than those did not, however the difference was not significant (p=0.15). The intraoperative ALT(+) rate greatly varied among the included studies from 1·5% to 24·7%. ALT(+) patients possessed a significantly higher CAL rate than the ALT(-) patients (11·4% vs. 4·2%, p<0.001). **Conclusion:** Based on the available evidence, performing an ALT with the reported methodology has not significantly reduced the clinical CAL rate, but remains necessary due to a higher risk of CAL in ALT(+) cases. Unfortunately additional repairs under current methods may not effectively decrease this risk. Results of this review urge a standardization of ALT methodology and effective methods to repair ALT(+) anastomoses.

**PP-134**
**Are there any differences between early excision-grafting and late excision-grafting in full thickness burn?**
Ahmet Deniz Uçar, Erkan Oymaci, Atakan Sağlı, Serdar Aydogan, Mehmet Yildirim, Nazif Erkan
Bozyaka Education and Research Hospital, Izmir, Turkey

**Background:** Recent literature suggests early excision and grafting promises better results in full thickness burn but some studies revealed opposite findings especially in elderly. We tried to figure out the results of early excision and grafting vs. late excision and grafting in our full thickness burned patients. **Material and Methods:** We recruited 872 full thickness burn (FTB) patients operated in Burn Treatment Center between 2011 and 2015. There were 318 early excision and grafting (EEG) and 270 late excision and grafting (LEG) patients. We examined burn site infection, graft loss percentage, length of hospital stay (LOS) and survival. Student t Test and chi-square tests were used where suitable. p<0.05 were accepted to be statistically significant. **Result:** FTB patient number was 588. When we compare EEG/LEG for mean age (34/38), gender (male:female 208:110 for EEG and 198:172 for LEG), total burned surface area (TBSA) (31%/37%), there were no differences between the groups. The calculated burned places infection numbers (BPIN) were 164/224 (p=0.03); graft loss percentage (GLP) were 32/18 (p=0.01); the mean LOS were 17/32 (p=0.01) and lethal dose-50 (LD50) in probit analysis were 86/72 (p=0.07) for EEG/LEG groups respectively. We figured out that better BPIN and LOS can be achieved with EEG whereas GLP was
PP-135
Which way should be chosen as a central venous line in a burn treatment center intensive care unit?
Ahmet Deniz Uçar, Burak Dede, Hilmi Yazıcı, Orkun Subasi, Atakan Saclı, Serdar Aydogan, Nazif Erkan, Mehmet Yıldırım
Bozyaka Education and Research Hospital, Izmir, Turkey

Background: Central venous lines catheterization (CVLC) is indispensable in intensive care units since they have capability to allow central venous pressure (CVP) measurement beside of large amount of hypertonic fluid and parenteral nutrition solution administration. However, interventional and infectious complications with maintenance difficulties drive physicians to choose certain insertion points. We tried to figure out the benefits, risks and pitfalls of jugular, subclavian and femoral catheters. Material and Methods: Total of 562 patients hospitalized in our burn intensive care unit between November 2011 and September 2015 are recruited and of them, 450 catheterized cases were reevaluated retrospectively. Burn severity, demographics, catheter related complications and infectious events were examined. Result: There were 919 CVLC in 450 (80%) catheterized patients. Total days were 4246, 4264 and 3075 for femoral, subclavian and jugular veins respectively (mean 12.6). The most encountered complication was pneumothorax seven times occurred in subclavian catheterization. Catheter infection rates were 81 (21%), 66 (20%) and 37 (12%) respectively. Isolated microorganisms were Pseudomonas Aeruginosa (%44), Acinetobacter Baumannii (%21) as leading ones and MRSA, Klebsiella spp, ve Enterobacter spp, were as follows. Patient comfort questionnaire averages were 1.2, 2.7 and 3.9 points respectively. Conclusion: Even Jugular vein is clearest and safest way of CVLC, femoral line had the lowest interventional complication rate. Femoral catheter infection rate was not higher than other choices. We speculated that meticulous asepsis policy in our clinic has led us to this result. If we ignore the inability to measure CVP, lower interventional complication, highest patient comfort are other advantages of femoral line.

PP-136
Antibiotic Prescription for Acute Pancreatitis in a District General Hospital: An Audit of Compliance with BSG Guidelines
Huay Shan Yuen, Jason George, Joanna Reed
Colchester General Hospital, Colchester, United Kingdom

Background: Acute pancreatitis may lead to activation of the systemic inflammatory response syndrome (SIRS), causing pyrexia and tachycardia. To minimise adverse events like antibiotic resistance or colitis, the British Society of Gastroenterology (BSG) guidelines advise against use of antibiotics unless there is an identifiable source of sepsis or more than 30% necrosis on the CT scan. Material and Methods: Retrospective analysis identified 110 patients diagnosed with acute pancreatitis between September 2014 to September 2015. 55 were excluded due to incorrect diagnosis or unavailable notes. Drug charts were reviewed to identify presence of an indication for antibiotics. Pathology and radiology systems were used to identify presence of positive blood cultures and necrosis on CT scans, respectively. Result: Median age of patients was 55 years. Of 55 patients with acute pancreatitis, 10/55(18%) had evidence of necrosis on CT. 23/55(42%) were prescribed antibiotics during their inpatient stay, with pancreatitis documented as the indication in 14/55(25%). Only 6/23(26%) of patients had cultures taken, of which 2/23(9%) were positive. Conclusion: Further education is required to prevent inappropriate antibiotic prescription. Findings will be presented locally to the surgical department. A pancreatitis proforma is being designed to increase understanding and ensure patients are managed in line with BSG guidelines.

PP-137
To look at the completeness and accuracy of National Emergency Laparotomy Audit (NELA) data entries in a District General Hospital
Huay Shan Yuen, Mohammed Al-Azzawi, Hany Nada, Chandima Halahakoon
Colchester General Hospital, Colchester, United Kingdom

Background: We retrospectively analysed NELA data entries of consecutive 100 patients who had emergency laparotomies between February to October 2015. Date and time of admission, time of consultant review, time of decision to operate, time of the operation, and the urgency of the operation were analysed to look at the completeness and accuracy of NELA data entries. Material and Methods: We retrospectively analysed NELA data entries of consecutive 100 patients who had emergency laparotomies between February to October 2015. Date and time of admission, time of consultant review, time of decision to operate, time of the
operation, and the urgency of the operation were analysed to look at the completeness and accuracy of NELA data entries. **Result:** 27/100(27%) patients were excluded due to ‘unknown’ data fields. 20/100(20%) were excluded due to un-availability of case notes for review. Median age was 72 years. 36/53 (68%) had open procedures. Median time for a consultant review was 16.5 hours (range 0 - 214 hours). Median time from decision to operate to the actual operation was 4 hours (range 1 - 264 hours). Extreme outliers were medical patients who were subsequently referred to the surgeons. 51/53 (96%) patients had urgency of their operation documented. 11/51(21%) had their urgency categorized wrongly. True 30-day mortality was 9/53 (17%). Average predicted mortality was 15%. **Conclusion:** Major proportions of NELA data entries were incomplete with ‘unknown’ fields or inaccurate. Medical patients who were subsequently referred to the surgeons skewed data.

**PP-139**

**Case report: Lynch syndrome and sextuple primary malignancies**

Jolanta Zacharicić, Donatas Danys, Eugenijus Stratišavas, Vaidas Čereška, Tomas Poškus, Eligijus Poškus, Virgilijus Beiša, Kestutis Strupas

Center of Abdominal Surgery, Vilnius University Hospital Santariskiu Clinics, Vilnius, Lithuania

**Background:** Lynch syndrome (LS) or Hereditary Nonpolyposis Colorectal Cancer (HNPCC) is the most common hereditary colorectal cancer and accounts for 1% to 3% Lynch and Chapelle estimated that it accounts 5% to 8% for all colorectal cancers. It is an autosomal dominant syndrome characterized by predisposition of various cancers (colorectal, stomach, endometrial, ovarian, renal, small bowel, hepatobiliary tract) at earlier age than in general population and occurs as a result of mutation in DNA MMR genes. **Material and Methods:** This article presents a rare clinical of a 61-year-old female diagnosed with extracolonic Lynch syndrome with 6 metachronous tumors acquiring in digestive tract during the period from 1993 to 2014 (over 21 years). No other cases of six primary malignancies in patient with Lynch syndrome have been reported in literature. **Conclusion:** Metachronoustumours are rare in clinic, but the number of these reports is gradually increasing. Among patients with multiple primary malignancies, double cancers are commonly observed, triple cancers occur in 0.5% of these patients, and quadruple or quin-tuple cancers occur in <0.1%.

**PP-140**

**Cribution of urodynamic investigation to the prediction of urological complications after renal transplantation**

Vladimír Borovička a, Roman Zachoval a, b, Tomáš Marada c, Jiří Frýnek c, Janka Slatinská d, Ondřej Vícklisky d, Libor Janoušek c

a Department of Urology, Thomayer Hospital, Prague, Czech Republic; b Department of Urology, 1st and 3rd Faculty of Medicine, Charles University, Prague, Czech Republic; c Transplant Surgery Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; d Nephrology Department, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

**Background:** Objective of this study is to find out, whether patients with urinary leakage from ureterostomeanastomosis after renal transplantation have different values of urodynamic parameters before renal transplantation in comparison with a patient without urinary leakage. **Material and Methods:** We have evaluated prospectively 127 men who went through renal transplantation between years 2007-2013 and who went through urodynamic investigation
PP-141
The presence of lower urinary tract dysfunction in diabetic patients placed on the waiting list for a combined kidney and pancreas transplantation

Jan Mokriš a, Roman Zachoval a, b, Vladimir Borovička a, Radomíra Kožnarová a, František Saudek c

a Department of Urology, Thomayer Hospital, Prague, Czech Republic; b Department of Urology, 1st and 3rd Faculty of Medicine, Charles University, Prague, Czech Republic; c Department of Diabetes, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Background: Assessment of the presence of lower urinary tract dysfunction in diabetic patients placed on the waiting list for a combined kidney and pancreas transplantation.

Material and Methods: From October 2014 to December 2015 all patients placed on the waiting list for a combined kidney and pancreas transplantation were examined in our department. Every patient had complete urological examination including urodynamics: 1. uroflowmetry: Cmax, 2. filling cystometry: Cmax, Compliance, 3. involuntary contractions 4. voiding cystometry Obstruction: men-Bladder Outlet Obstruction Index women-Blavais-Grount nomogram Hypocontractility: men- Bladder Outlet Obstruction Index women- Bliivas, hypercontractility: men- opening detrusor pressure during micturition, higher index of bladder outlet obstruction (BOOI). To predict the risk of urinary leakage after renal transplantation parameter X was defined. X = 0.1139 - 0.1165 x log(NDV) + 0.1415 x log(pmuo). Patients with the value of parameter X > 0.2 have 93% higher risk of development of urinary leakage (CI 10,6-819,7) with 91% specificity and 90% sensitivity. Conclusion: Our results show that urodynamic investigation could help with the recognition of men with higher risk of urological complications after renal transplantation within the population of men with negative urologic history.
Background: To determine whether preoperative pain as recalled by a patient in the postoperative phase is possibly overestimated or underestimated compared to prospectively scored pain. If so, a subsequent misclassification may induce recall bias that may lead to a different effect outcome.

Material and Methods: Data of seven retrospective cohort studies on surgery for abdominal wall and groin pain using three different pain scores (VRS, verbal rating score; VAS, visual analogue score; NRS, numerical rating scale) were systematically evaluated. Firstly, it was assessed whether retrospectively acquired preoperative pain levels, as scored by the patient in the postoperative phase, differed from prospectively acquired preoperative pain scores. Secondly, it was determined if errors associated with retrospectively obtained pain scores potentially lead to a misclassification of treatment outcome. Thirdly, a meta-analysis established whether recall misclassifications, if present, affected overall study conclusions. Result: A total of 313 surgical patients were evaluated. The overall prevalence of misclassification due to a recall error was 13.7%. Patients not benefitting from surgery (‘failures’) judged their preoperative pain level as more severe than it actually was. In contrast, patients who were pain free after remedial surgery (‘successes’) underestimated preoperative pain scores. Recall misclassifications were significantly more present in failures than in successful patients (odds ratio 2.4 [95%CI: 1.2-4.8]).

Conclusion: One in seven patients is misclassified on the basis of retrospectively obtained preoperative pain scores (success instead of failure, or vice versa). Misclassifications are significantly more present in failures which leads to an overestimation of beneficial effect size of a therapy most of the time.