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OP-1
Obeticholic acid accelerates liver regeneration following portal vein embolization in a rabbit model

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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 signaling, an event implicated in the early phase of liver regeneration 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: The ultimate increase in CLV is the same in both groups. The increase in CLV was 2.0-fold (59.3±19.2% vs. 29.7±16.1, p=0.0013) greater in the OCA group compared to controls. No differences in 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.

OP-2
Effects of various remote ischemic conditioning protocols in a rat model of arterialized orthotopic liver transplantation

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Background: Ischemic-reperfusion injury still represents a major concern in clinical liver transplantation. In the present study we aimed to investigate the effects of remote ischemic conditioning (RIC) in a rat model of orthotopic liver transplantation. Material and Methods: Male Lewis-rats were used (n=144; 240–340 g). Livers were stored in 4°C HTK-solution for 8h and implanted into recipients. Animals were randomly allocated into three experimental groups: RIC1, RIC2, Control. In RIC1, RIC2 groups conditioning was applied in recipients before liver exclusion or after reperfusion (4x5-5 min ischemia-reperfusion via aortic clamping), respectively. After 1, 3, 24, 186h reperfusion, circulatory measurements were performed and subsequently animals were sacrificed (n=6 recipient/group/timepoint). Graft injury was evaluated using various methods. Result: RIC1 group showed significantly (p<0.05) improved portal venous flow and microcirculation (Microcirculation, RIC1-1h vs. Control-1h, 105±13 vs. 70±17 Flow // Velocity, RIC1-1h vs. Control-1h, 19±1.2 vs. 14±0.4 ArbitraryUnits). Following 24h reperfusion, application of RIC protocols has significantly reduced tissue injury compared to the Control according to the serum levels of ALT, AST, LDH and result of histological analysis. Reduced TUNEL-staining was detected on the slides of RIC groups after 3h reperfusion. Supporting findings were obtained from measurements of serum cytokine (IL-10, MCP-1) as well as tissue malondialdehyde and ATP levels. Meanwhile pAkt/Akt ratio changed parallel in each experimental group without significant differences, significant elevation was observed in pBAD/BAD protein and HO-1 mRNA-expression in RIC1 compared to Control.

Conclusion: RIC in the recipient could protect liver grafts in our model. Exact role of the Akt/BAD/HO-1 pathway stills needs to be elucidated.
**OP-3**

Sex steroid hormone receptors in malignant pleural mesothelioma—clinicopathological analysis and effects on tumour cell growth

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**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 oestradiol (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 oestradiol 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.

**Background:** We investigate the optimal portal venous circulation of small-for-size graft (SFSG) in large animal experiment and validate our portal venous pressure control (PVP ≤ 15 mmHg) strategy in clinical LDLT. **Material and Methods:** I. Animal experiment: Nineteen swine transplanted SFSG (30%SLV) were divided in 3 groups: a high-flow shunt group (HS); n = 7, in which PVP was reduced with a 10-mm diameter portocaval shunt (PCS); a low-flow shunt group (LS; n = 6), in which PVP was reduced with a 5-mm diameter PCS, and a no-shunt group (NS; n = 6), in which no PCS was placed. II. Clinical LDLT: In 221 adult recipients who underwent an LDLT at Kyoto University from 2006 to 2013, we analyzed prognostic factors including PVP at operation. **Result:** I. Animal experiment: Seven-day survivals were 83.3% in NS, 100% in LS and 0% in HS (p = 0.0088). NS showed the highest portal venous pressure and portal venous flow. LS showed lower ALT levels. Graft damage was more severe in NS. Intestinal mucosal injury was also most severe in NS. Liver graft at autopsy in HS showed massive hepatocyte necrosis. II. Clinical LDLT: The independent prognostic factors after LDLT were donor-age ≥ 39 y/o (HR13.8, CI 3.3-92.9; p = 0.002), final PVP > 15 mmHg (HR2.1, CI 1.1-4.0; p = 0.03), and final PVP-CVP gradient > 5 mmHg (HR2.3, CI 1.2-4.0; p = 0.008) at the operation. **Conclusion:** Final PVP > 15 mmHg and PVP-CVP gradient > 5 mmHg at the operation were both prognostic factors after LDLT. While reducing PVP may be effective, one should avoid placing large shunts because they greatly reduce PVF and may therefore result in graft failure.

**OP-5**

Can Circulating Melanoma Cells be Detected in the Blood of Patients with Melanoma?

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**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 (7.5 cc 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

**OP-4**

Significance of Portal Venous Flow Control in Living-Donor Liver Transplantation

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**Results:** 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, III, 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.

Background:
Plasma (PRP) have known antioxidative and antiinflammatory effects. We aimed to investigate the effectiveness of these substances on the healing of ischemic colonic anastomosis. Bursting pressure was measured as the mechanical indicator of healing. OHP levels were measured as the indicators of inflammation and tissue healing. Bursting pressure was 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.

**OP-6**
Possible effects of thymoquinone, zeolite and platelet rich plasma on the healing of ischemic colonic anastomosis on rats

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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: Fifty 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 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.

**OP-7**
Does Affectation of paraaortic Lymph Nodes Contraindicate Pancreatic Resection in Cancer of the Pancreatic Head?

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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.
Systematic review of resection rates and clinical outcomes after FOLFIRINOX-based treatment in patients with locally advanced pancreatic cancer

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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 3–4 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.

Nomogram to predict recurrence after curative resection of pancreatic neuroendocrine tumors

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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. Distance 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.

Domino reconstruction of the portal vein in pancreatic surgery

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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**

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**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 unfeasible, 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 (tumors≤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**

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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 adverse 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
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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
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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 /1 + 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
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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 the 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
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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. 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 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 despite revascularisation and of note had long delays in presentation for surgery (>12hrs). There were no in-hospital deaths. Outpatient radiographic follow-up at the first opportunity demonstrated 100% patency Conclusion: Recognising distal limb ischemia at the time of an acute Type A aortic dissection is important as IRAD suggests this portends 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.

OP-17
Enhance of vascular recovery in ischemic limbs by inoculation of mesenchymal stem cells
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**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*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**

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**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, Co/FN. Human saphenous vein endothelial cells were harvested from patients during heart surgery, cultured and exposed to laminar shear stress of 12 dyn/cm² for 2h. The expression profile of adhesion genes (mRNA for VE-cadherin, vinculin, KDR, CD-31, PECAM-1, B1-integrins) and metabolic genes (t-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**

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**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 (isovolumic) 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)**  
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**Background:** Infection of synthetic vascular prosthesis is a serious condition. Graft excision may be a complicated 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**  
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**Background:** Kidney paired donation has been at first performed in the manner described by Wadström et al 2002, with minor modifications. 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 18±11 days. All donors have life-long follow up. **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 18±11 days. All donors have life-long follow up. **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**  
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**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 it 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 Wadström 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 18±11 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 mini-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?
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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 transplantations 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 of 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
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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 4.6%; 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
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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 image 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 termined anatomical or pathological markers using a three-point scale (very good correlation, sufficient correlation, insufficient 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 Appio 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

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**Background:** Pelvic floor disorders are a major public health issue. For female genital prolapse sacrocolpexy 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

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**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 infra-mammary 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

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**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 mid-term 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), and 139 (125.7-150.3) kilos p=0.077; and BMI 52 (48-55), 50.1 (47.4-54.3), and 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 LRGB 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
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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 morbidity obesity.

OP-30
Tumor markers in colorectal cancer
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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, VCAM -1, IGF-1, and Adiponectin, Leptin, circulating tumor DNA, miRNA and mucins were studied. Result: The surveillance based 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 of Nuclear Medicine, Medical School and Teaching Hospital, Charles University Prague, Pilsen, Czech Republic.
Background: Recent advances in chemotherapy and molecular target agents have made initially unresectable colorectal liver metastases (CRLM) converted to resectable. The objective of this study is to clarify the beneficial and adverse effects of conversion chemotherapy for colorectal liver metastases. Material and Methods: We treated 61 patients with unresectable CRLM by conversion chemotherapy. 67 patients with CRLM underwent upfront hepatectomy. The unresectability of hepatic resection is based on the lack of the future remnant liver volume due to multiple bilobar metastases or the tumor location close to the three hepatic veins, and simultaneous unresectable lung metastases. Indocyanine green retention rate at 15 min (ICGR15), and blood chemistry data were measured before and after chemotherapy. The liver and splenic volume was measured by the volumetric analysis before and after chemotherapy. Result: Among these patients, 59 % of the patients were converted to be resectable. The overall survival in patients who had 20% or more tumor shrinkage at 8 weeks after conversion therapy was significantly better, and the 3-year overall survival was 70%. The spleen volume statistically increased after chemotherapy in patients who underwent oxaliplatin-based chemotherapy over 8 courses relative to irinotecan-based chemotherapy. The patient volume was correlated with AST/PLT ratio (p < 0.01), but not ICGR15. The remnant liver regeneration after hepatectomy in patients with long-term chemotherapy tended to be impaired. Conclusion: Surgical treatment was beneficial for patients with initially unresectable CRLMs downstaged by conversion chemotherapy. Long-term chemotherapy prior to surgery was associated with splenomegaly, which may impair liver function and postoperative liver regeneration.

**OP-32**

Pelvic exenteration – strategy and extent of the surgery

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Background: Pelvic floor exenteration is the essential part of complex treatment strategy for advanced small pelvis 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

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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

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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 hyperthermic 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. 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 Paclitaxel. In the short followup all patients are alive with no recurrence detected. **Conclusion:** Cytoreductive surgery and hypertermic 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

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**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 enterocutaneous 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 onsets of such complications appears to be important and needs further investigation.

**OP-36**

IgG4-associated cholangitis in patients resected for presumed perihilar cholangiocarcinoma

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**Background:** Distinguishing perihilar cholangiocarcinoma (PHC) from benign forms of sclerosing cholangitis affecting the bile ducts is challenging. Preoperative histological con-
firmation is difficult to obtain and accurate non-invasive diagnostic tests are lacking. Immunoglobulin G4-associated cholangitis (IAC), an imitator of PHC, is a newly recognized inflammatory disease that can present as sclerosing cholangitis with or without perihilar tumor formation and is responsive to corticosteroid treatment. The aim of this study was to investigate the incidence of IAC in patients resected for presumed PHC. **Material and Methods:*** Benign tissue specimens of patients resected for presumed PHC in our center between 1984 and 2015 were identified from a database. Histological sections were stained for IgG4+ B cells and scored according to international consensus criteria for lymphoplasmacytic infiltration, storiform fibrosis and obliterative phlebitis. The combination of >10 IgG4+ B cells per high-power field plus two histological criteria was considered highly suggestive of IAC. **Result:** Of the 310 patients that had undergone liver and bile duct resection for presumed PHC within the study period, 46 (15%) patients were found to have a benign stricture or tumor. Histological and immunohistochemical criteria for IAC were fully met by 17 (37%) patients. In the remaining 29 patients unclassified sclerosing inflammation was observed. **Conclusion:** The incidence of benign biliary disorders after resection for presumed PHC was 46 (37%) patients. In the remaining 29 patients unclassified sclerosing inflammation was observed. Is it demonstrates that the failure rate is higher than the pick-up rate at laparoscopic staging. The data suggests that laparoscopy for ICC may not be required and that with the advent of multi-slice CT scanning radiological staging may be sufficient prior to attempted resection.

**OP-38**

**The application of preoperative liver simulation to perform safer and higher-quality hepatectomy**

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**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 PTPLE, left trisectionectomy with concomitant resection of right hepatic artery was successfully performed with negative surgical margins. 2. Segmentectomy 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 NASB. We successfully performed right anterior sectionectomy by cutting four of five 4th order divisions of Glissonian 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-37**

**Does staging laparoscopy have more utility in determining resectability in hilar compared to intrahepatic cholangiocarcinoma?**

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**Background:** Staging laparoscopy is part of the routine management of cholangiocarcinoma for determining if there is occult intra-abdominal metastatic disease not discernable on computed tomography (CT) cross-sectional imaging. The aim is determine the comparative utility of laparoscopy between intra-hepatic (ICC) and hilar cholangiocarcinoma. **Material and Methods:** A database of 115 cholangiocarcinoma patients undergoing staging laparoscopy over a 10 year period from January 2005 at a tertiary Hepato-Biliary referral centre was retrospectively analysed. The efficacy of staging laparoscopy in terms of prevention of不必要的 laparotomies was defined as the Yield of staging. **Result:** 1. Hemihepatectomy and trisectionectomy with concomitant resection of right hepatic artery was successfully performed with negative surgical margins. 2. Segmentectomy and sectionectomy with concomitant resection of right hepatic artery was successfully performed with negative surgical margins. 3. 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.

**Result:**

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<th>Group</th>
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<td>S</td>
<td>32.4%</td>
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<td>C</td>
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**Conclusion:** The application of preoperative liver simulation to perform safer and higher-quality hepatectomy
The ‘AbdoMAN’: A physical abdominal wall simulator for biomechanical studies on techniques for closure of laparotomy


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 74.9 mmHg (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). Incision distension was 0.34±0.11mm (3x3mm), 0.32±0.13mm (5x5mm) and 0.24±0.21mm (10x10mm). Closure modality 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 for animal and clinical studies on abdominal wall related aspects of abdominal surgery.

Prophylactic mesh placement to avoid incisional hernias after stoma reversal – A systematic review

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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.
Feasibility and perioperative hemodynamic changes of NOTES cholecystectomy in experimental model of calculose cholecystitis

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Background: Natural-orifice transluminal endoscopic surgery (NOTES) as an evolving concept of minimally invasive surgery. The physiological impact during NOTES may differ from standard procedures because of presumed longer operation and need of extensive body positioning. The aim of the study was to compare transrectal NOTES, laparoscopic and open approach to cholecystectomy including hemodynamic monitoring. Material and Methods: Model: Human gallstones were inserted laparoscopically via cholecystotomy in 42 animals four weeks prior intervention. Animals were randomized into NOTES (N=14), open (N=11), laparoscopic (N=11), and sham groups (N=6). NOTES: cholecystectomy was performed with double channel endoscope via transvaginal approach. The access site was closed with OVESCO clip. Result: The procedure time was significantly longer in NOTES than in open and laparoscopic groups 145 (90-240) vs. 40 (25-65) vs. 63 (40-90) minutes, p <0,001. In 3 animals from NOTES group, the bladder dissection was complicated by severe bleeding, which was not treatable endoscopically. All followed hemodynamic parameters did not differ from sham animals in all groups. All rectotomies were healed, however intraabdominal infection occurred more frequently in NOTES (4/11) than in open (2/11) and laparoscopic (1/11) groups. Conclusions: During the technical difficulties and longer operation times, NOTES did not affect hemodynamic parameters. The feasibility rate of NOTES in terrain of calculose cholecystitis did not reach conventional approaches. There were more intraoperative and postoperative complications in NOTES group.

Peroral endoscopic myotomy: A prospective evaluation of 109 consecutive cases

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Background: Peroral endoscopic myotomy (POEM) is becoming a standard endoscopic procedure for esophageal achalasia. In this prospective, single-center study we report mid-term results of POEM. Material and Methods: Since 2012, a total of 112 POEM procedures have been performed in 109 patients with achalasia. 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 - 97% (95% CI: 93-100), 96% (92-100), 98% (94-100) and 85% (71-98). The median Eckardt score decreased from 7 to 0 at 3, 6 and 12 months, and to 1 at 24 months; p<0.001. Quality of life significantly improved according to Eyspalh-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.

Natural history of elective stoma closure: application to select good candidate for ambulatory stoma closure

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Background: Ambulatory surgery is defined by a hospital length of stay (LOS) of less than 12 hours. Different teams have evaluated the feasibility of ambulatory stoma closure. The aim of this study was to determine a population of good candidate for stoma closure (GCSC) in ambulatory surgery. Material and Methods: From January 2011 to December 2014, 222 patients underwent stoma closure and were included in the present retrospective single centre study. The primary endpoint was the rate of GCSC defined as a short
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 handsawn 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 handsawn 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.

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**OP-44**

Reducing the amount of blood tests on surgical inpatients in an emergency setting

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**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.

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**OP-45**

Enhanced Recovery after Surgery (ERAS) in elective colorectal patients in a District General Hospital: systematic impact analysis post implementation

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**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.

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**OP-46**

Long-term functional results of low anterior resection with colonic J-pouch reconstruction for rectal cancer in elderly patients

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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-47

Acute and preventive protective effect of melatonin against inflammatory and apoptotic response secondary to ischemic brain injury in aged rats

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Background: Brain stroke represents a major cause of death and long-term disability. Age is an important prognostic factor for poor outcome. Inflammation and oxidative stress during cerebral stroke contribute to neuronal dysfunction and death. We have previously shown that melatonin treatment was able to decrease inflammation and apoptosis after brain stroke. The present study aimed to compare the effect of preventive vs. acute melatonin administration on brain ischemic injury of aging rats. Material and Methods: 18 months old Wistar rats were subjected to middle cerebral artery obstruction (MCAO). Animals were divided in 3 groups: Non-treated (NT), treated with a daily dose of melatonin (10 mg/kg) from 24-h before surgery until 7 days after surgery (PrevT), and treated only after surgery during 7 days (AT). Hippocampus and cortex were collected and mRNA expression of IL-1β, TNF-α, glial fibrillary acidic protein (GFAP), sirtuin 1 (SIRT1), BAD, BAX and Bcl2 was measured by RT-PCR. Result: Expression of TNF-α, IL-1β, GFAP, BAD, and BAX increased significantly in hippocampus and cortex, both ipsilateral and contralateral, after MCAO whereas SIRT1 and Bcl2 significantly decreased. PrevT animals experienced a significant decrease in TNF-α, IL-1β, BAD, and BAX in the ipsilateral and contralateral areas of both hippocampus and cortex. AT decreased BAD and BAX expression in the contralateral hippocampus with no effect ipsilaterally. Melatonin counteracted hippocampal decrease of SIRT1. This effect was more evident in PrevT group. Conclusion: Our results suggest that melatonin could be a valuable therapeutic agent that may protect the elderly from the damaging effects of brain stroke.

OP-48

Continuous Intrathecal Baclofen Delivery in Severely Disabling Spasticity

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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 Ashworth 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 hemi-laminectomy 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
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
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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 electrosprun 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
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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 recommendation of 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
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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
treatment. We evaluate Folic Acid in an ischaemia-reperfusion murine model. **Material and Methods:** 24 WAG male rats were subjected to 3 hours of non-invasive right lower limb ischemia. In control group, rats received no treatment. In experimental group, rats were pre-treated with Folic Acid prior to the end of the ischemia. Then, animals were sacrificed at 3 hours (n=12) and 24 hours (n=12) of reperfusion. At 3 hours blood samples were collected and Na, K, CI, Urea, Creatinine, CK, LD, AP, ALT and AST were analysed. At 24 hours ischemic limb section and weight of gastrocnemius were compared with non-ischemic limbs in each animal. Statistical comparison was made amongst the groups. **Result:** CK was significantly decreased in treated group (6456 ± 1662UI/l vs 9459 ± 1467UI/l; p<0.01). The same was observed with LD (832 ± 204UI/l vs 1395 ± 262UI/l; p<0.01). There was also a lower increment of limb section (17.37%±9.23 vs 29.9%±10.0; p<0.01) and gastrocnemius weight (7.87±6.2gr vs 9.46±3.3gr; p<0.05) in Folic group. **Conclusion:** Folic Acid minimizes the increase of CK and LD, as well as local oedema and leucocyte infiltration, after 3 hours lower limb ischemia. Thus, it may become a prophylactic treatment when tourniquet is used in clinics.

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**OP-52**

**Canal to Diaphysis Ratio as a Risk Factor for Hip Fractures and Hip Fracture Pattern**

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**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**  
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**Background:** Abdominal injury is the third most common cause of death from trauma. Blunt trauma remains the commonest type of abdominal injury. Road traffic accident is the most common cause of blunt trauma abdomen. Early diagnosis and 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 validational 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 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**  
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**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**  
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**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
rectus sheath fascia. Staged abdominal closure was necessary in 1 case (2%) and pedicled anterolateral thigh flaps in 2 cases (4%). There was no significant difference in the variables compared in patients with and without abdominal wall closure problems (p>0.05). **Conclusion:** In contrast to the current literature, 94% of our patients had primary abdominal wall closure. Abdominal wall closure technique did not affect patient outcomes.

**OP-57**
**Abdominal free flap breast reconstruction outcomes and cost analysis: A review of 172 consecutive cases**

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**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**

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**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 (ρ=-0.306, p<0.0001). Prevalence of mutations were more common in IntClust 3 (8.4%), and 8 (11.4%), compared to other subtypes (p<0.0001). Our meta-analysis included 36 published studies, with data on 9070 patients, as well as patient-level data from an additional 3272 individuals (SEARCH and NEAT). Reduced E-cadherin expression was significantly associated with increased all-cause mortality (HR 1.22, 95% CI 1.04-1.44; p=0.02) and breast cancer specific mortality (HR 1.18, 95% CI 1.02-1.35; p=0.02). Substantial heterogeneity was observed (I² = 66% and 64% respectively). The method for assessing E-cadherin staining intensity varied widely across studies, as did the cut-point for E-cadherin low expression (range 0-70%). **Conclusion:** E-cadherin expression is strongly influenced by mutation and modestly 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

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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. Results: Between Jan-Sept 2015, we randomly assigned 102 patients. The mean OBAS had a median of 2.0 [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 Allogeneic Transplantation for uremic patients in Lille

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Background: Islet allogeneic 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 allogeneic ITA with multiple sequential radiologic or surgical intra-hepatic infusions and 14 T1D received an allogeneic 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 vs IAK were respectively at 5 years / 10 years: 0.86 vs 0.84 (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?

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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 comparably 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**

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**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**

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**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 samples/hemodynamic measurements, and epicystostomy 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 sluiced-removed, 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 groups 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**

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**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 (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.
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.

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**OP-66**

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

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**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 behavior 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: Co 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.

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**OP-67**

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

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**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

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Background: Obstructive cholestasis impairs liver regeneration following major hepatectomy and compromises post-operative 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 7 (before PHx), 8, 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

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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

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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 falciform 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 liver heptectomies. 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 minority 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**

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**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) was 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.

**Result:** ICG-clearence and the observed morphological changes.

**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**

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**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±0.13; t336=6.13±3.70 minutes) while ts slowly decreased (t0=68.8±2; t24=110±22; t336=79.12±12 minutes) (p<0.05). L lobes underwent necroapoptotic atrophy (ml/mBODY%0=3.77±0.3%; ml/mBODY%336=0.62±0.3%), while NL lobes showed excessive mitotic activity causing hypertrophy (ml/mBODY%0=1.17±0.1%; ml/mBODY%336=3.37±0.3%).
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 iso-flurane anesthesia, a midline laparotomy was performed for clamping the left lateral lobe artery (LLA) of 18 WAG/RijCrl male rats. After that, tumour induction was done by seeding 250 000 syngeneic CC-531 cells into the spleen; five minutes later splenectomy was performed in all animals and after 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 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-73**

**Effect of partial hepatectomy on the seeding and growing of liver metastases in a rat model**

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Result: As a result of GPC administration, liver IR injury-related deterioration of Complex I-linked oxygen consumption was elevated with significantly lower leak respiration. The activities of XOR, MPO and NADPH-oxidases were significantly decreased and ROS formation in parallel was 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-74**

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

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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 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**

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Background: Background: Adhesions formation are postoperative 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

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**Background:** Incisional hernias (IH) are usually found as a complication of about 11% of abdominal wall closures. Matrix metalloproteinases (MMPs) were also suggested to have an important role in the pathogenesis of IH. Integrins may 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 and received 12 mg/kg/day i.p. 5-FU on 0,1 and 2nd day after the operation; 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 T 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 peroperative dietary supplement of glutamine improved impaired wound healing in adjuvant 5-FU-treated rats.

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

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**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; group 2 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; group 3 were fed rat chow +100 mg/day glutamine 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. 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

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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. In the PRP group, 0.5 ml PRP solution 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. Reepithelization 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 Dexpanthenol on Ischemic Colonic Anastomotic Healing in Rats

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Background: Beneficial effects of dexpanthenol (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 dexpanthenol (ID); ischemic left colon anastomosis+500 mg/kg dexpanthenol (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 sulphhydryl values were lower in group I than in the L, ID and IDD groups at POD3 (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 I and L groups (p<0.001) at POD7. 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
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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 when 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
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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
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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: Coecostomy 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 perifistular 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%) (p=0,02) rats in group A and B, respectively. The signal...
of bioluminescence was strongest on day 2 (40,3*10^4 (28,2-74,6*10^4) and decreased slowly afterwards – day 14: 6,88*10^4 (3,12-22,4*10^4) and day 30: 6,15*10^4 (2,51-18,9*10^4) (values are medians in p/s/cm²/sr). Conclusion: Local application of ADSCs improves fistula healing after surgical treatment with fistula tract ligation. The presence of viable ADSCs in perifistular tissue was confirmed by bioluminescence even 30 days after application.

OP-83
Sevoflurane protects against hepatic inflammatory and apoptotic response secondary to lung resection surgery with one-lung ventilation

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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.

OP-84
Properties of a novel, fully synthetic, polyurethane based, two-component adhesive after topical administration: A pilot study

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Background: Tissue adhesives offer a good alternative to surgical sutures because they provide a convenient, less traumatic, less painful wound closure and improved wound healing. Aim of the study was to test, the efficacy and safety of a fully synthetic polyurethane based adhesive (MAR-1) in a pilot clinical study. Material and Methods: After ethical committee approval and informed consent ten patients were enrolled in a controlled, non-randomized, single-center feasibility study to determine safety and efficacy of MAR-1. Patients were undergoing coronary artery bypass grafting (CABG), which required the harvesting of the saphenous vein from the leg. Absorbable sutures were used to close the subcuticular tissues prior applying MAR-1. All wounds were assessed by visual inspection for effectiveness in closure after 2, 5, 7, and 10 days. Parameters to be used include:100%,50% to 99%, <50% epidermal apposition; no, <50%, >50% dehiscence. The Modified Hollander Cosmetic Scale was used to evaluate cosmetics 10 days after closure. Result: Follow up – day 2, 5, 7, and 10, 100% wound apposition, no dehiscence, no visible reaction, no discomfort, Modified Hollander Scale for all patients 0. MAR-1 remained transparent, application took minimal time and no patient required more than one syringe. Glue was intact in all the patients for a minimum of 10 days except in one patient (7 days). Conclusion: Assuming that the complete wound healing in humans takes about 10 days, a mechanical adhesion of wound edges is required only in the first 7 days. The completion of the granulation phase of the skin takes about 6 days. Therefore, MAR-1 is safe and highly suitable for topical wound closure.

OP-85
Efficacy of the novel medical adhesive, MAR VIVO-107, in an acute porcine liver resection model

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**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 (54.3±15.57g vs. 75.6±23.93g). 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 has been shown under pre-clinical conditions. MAR VIVO-107 permits hemorrhage control within seconds, even in a wet environment.

**OP-87**

**Human Aortic Valve Sclerosis vs Stenosis: A Comparative transcriptome profiling**

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**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 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:** Results: 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:** 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-86**

**A Direct Comparison of Porcine (StratticeTM) and Bovine (SurgimendTM) Acellular Dermal Matrices in Implant-Based Immediate Breast Reconstruction**

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**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. Results: 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: 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.
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

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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 5%) 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 glycocalyx injury induced by ischemia/reperfusion

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Background: Ischemia/reperfusion (I/R) injury leads to major complications after lung transplantation. Recent evidence showed that a damage of the endothelial glycocalyx contributes to the I/R injury pathophysiology. Cytokines, free radicals, and several physiological enzymes modulate the glycocalyx 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 glycocalyx 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 (p38, p38-MAPK, PI3K and ERK) expression and glycocalyx 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 glycocalyx 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, P113/0002.
OP-90
Experimental chronic lung allograft rejection – which mouse model is reliable?
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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 donor 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 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 lower PaO2/FiO2 ratio than MINOR Tx at 4 and 8 weeks (p<0.05). Conclusion: Among experimental CR models, the MAJOR model demonstrates pronounced attenuation of CR 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).

OP-92
Different lung microRNA profiling in human uncontrolled non-heart-beating donors and brain-dead donors
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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 pathophysiologic 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: The expression Let-7d, miR126, miR182, miR155, miR146 and miR103 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
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Background: Right lobe donor heptectomy 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 heptectomy 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 criterion 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
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Background: Living-donor liver transplantation (LDLT) for patients with end-stage liver disease has gradually become established worldwide. However, clinical problems remain.

Background: In living donor liver transplantation, smaller grafts may lead to small-for-size graft syndrome, while reducing excessive portal venous pressure is considered to be beneficial to avoid that complication. Here, we propose portocaval shunt in a rat model for partial liver transplantation. Material and Methods: We use male Lewis rats weighing 250 to 350 g. Rat PLTtx with hepatic artery reconstruction was performed. The right lobe was selected as the graft for 20% transplantation and the superior right lobe for 15% transplantation. Rats were divided into two groups after 15% PLTtx with PSC group or without PSC group. On the back-table, the branch of the portal vein and suprahepatic vena cava was approximated to form a single orifice for portocaval shunt. Portal venous pressure after confirmation of reflow and survival was analyzed. Result: In the 20% transplantation group, 7-day survival was achieved in all recipients (6/6). In the 15% transplantation without shunt group, the 7-day survival rate was 16.7% (2/12), while that was significantly improved to 83.3% (5/6, p<0.02) in the 15% transplantation with shunt group. There was a significant difference for portal venous pressure between with and without shunt at 1, 2, 6, and 7 minutes after confirming reflow (p=0.03, 0.03, 0.01, 0.01, respectively). Laboratory data and histology findings showed no difference between the 15% transplantation groups at 24 hours after transplantation. Conclusion: We established a clinically relevant small-for-size graft model in rats for research of its mechanism.
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
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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
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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 lumber 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 independent risk factors for death after LDLT. Conclusion: Preoperative high VSR as well as low muscularity were closely involved with posttransplant mortality.
**OP-98**

Sutureless Perceval.S valve: “off label” implantations

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**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 bioprosthetic replacement (MVR) in 5 patients. **Result:** The mean age, mean logistic EuroSCORE and mean cross-clamping time were respectively in the DAA 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, 16.4, 139 min). One re-clamping was needed 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). Pacemaker 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.

**OP-99**

Comparison of Micro-fractures Occurrence in Different Thawing Protocols on Cryopreserved Aortic Root Homografts

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**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 tested: 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 severed 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. Four (66%) showed no damage to the basal membrane, one (16%) sample showed minimal basal membrane damage and one sample had severe basal membrane defects. All six (100%) samples showed no defect in 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.

**OP-100**

TAVI by carotid approach: Alternative number 1 to the femoral approach?

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**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 anaesthesia and one procedure under sedation for morbid obesity. Eight implantations were performed using the transfemoral catheter Commander® and 10 implantations with the transapical catheter ascenda+®. 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 atroventricular 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
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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 arterierycutaneous femoral vein cannulation in 11 patients (81.1% men). Mean age was 53 ± 11.1, (range: 16 - 55) years. Subclavian artery is swung 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 removed, distal retro-tape is passed through a snares. This maneuver allows us to manage distal flow of subclavian artery by tightening this tape in order to avoid complications 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
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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 prosthesis requires 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.

KARGER
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, most commonly prolene-mesh. Fifty patients underwent primary sternal resection. Resection margins were clear in 21 patients (38%). 46 patients underwent concurrent lung resection, most commonly lobectomy (36 patients). Primary chest wall repair was possible in 26 patients (46%), with the remaining requiring reconstruction with synthetic-mesh, most commonly prolene-mesh. Fifty patients underwent primary soft tissue and skin closure, with local myocutaneous flaps required in 6 patients. Median postoperative length-of-stay was 9(6-14) days. Postoperative complications were rare (10 patients) and the most common was hospital-acquired pneumonia, which was the cause of the 2 in-hospital deaths. In-hospital and 90-day survival were 96% and 95%, respectively. Median survival was 27[12-50] months at 159 patients. In-hospital and 90-day survival were 96% and 95%, respectively. Median survival was 27[12-50] months at 159 patients.

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

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OP-103

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

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

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**Background:**目前 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**

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**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 trans-thoracic oesophagectomy. **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%;
Aid Intraoperative Diagnosis in Parathyroidectomy for Primary Hyperparathyroidism

Background: Parathyroidectomy is the definitive treatment for primary hyperparathyroidism (PHPT). There is considerable challenge in the intraoperative identification of parathyroid adenomas, and the use of frozen section, minimally-invasive radioguided parathyroidectomy (MIRP) following a Sestamibi (MIBI) scan, and intraoperative parathyroid hormone (ioPTH) monitoring has, either alone or in combination, become the standard of care to aid intraoperative diagnosis. 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 undergoing 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 sensitivity increases to 97%. 96% of patients had a good outcome, 2% had persistence of disease and 2% had recurrence, over a mean follow-up period of 28 months.

Conclusion: The RNP is a useful adjunct to aid intraoperative diagnosis in parathyroidectomy for PHPT and should be employed if possible.

OP-107
Factors associated with gene-expression profile use in Dutch breast cancer patients

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Background: Gene-expression profiles (GEPs) are increasingly 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 Netherlands Cancer Registry database. Multivariable logistic regression analysis was performed to assess which patient-, tumor- and hospital characteristics were independently 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, absence 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 addition, 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 hospitals, institutions with a higher patient-volume and hospitals situated in the Northern part of the Netherlands.

Conclusion: 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.
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**

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**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 liver lobes were increased. Accordingly, the microculation 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**

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**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 adopted 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 and adapting a silicone-made placenta. We then had to assess the pedagogical impact on experienced obstetricians that have a good experience of 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.
Experimental Photodynamic Therapy on Xenotransplanted Human Tumours

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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 oncosurgical 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 thiry 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.

A comparison of patient satisfaction (using the Breast-Q questionnaire) with bilateral breast reconstruction following risk-reducing or therapeutic mastectomy

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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 2003-2014 in 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-S CORE 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 unilateral 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.

Can we predict physical fitness from the preoperative CT scan in colorectal cancer patients?

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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 seem 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**

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**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.
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.

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 [270pulses], p=0.031). In vivo, no temperature difference was observed with and without stent. Tissue examination showed white coagulation 1mm around the electrodes only 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.
(video- and graphical) information on the disease, treatment goals, options, possible outcomes and risks. Integrated questions assess patients’ knowledge, preference and health status. Questionnaires addressing possible barriers and facilitators for using this RDCA were sent to surgeons, gastro-enterologists and specialized nurses. Post-surgery rectal cancer patients received an acceptability survey. **Result:** Out of 593 healthcare professionals approached, 77 responded (13%). Of these, 76% expressed a need for the RCDA, 69% felt comfortable presenting it to patients, and 65% actually intended to use it. The generic aspect of the RCDA and time constraint were seen as main barriers for implementation. Response rate among patients was 83 out of 115 (72%). Of these, 95% appreciated the availability of a RDCA, while 96% would recommend it to future patients. **Conclusion:** The RCDA is appreciated by both healthcare workers and patients, emphasizing the importance of proper information to start a deliberation of options. Hospital specific approach and tailor made information will foster SDM and RCDA implementation.

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**MP-7**

**Clinicopathologic Features of Patients with Colorectal Cancer: Differences Between Emergency and Elective Surgical Cases**

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**Background:** Ileus resulting from colorectal cancer is a serious complication. Patients who undergo 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.

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**MP-8**

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

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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 (circular tumour 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.

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**MP-9**

**Cautery knives and gastrotomies; an explosive combination**

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**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 over-growth. 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.

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**MP-10**  
**Enteroegenous cyst of the small bowel mesentery: A case report**  
Jolanta Zacharic a, Donatas Danys a, Raminta Martinaityte b, Eligius Poskus b, Tomas Poskus b, Kestutis Struppas b  

**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 the current 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: enteroegenous cyst with inflammation. **Conclusion:** Complete excision of the enteroegenous cyst is the optimal treatment. The correct diagnosis usually emerges after the operation and histological examination of the cyst.

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**MP-11**  
**Serum microRNA expression profile as a novel diagnostic biomarker for esophageal squamous cell carcinoma**  
Yutaka Shimada a, Yoshinori Takei b, Kazuaki Watanabe 4, Tomoyuki Okumura b, Takuya Nagata b, Kazuhiro Tsukada b, Haruka Fujinami b, Miwako Arima c, Tetsuya Abe d, Yasumasa Niwa d, Masahiro Tajika d, Tetsuho Sudo a, Kazuharu Shimizu a

**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 O 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.

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**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 Simquet a, Hubert Thaillades b, D Laux b, Emmanuel Le Cîţia b, Roland Demaria a

**Background:** Infrared cameras are increasingly used to perform endoscopic surgery, Montpellier university, Montpellier, France; b IES, Montpellier university, Montpellier, France; Laboratory of experimental surgery, Montpellier university, Montpellier, France

**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 O 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).  
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**Conclusion:** Our results suggest that selected miRNAs may be useful biomarkers for the detection of ESCC.
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 cannulated 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 infrared 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 ultrasounds allow 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

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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 man 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

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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 (Monofer). 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**

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**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 (OR8.9 95%CI 2.1-36.8; p=0.003) and eGFR≤30 (OR11.9 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**

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**Background:** Hemangiomas are characterized by benign neoplastic proliferation of vascular endothelial cells. Mast cells play a role in neangiogenesis 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 hemangiomatoz 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**

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**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-tomography scans (CTa) are the most accurate tool to demonstrate a PAEF. Without a strong clinical suspicion, diagnosing PAEF is hard. The overall PAEF-related mortality is high (61-100%) and decreases after surgery (30-40%). **Conclusion:** Conclusion: A primary aortoenteric fistula involving the sigmoid is very rare. Clinical presentation can vary, diagnosis 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.

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**MP-18**

**Portomesenteric venous thrombosis – a rare but probably under-reported complication of laparoscopic surgery**

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**Background:** Porto-mesenteric venous thrombosis (PMVT) is a rare but well reported complication following laparoscopic 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 incidentally. 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 revealed portal venous gas and extensive small bowel infarction. 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 worsening abdominal pain three days after laparoscopic right hemicolectomy for adenocarcinoma. CT scan revealed thrombus in the portal vein. She was commenced on anticoagulants 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 thromboprophylaxis in those undergoing major laparoscopic surgery until formal guidelines become available.

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**MP-19**

**Atypical lower abdominal pain**

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**Background:** Hepatic artery aneurysms (HAAs) are rare (incidence 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 abdominal 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 thrombosed aneurysm of the common hepatic artery measuring 40x47x41mm was found. He was referred to the hepato-biliary 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. Percutaneous embolization is the preferred technique for intrahepatic aneurysm and endovascular therapy is the emerging treatment for visceral aneurysms. Surgical treatment involves ligation or revascularization. **Result:** Post-operatively his recovery was complicated by anaemia, thrombocytopenia, and a vein-harvest site haematoma. He was discharged 6 weeks later with no evidence of deranged liver function. A 3 month and 6 month post-operative CT angiograms 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 robotics) to inform management of this rare phenomenon.

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**MP-20**

**An unusual case of penile metastasis following abdominoperineal resection with VRAM flap reconstruction for rectal adenocarcinoma**

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**Background:** Metastatic deposits to the penis from colorectal malignancy are a rare occurrence in clinical practice. Although a richly vascularised organ with important circulatory communications, the penis is seldom the site of metastases. 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 abdominoperineal 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
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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
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Background: Fournier gangrene is necrotizing fascitis 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-years-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

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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 intraoral 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

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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 unresponsive children are small and retrospective. Objective of this prospective study is to investigate the effectiveness of an anterior neurectomy 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

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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

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Background: The authors present the results of the study comparing the incidence of complications after surgery of the pancreas and peripancreatic 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 peripancreatic 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 for the malignancy as non-cardiac patients. Conclusion: A history of heart disease may be one of the causes for contraindication of pancreatic surgery. 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

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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 2 cm 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 pancreatectomy 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.
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 pancreas stump to stomach

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Background: Following a prevalence of GIA for treatment of pancreas stump, more preventive technique for postoperative pancreatic juice leakage has been required. We experienced 5 successive patients undergone 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 submergent case following left hemicolecotomy 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 post operative(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?

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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-Jarnagin Score Laparoscopic Only Laparotomy Open/Close Resection % Resection T1 6 2 11 57.9 T2 1 10 83.3 T3 10 8 7 28 T1; T2; Z-Score -1.4758; p = 0.14 T1; T3; 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 pre-operative assessment of resectability simpler.

MP-31
Liver semiautomatic virtual resection

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Background: The development of liver surgery achieved many important mile stones, but full use of all technical and clinical progressions is slowed down still 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...

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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)**

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**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?**

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**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 the 2 hottest 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
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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. Result: Histology confirmed mesenteric lymphangiomas. Conclusion: Our conclusion is that mesenteric lymphangioma should be included in the differential diagnosis of acute mechanical small bowel obstruction in a young adult in the absence of previous history of operative intervention and hernia.

MP-35
Spinal versus General Anaesthesia in Surgery for Inguinodynia: A Randomised Controlled Trial (SPI-NASIA trial)
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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 meshectomy) 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
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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-
Consistency of patient-reported outcomes after cholecystectomy and their implications on current surgical practice

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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 patient and preoperative 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 GIQLI-score (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 prove 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

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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.

Gallbladder Agenesis: A rare case presenting with pancreatitis secondary to pancreas divisum

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Background: Gallbladder agenesis is a rare congenital anomaly with an approximate overall incidence of 0.01-0.09%. It can exist alone or be associated with congenital malformations of other systems. This is the second case to be reported in the literature of gallbladder agenesis and pancreas divisum associated with pancreatitis. Result: A 39-year-old male presented with acute epigastric pain and tenderness, and nausea. He reports experiencing similar episodes which settled without medical intervention two years...
High Yield of Occult Metastases during Staging Laparoscopy for Locally Advanced Pancreatic Cancer

Mustafa Suker, Bas Groot Koekamp, Ferry Eskens, Joost Nuyttens, Casper Van Eijck

Aim: To assess the yield of occult metastases found during staging laparoscopy in patients with LAPC. Material and Methods: Between January 2012 and August 2015, 51 patients underwent staging laparoscopy with MRCP. Results: Occult metastases were found in 19% of patients with LAPC. Conclusion: Staging laparoscopy should be a standard procedure for patients with LAPC.

Management of a Patient Developing Necrotizing Fasciitis after Dental Intervention in Intensive Care Unit

Sukru Tekindur, Behic Girgin, Tuna Erturk, Memduh Yetim, Ozgu Kulickaya

A 70-year-old man developed necrotizing fasciitis of the neck after dental intervention. Dental infections are the most common cause of NF. Material and Methods: We present a patient developed necrotizing fasciitis of the neck after dental intervention. Result: A 70-year-old man noticed pain, swelling, and redness in the submandibular region after dental intervention. He was admitted to our intensive care unit with a diagnosis of necrotizing fasciitis. Bacillus was isolated. He was transferred to the intensive care unit for necrotizing fasciitis. 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.
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 was having 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. Cholecystectomy, t-tube drainage and anterior and posterior surface openings of the pancreas were closed with non-resorbable 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?

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**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-43**

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

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**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-operator endoscopic retrograde choledocho-pancreatography (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-resorbable interrupted suture. After a transitory pancreatic fistula, both drains could be removed, and the patient demonstrated a normal appearance 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.
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 (monolayer). **Conclusion:** This technique offers a method of detecting cholangiocarcinoma cells 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.

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**MP-46**

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

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**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.

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**MP-47**

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

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**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-1β in muscle were raised in the IR group compared to the sham group. Some parameters were lower in the groups of IR+H,IR+O3 and IR+H+O3 in comparison 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 compared to sham 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-1β 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**

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**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**

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**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**

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**Background:** A new method of ethanol injection is proposed for soft tissue imaging in micro-CT.

**Material and Methods:** A new method of ethanol injection was proposed to improve soft tissue imaging in micro-CT. The method was compared to the traditional method of injection (cylinder with a needle). The ethanol was injected through a small needle and a capillary tube. The injection was made in a small cavity created by a staple from a Tri-Staple™ AMT stapler. The injection was performed in various conditions (pressure, flow rate) to improve the quality of the images. The images were compared to the conventional method of injection to determine the effectiveness of the new method.

**Result:** The new method of ethanol injection was found to be more effective than the traditional method. The images obtained with the new method were more clear and detailed, allowing for better visualization of the tissue structures. The new method also allowed for more precise control of the injection process, resulting in fewer artifacts and improved image quality.

**Conclusion:** The new method of ethanol injection for soft tissue imaging in micro-CT was found to be more effective than the traditional method. This method allows for better visualization of tissue structures, making it a valuable tool for medical imaging.
**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 ethanol concentrations 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.

**MP-52**

**Optimized Algorithm Based on Real-time Force Feedback Enhances Powered Stapler Performance in Ex Vivo Porcine Stomach**

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**Background:** 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...
will continue to utilize clinical data and enhance device performance, leading to improved patient outcomes.

**MP-S3**

Comparing the efficacy of targeted spinal cord stimulation (SCS) of the dorsal root ganglion with conventional medical management (CMM) in patients with chronic post-surgical inguinal pain: The SMASHING trial

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**Background:** Some 10% of patients who undergo a standard inguinal hernia mesh repair develop chronic (>3 months) post surgical inguinal pain (PSIP). If medication or peripheral nerve blocks fail, surgery including neurectomies and/or mesh removal may offer relief. However, a small portion of these patients do not respond to any of the currently available remedial treatment modalities. For these patients, targeted spinal cord stimulation (SCS) of the dorsal root ganglion (DRG) might be a viable option. Aim of this randomized and controlled study is to evaluate the efficacy of targeted SCS of the DRG using the Axium® SCS system of St. Jude Inc. in patients with PSIP. **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. **Conclusion:** The incidence of colorectal malignancy after admission for diverticulitis is <1% (similar to life-time risk). However, there is significant incidence of premalignant polyps. Although lower than the detection rate seen in the NHS bowel screening programme, it is still higher than the recent national (non-screening) aspirational adenoma detection rate of 20%. Accordingly, endoscopic evaluation has utility and should not be performed via COL and not by FOS. Our data do not support an association between complicated diverticulitis and neoplasia but we recognise the potential for Type II error.

**MP-S4**

Incidence of colorectal neoplasia after CT – confirmed diverticulitis – Yes to colonoscopy, No to flexible sigmoidoscopy

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**Background:** The utility of endoscopic evaluation following admission with diverticulitis is unclear. NICE suggests evaluation following all hospital admissions. There is further uncertainty whether colonoscopy or flexible sigmoidoscopy is preferred. This study assesses the rate of colonic neoplasia detection following admission with CT-proven diverticulitis in a large DGH. **Material and Methods:** Single-centre retrospective study from 2010–2015. Inclusions: Patients with hospital admission for acute diverticulitis. Data included presence of complicated or uncomplicated diverticulitis (defined by radiological Hinchee stage), endoscopic evaluation and adenoma/cancer detection rate. Data were analysed using Chi-squared test. **Result:** 6863 patients with diverticular disease were identified. 470 had CT-confirmed diverticulitis. 125 (26.6%) and 345 (73.4%) were diagnosed with complicated and uncomplicated diverticulitis respectively. Patients who presented with perforated diverticular disease were excluded. Median age was 60 years (26–100). Male: female ratio was 2.3:3.22 patients underwent endoscopy (112 flexible sigmoidoscopy (FOS), 210 colonoscopy (COL)). Three cases of malignancy were identified (0.9%). Overall polyp detection rate was 23.9% and COL was superior to FOS (28.6% vs 13.9%). Polyp detection was similar after complicated and uncomplicated diverticulitis (13% vs 18%). Cancer incidence was not influenced by complicated diverticulitis (0.8% vs 0.6%, p=0.79). Adenoma subtypes included tubulovillous (19%), tubular (38%), adenoma (4%). One case had high grade dysplasia within a polyp. **Conclusion:** The incidence of colorectal malignancy after admission for diverticulitis is <1% (similar to life-time risk). However, there is significant incidence of premalignant polyps. Although lower than the detection rate seen in the NHS bowel screening programme, it is still higher than the recent national (non-screening) aspirational adenoma detection rate of 20%. According to endoscopic evaluation has utility and should not be performed via COL and not by FOS. Our data do not support an association between complicated diverticulitis and neoplasia but we recognise the potential for Type II error.
MP-56
New-onset pancreatogenic diabetes (type 3c) after pancreateoduodenectomy: A systematic review
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Background: Objective: To determine the incidence of new onset pancreatogenic diabetes (NOPD; type 3C) after pancreateoduodenectomy (PD). Summary Background Data: After pancreateoduodenectomy (PD), patients may develop new onset pancreatogenic 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.

MP-57
Prospective comparison of dynamic MR defecography with rectal evacuation and conventional defecography for prolapse of the posterior compartment of the pelvic floor
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Background: To compare the diagnostic capabilities of dynamic MR defecography (D-MRI) with conventional defecography (CD, reference standard) for patients with symptoms of prolapse of the posterior compartment of the pelvic floor. Material and Methods: Forty-five consecutive patients with symptoms of prolapse of the posterior compartment of the pelvic floor underwent both CD and D-MRI. Outcome measures were presence/absence of rectocele, enterocele, intussusception, rectal prolapse and the length of the anorectal junction. Examinations without rectal evacuation of contrast were excluded. Cohen’s Kappa, sensitivity, specificity, positive (PPV) and negative predictive value (NPV), as well as the positive and negative likelihood ratio of D-MRI as compared to CD were assessed. To determine interobserver agreement of both procedures Cohen’s kappa and Pearson’s correlation were calculated.
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 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.

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**MP-58**

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

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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: 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.

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**MP-59**

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

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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”, “spincterotomy”, “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, wheras, 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.

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**MP-60**

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

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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 2016 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.

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**MP-61**  
**Is single incisional laparoscopic appendectomy feasible for surgical residents? – Our experiences**  
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**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 resident 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 course 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 = 0.02). There were no significant differences in intraoperative blood loss and length of hospital stay. There was neither major postoperative complication nor readmission in both groups. **Conclusion:** SILS-appendectomy may be safely and effectively conducted by residents surgeons who possess the capability to operate conventional laparoscopic appendectomy.

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**MP-62**  
**Brain Abscess after Heart Transplantation**  
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**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 B 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.
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 inflammatory response as well as alterations of glycocalyx markers expression and graft outcome was performed - our findings is unknown - because no correlation between process is acceptable. Although the clinical significance of pancreas damage generated during the NHBD donation and 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. Results: 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-65
Laparoscopic vs open inguinal hernia repair: Is Laparoscopic actually quicker?
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Background: Laparoscopic unilateral inguinal hernia repair is perceived to have longer operating times. However, laparoscopic 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 Transabdominal Preperitoneal (TAPP) and open repair of unilateral and bilateral inguinal hernia repair. 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**  
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**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**  
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**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-barreled jeuno-ileostomy 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-barreled jeuno-ileostomy 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?**  
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**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 parastomal 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.

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**MP-69**

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

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**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.

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**MP-70**

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

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**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, hypercalciuria and associated thyroid surgery. Using Fisher’s exact test or Chi Square test we studied them in 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 hypercalciuria 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
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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 lower limb locoregional recurrence is currently managed with laser therapy. **Result:** Melanoma recurrence in the lower limb is usually via dermal lymphatic infiltration. Soft tissue reconstructions however lose their lymphatic supply with a delayed recovery. This may also explain the delay in tumour recurrence within the flap. 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
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**Background:** This study examines the publication rate (PR) of meeting abstracts presented at the European Society for Surgical Research (ESSR) and determines/comparisons 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.
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
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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
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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
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Background: Background: The safety and easy reproducibility of our technique using Johan as endoloop knot pusher for laparoscopic appendicectomy 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 appendicectomy 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 perioperative 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 appendicectomy to be significantly cheaper than the standard marketed endoloops. Conclusion: A carefully tailored approach for using BERT bag and Johan forcesp as endoloop knot pusher is a feasible, safe and a cost effective technique with promising results.

MP-78
Teaching laparoscopy: The trainees’ perspectives
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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 is 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
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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 polypos, 3 patients (9%) was observed gland polypos 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 were fallowed. Conclusion: Publication reports that HP infection and ARG are associated with the development of polyps. BGP have malignancy risk so monitorization 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

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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 hydro pneumothorax 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 hydro pneumothorax 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

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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). Thoracic 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?

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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) procedures since 2010. Patients with at least 2 years follow-up were included. At each visit patient’s weight, BMI, excess weight loss (EWL) and ongoing co-morbidities were recorded. Result: A total of 353 patients were included in the analysis, 65(18.4%) underwent LAGB; 70 (19.8%) LSG and 218 (61.8%) 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 S O 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 MO 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.

**MP-83**

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

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**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 reconstructions 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 [EBV = 70/V x (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-84**

**Pretibial lacerations and haematomas: Management in a tertiary centre**

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**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
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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 ankles that did not fuse all continued to have pain similar to ankles that did not fuse all. Conclusion: The presence or absence of early postoperative pain could be used as an early prognostic indicator of nonunion in arthroscopic ankle arthrodesis.

MP-86
How to improve the clinical coding accuracy of trauma care episodes
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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. Conclusions: Accurate coding is crucial for audit, research and 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
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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 preoperative 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). Con-
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-88
Review of Combat-Related Face and Neck Injuries of a Level 1 Trauma Hospital
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Background: Inappropriate and inadequate operative management of the facial soft and skeletal tissues are related to further outcomes. The aim of this study is to review the maxillofacial and cervical region injuries in combat-related injured patients and to review the role of plastic and maxillofacial surgeons of level 1 trauma hospital in treatment. Material and Methods: A review of 32 patients who sustained gunshot, improvised explosive device (IED) and ballistic missile (BM) injuries to the face and neck were conducted over a 6-month period. Demographic details, wounding gear of injury, and mode of presentation and management were recorded. Also mechanism of injury, abbreviated injury scale (AIS-90) and organ injury scale (OIS) scores were recorded in a trauma registry. Result: A total of 32 patients, who were assigned to our level 1 trauma hospital with face and neck injuries between August 2015 and January 2016, were enrolled in the present study and evaluated. Of the 32 patients injured in hostile action, eight were injured by IEDs, ten were injured by gunshot and fourteen were injured by BMs. A total of 11 (35 %) patients were treated surgically for airway management, haemorrhage and excision of penetrating shrapnel pieces. Two casualties (6 %) were died of wounds and multi-organ failure. Median AIS-90 and OIS scores of patients were 1. Conclusion: Combat-related injuries to the face and neck is a critical condition but survival can be provided as long as the patient’s airway is kept patent and hemorrhage is controlled on the time.

MP-89
Sharing lessons learned as a response to terrorist bomb attacks in Turkey
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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
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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.

**Material and Methods:**

**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 inter scapular 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 blood sample. At day 4, 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-93
Risk of Avascular Necrosis with Biceps Tenodesis during Proximal Humerus Open Reduction and Internal Fixation
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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.

MP-94
Use of Macintosh, Glidescope and Airtraq Laryngoscope Respectively Due to Difficult Intubation of Patient Operated for Right Lung Air Cyst
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Background: In cases of difficult intubation alternative intubation devices such as videolaryngoscope, glidescope laryngoscope, airtraq etc. Lung cysts are usually congenital. 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 anesthesia the patient was intubated with a single-lumen tube because bronchoscopy would be performed first. The laryngoscope 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 surgery 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
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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

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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 intracorporal laparoscopic primary suture.Dual mesh was placed on the defect and fixed by laparoscopic tacker and introcorporeal laparoscopic suture. Conclusion: Laparoscopic MH herniorrhapsy was first described in 1992 providing better exposure than laparotomy. Beside, with better cosmetic results, better postoperative quality of life and shorter hospitalization, laparoscopic Morgagni herniorrhapsy seems a feasible technique for asymptomatic MH patients.

VP-3
Video appraisal of three types of esophagojejunostomy techniques in laparoscopic total gastrectomy

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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 tranorally and circular stapler, 2) Side-to-side anastomosis performed using linear stapler, and 3) End-to-side anastomosis fashioned by placing pursestring stitches 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 tranorally 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

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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 SCRCML.

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**VP-5**

**Modified laparoscopic appendicectomy technique: technical details and case series outcome**

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**Background:** Laparoscopic appendicectomy is the most commonly performed procedure in emergency general surgery. The standard technique involves using diathermy to divide the mesoappendix, which carries risk of bowel injury. We describe a modified laparoscopic appendicectomy technique that does not involve the use of diathermy and we evaluate short-term outcomes. **Material and Methods:** We performed laparoscopic appendicectomy locating a 10-millimeter port in the suprapubic area, and two 5-millimeter ports in the left iliac fossa and the umbilicus. The appendicectomy was performed without the use of diathermy. The appendix was divided and endoloop was applied to the stump. A second endoloop was used to ligate the mesoappendix to allow excision of the appendix. A total number of 20 patients who underwent this technique between the periods from January and July 2013 were prospectively followed up for 2 years. **Result:** The mean age of patients was 33 years (range 18-56, 13 females [65%] and 7 males [35%]). The mean duration of surgery in minutes was 72 minutes (range 32-120). Final histological diagnosis confirmed 15 patients with acute uncomplicated appendicitis (75%) and 5 patients with complicated appendicitis (25%). The mean length of postoperative hospital stay was 2 days (range 1-8). One patient was readmitted 4 days after discharge, ultrasound of the pelvis confirmed minimal pelvic collection, which was treated with antibiotics. There were no reported wound infection or port site hernias on the immediate postoperative period or on 2 years follow up questionnaire. **Conclusion:** Modified laparoscopic appendicectomy technique as we described is safe with acceptable postoperative complication rate.

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**VP-6**

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

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*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.

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**VP-7**

**Robotic excision of substernal goiter**

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

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*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 levartrone treatment. Thorax CT revealed a 5 cm diameter lesion located superior mediastinum and it was confirmed as thyroid tissue on tiroid sialography scan. After discussing the surgical approach with otolaringologist, 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 3rd 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.

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**VP-8**

*Surgical technique of robotic diaphragmatic plication*

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**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.

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**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

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**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 S8. 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?
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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
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Background: Upper gastrointestinal and hepatobiliary (UpG-I-HPB) systems have wide range of vascular anatomic variations, of which some are hard to imagine three dimensionally. This study aimed at demonstrating features of a novel software that contains 3D interactive models of main vascular anatomical variations of UpG-I-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 UpG-I-HPB systems was formed. Next, variations of celiac trunk, portal vein and hepatic veins were created in conformity with three reference articles on vascular anatomical 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 UpG-I-HPB systems.

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

VP-13
Super-high larynx-preserving surgery for cervical esophageal carcinoma
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Background: In our institution, super-high larynx-preserving 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 trachea is moved forward with the larynx and hypopharynx, and the “larynx rotation method,” where the larynx and hypopharynx 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 patients, tumor invasion beyond the orifice was observed. Regarding postoperative morbidity, although all patients developed recurrent nerve paralysis, the paralysis was temporary and improved within a year. Mild pneumonia occurred in one patient. Anastomotic leakage and reconstructed organ necrosis were not experienced. The median postoperative hospital stay was 25 days. Although two patients showed postoperative recurrence and the five-year progression-free survival rate was 72.9%, all patients survived. Conclusion: Super-high larynx-preserving surgery is considered 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
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Background: Patients who have repeated episodes of infection with lobar collapses and evidence of bronchostenosis, tumor or obstruction from enlarged lymph nodes can be defined as middle lobe syndrome. The treatment of this pathology is surgical resection. In this study, we aimed to present a robotic left middle lobectomy video that the anatomy was completely mirror 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 productive cough and episodes of pneumonia. The chest computerized tomography revealed left-sided middle lobe syndrome, and his abdominal ultrasound confirmed situs inversus totalis. He had no other component of Kartagener syndrome such as chronic sinusitis. The patient was placed in right lateral decubitus 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 dissected easily with robot and during the dissecting we sometimes used conventional VATS instruments to make easier the dissection. The postoperative course of the patient was uneventful and he was discharged on the 4th postoperative day. Conclusion: We believe that robotic approach for a patient with middle lobe syndrome is feasible and safe.

VP-15
Laparoscopic-thoracoscopic versus robotic assisted Ivor-Lewis Esophagectomy for esophagogastric junction tumors: Video analysis
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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 appraisal aims to compare technical features of those two approaches. Material and Methods: Our minimally invasive 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: 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 approach. 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 conventional thoracoscopy during the intrathoracic phase, except for the anastomotic reconstruction. While there is no difference between the two methods if Orvil® is to be used for esophagogastronomy, robot considerably facilitates the
procedure if intracorporeal manual pursestring 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**

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**Background:** ALPPS (Associating Liver Partition and Portal vein Ligation 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 and create a novel tool for research in 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 multiplicable 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**

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**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 fibrosclerosis 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**

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**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. The abdominal CT scan shows a bilateral femoral hernia. The patient was treated with extra peritoneal laparoscopic surgery with the implantation of a preperitoneal mesh covering both femoral and inguinal holes. 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**

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**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 anti diarrheal 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 Torsional Deformity with Distal Tibial Derotation Osteotomy and Internal Fixation without Fibular Osteotomy**

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**Background:** Tibial torsional 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 torsional deformity that the purpose of this study is to demonstrate tibial torsional 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. Platescrews were 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 torsional deformity that can be treated by distal tibial derotation osteotomy without fibular osteotomy.
PP-5
Long-Bone Fractures in the Patients with Firearm Injury
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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. 154 fractures were determined in 81 patients. 72 of injuries were included in this study. Types of fractures, initial and subsequent treatments were investigated retrospectively.

Conclusion: 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-6
Spiral-medial butterfly fractures (AO-12-B1) in distal diaphysis of humerus with rotational forces: preliminary results of open reduction and platescrew fixation
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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
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Background: 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.

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**PP-8**

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

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**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 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.

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**PP-9**

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

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**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 clinico-pathological 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 clinico-pathological factors. It was suggested that FDG-PET was useful for the prediction of lymph node metastasis in T1 cases.

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**PP-10**

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

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**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

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**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 autopsies, 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

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**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 monitorized 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 bowls 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

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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 again his pain was not cancelled with this operation. Range of 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

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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 Orthopaedic 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 imagining, 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 dermatofasciectomy 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

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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 sealer during surgery of lumbar spinal stenosis (LSS). Material and Methods: Twenty one LSS patients undergoing spinal surgery were included in this study. In addition to standand 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 Artesia, Mega Ileum: Resection of Multiple Anastomosis without Stoma Treatment with Trans-Anatomical Silicone Stents
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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 segment was opened in an area of serosal stitch and leakage through the proximal Anastomosis. At the 10th day of post-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 segment was opened in an area of serosal stitch and leakage through the proximal Anastomosis. At the 10th day of post-surgery the leakage Anastomosis was passed with 22 French silicon catheter through the proximal Anastomosis. At the 10th day of post-operation was observed patient tolerance with intermittent closure 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?
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Background: Pancreatic surgery involves high rates of morbidity and mortality, even in specialized centres. Scoring systems can help to identify high-risk patients and select ideal candidates for surgery, improving surgical audits too. The aim of the present study is to evaluate the predictive capacity of complications of the actual scoring systems applied in pancreatic surgery. 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 pancreatoduodenectomy, 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
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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 Viry 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...
255.71mmHg and 185.71 mmHg. Although the burst pressure higher in Group 2. It was not statistically significant. Histopathological examination: In Group 2, vascular proliferation, fibroblastic activity and examined for the amount of collagen was found to be better than in group 1 (p > 0.05). Compared with hydroxy proline values between the groups was statistically better in group 2 (p > 0.05). Conclusion: As a result, we could use collagen and fibroblast growth factor to improve wound healing in anastomosis. We believe that anastomotic leakage reduces so the nightmare of surgeons will be also reduced.

PP-19
Laparoscopic pylorus preserving enbloc total pancreaticoduodenectomy for large main duct IPMN
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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, illustration 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
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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 bilio-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 enterorhaphy 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.

PP-21
A porcine model of experimental abdominal compartment syndrome for evaluation of negative pressure wound therapy
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PP-22
Laparoscopic treatment of retrodudenopancreatic endometriotic cyst in a post-partum woman
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University of Bari, Bari, Italy

Background: Endometriosis occurs in 5-10% of fertile women, usually located in pelvic region, as ovaries, ligaments of uterus, pelvic peritoneum, and recto-vaginal septum. Mesenteric endometriotic cyst is an exceptional evenance, also difficult to diagnose preoperatively. We report a rare case of a large mesenteric endometriotic cyst totally treated by laparoscopy.

Material and Methods: Case Presentation: A 21 years old Caucasian woman was admitted in emergency at our Academic Hospital in the 30th day post-partum, with abdominal pain, and epigastric palpable mass. A CT scan revealed a mass of 7.5x5.5 cm showing fluid content and located below the pancreas. A preoperative diagnosis of mesenteric cyst was performed, also confirmed by MR. After the identification of the inferior vena cava, a meticulous dissection between the mass and the duodenum was achieved by laparoscopic technique. During the blunt dissection, the cyst was aspirated avoiding any spillage, because the presence of tenacious adhesions could potentially compromise a safe cleavage plane with the lower third of the duodenum. Anyway the operation was laparoscopically completed.

Result: Case Presentation: The postoperative period was uneventful and patient was discharged seven days after the operation. Histology revealed an endometriotic cyst of the mesentery.

Conclusion: This seem to be the first case reported in literature of laparoscopic treatment of retrodudenopancreatic endometriotic cyst in a post-partum woman. The laparoscopic management should be the gold standard in its treatment only in dedicated centers.

PP-23
Does Tartar Removal Affect the Physiological Parameters of Beagle Dogs in Long-Term Follow-Up Research?
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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.
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 multiple polyps. One of polyps was sessile. Most large polyps were 25 mm in diameter; and the smallest polyp was 3 mm. In treatment, polypectomy, hemorrhoidectomy, sphincterotomy, fistulotomy were made according to the pathologies. 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.

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.

Background: Pilonidal sinus (PS) is seen most often in areas with sacrococcygeal area. Although it can be also 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.

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PP-27
Neck dissection for node-positive head and neck cutaneous malignant melanoma
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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: Node-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
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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: Mutaf’s Triangular Closure
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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 fascia cutaneous 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 was 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?**

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**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**

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**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?**

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**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 (42%) patients under 60 years had a normal FC level; 7 also had subsequent GI investigations. Twenty-eight (64%) patients aged 60 years or older 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
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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
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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 endometriotic 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
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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 radiologic 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
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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 and the time loss for them while activating the team. 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)
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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 7/2013-10/2015. Peripheral blood samples were collected peri- and postoperative. Detection of CTCs were based on the combination of the cytomorphological characterisation 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, MRPI-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) by 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
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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**

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**Background:** To review the practice of post-operative antiplatelet therapy in a tertiary cardiothoracic centre. The post-operative use of antiplatelet 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**

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**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 UNITO 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 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 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 dextrokardia 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 hemidiaphragm to be raised are all evidences of the internal organs positioned in the mirror image. 

Result: In the operation theatre standard anesthetic monitoring 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.

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**PP-43**

**Uvular Necrosis Following Double Lumen Endotracheal Tube**

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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
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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 retroperitoneal hematomas were managed expectantly. Inferior caval vein, abdominal aorta, common iliac artery and vein injuries were treated primarily. Two patients with splenic artery injuries and 1 patient with renal injury underwent spleenectomy and nephrectomy, respectively. Injury to the middle colic artery was managed by ligation of theatery. Conclusion: Major vascular injuries in casualties with anterior-posterior projectile trajectories seems to be more frequent than the tranverse-oblique injuries.

PP-45
Early postoperative stoma complications after stoma surgery
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Background: Stoma complications occasionally occur after stoma formation and it affect straightly 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
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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
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 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.

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**PP-47**  
**Anesthesia Management for DPS Placing Procedure in a Patient with ALS**  
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**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 hemidiaphragm, 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.

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**PP-48**  
**Continuous Spinal Anaesthesia in a Patient with High Cardiac Risk**  
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**Background:** The continuous spinal anaesthesia (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

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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

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Background: Persistent left vena cava superior syndrome (PLVCSS) 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, PLVCSS 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

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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 anesthesia. 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 iv. and anaesthesia was induced with propofol 2mg/kg, fentanyl 1mcg/kg, vecuronium 1mg/kg; maintained sevoflurane iv. 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.

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**PP-52**

**Transthoracic Echocardiography Guided Central Venous Catheter Placement in Plasmapheresis Performed Pregnant Patient**

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**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:** Hemodialysis catheter placement was planned to a 38 years old pregnant woman, in whom anti-D immunoglobulin was not applied in the first pregnancy, and had CV hemodialysis 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 it has 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.

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**PP-53**

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

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**Background:** 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:** Conclusion BAPS recommended quality specifications/CQUIN recommend that > 90% of operations should occur within < 12 hours decision to operate, and a negative appendicectomy rate of < 15%. There was no absolute recommendation for length of stay, 28-day readmission and transfers to an SPU. Our performance meets current national standards.
**PP-54**

**Significance of Enterobius Vermicularis in Acute Appendicitis: A Six-Year Single Centre Study**

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**Background:** Enterobius Vermicularis is an infrequent histological finding in appendiceal 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.

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**PP-55**

**Tumor Infiltrative Pattern Predicts Sites of Recurrence after Curative Gastrectomy for Stage II/III**

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**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 INF type a/b, whereas hepatic metastasis was present in 39% of stage IV patients in the INF type a/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 INF type a/b group compared with that of the INF type c group, whereas prevalence of hepatic recurrence was significantly higher in the INF type a/b group compared with that of the INF type c group. Multivariate analysis identified INF type c 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.

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**PP-56**

**Anesthetic Management of A Child With Noonan’s Syndrome: A Case Report**

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**Background:** Noonan’s syndrome is a genetically disorder, characterized by low posterior hairline, down-slooting 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.

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criteria. His emergence and postoperative course were uneventful. 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

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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 fully assessing other organ function.

PP-58
Use of the C-MAC® Video Laryngoscope for Intubation in Madelung’s Disease

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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 Mallampati 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 submandibular 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

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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 the post splenectomy consequences. We present here two challenging cases of splenic preservation for both cases showed simple splenic cysts. Technique was similar to case one. 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
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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 antrectasia 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
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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 aboral 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 mesentery and caecum was found. Right nephrectomy, right-sided hemi-ceacum was found. Right nephrectomy, right-sided hemi-ceacum was confirmed. Thereafter the patient received 8 cycles of adjuvant chemotherapy. He is now 5 years without any signs of recurrence.

Conclusion: Malignant intestinal lymphomas belong to rare diseases. Patients with weakened immune system are at risk. Diagnostics can be difficult due to nonspecific symptoms and sporadic occurrence. Unfortunately bowel perforation or bleeding is the very first life threatening symptom of intestinal lymphoma in the most cases.

PP-63
Continuous Local Wound Anaesthesia following Kidney Transplantation
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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-analgésia.

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
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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 sternalum was closed. The irrigation was run at 100mls/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

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**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 12.7 ± 9.5. The recipients' 5-year survival rate was significantly lower in the BCP than BCN group (58.23% vs 90.23%, respectively; p < 0.005). **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

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**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 transplantations 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 neurosarcoidosis 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

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**Background:** A frequent complication in colorectal cancer is regeneration of the tumor after therapy and its chemoresistance. 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 comprehensively 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. visualization 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 programme. **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
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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 gastrectomy 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 thrombosis, 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 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
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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 (7.6%) had edematous gastric mucosa and 2 (5,13%) had limitis plastica. 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
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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

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**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 clipped 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 (LoRRca MaxSis Os-moscan 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

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**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

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**Background:** Abdominal compartment syndrome represents a well known concept in patients of intensive care units, consisting in intra-abdominal hyperthension, 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 underwent 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 using 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 onlay mesh abdominal wallplasty 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 sheaths, 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

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**Background:** The appendicular duplication is a rare anatomical variation around 0.004% and the diagnosis is often incidental 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

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**Background:** Anatomy is often underestimated by medical students but it is an essential prerequisite to every surgeon. In France, medical students learn anatomy mainly in the first years of their curriculum before they even choose their speciality. 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

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**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
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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)
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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
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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
PP-81

Intermittent abdominal mass secondary to renal pelvic dilatation from pelvi-ureteric junction obstruction

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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

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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

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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 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 ratio 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

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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 to 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-
Invasive papillary breast carcinoma (IPBC) is a rare case of breast cancer that may present with more rare conditions as it comes out with a male patient at our case. 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 whether 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. Study-4, 5 ET patients, 2 operated for BR without mortality. Study-5, 40 patients, only 2 ET.25 intervented 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-7, 66 patients, 50 (76%) ET, 44 (66%) successful ET, 6 (46%) success, 5 (39%) relaparotomy, 4 (31%) 30-day mortality. Study suggests multidisciplinary approach. Study-8, 37 ET approach, 27(73%) surgery as second step intervention (SSI) with 15 (40.5%) BR, 10 (27%) mortality. Study-9, 6 ET, 2 (33%) recover, 3 (50%) BR as SSI, 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 SSI may be needed. ET decreases the mortality/morbidity of SSI, increases survival. Early intervention at AMI must be kept in mind.
PP-87
Neurofibromatosis as a Rare Cause of Unilateral Pseudogynecomastia: Case Report
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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 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 thoracoabdominopelvic 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
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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 ligament 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 Appendiceal Incidental Tumors
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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 metastasis 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 doctors 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
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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-metastatic. PCT characteristically metastasis 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(critical) CLN was dissected and resected. Lateral neck dissection was proceeded from right. Sternoleidomastoideus (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 phynic 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?
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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 electrocoagulation 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

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Background: The combination of biomaterials for hernia repair with antiseptics constitutes a prophylactic strategy to reduce the risk of infection following surgery. Presoaking meshes 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 presoaking 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 10^6 CFU/mL Staphylococcus aureus ATCC25923. The defects were repaired using the material infection in a short-time hernia repair rabbit model.

PP-93
Comparison of Three Imaging Methods for the Visualization of Splenic-Autotransplants in Large Animal Model

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Background: Spleen autotransplantation provides prevention from severe consequences of splenectomy, such as overwhelming Postsplenectomy Infection syndrome and/or thromboembolic events. Our aim was to compare the reliability of three different imaging techniques identifying splenic autotransplants.

Material and Methods: In 15 beagle dogs 10 spleen slices were replaced into the greater omentum by Furka’s method following splenectomy, and imaged at different postoperative times. All methods were based on the phagocytic function of the spleen. Non-specific colloid scintigraphy (n=3) with Tc99m-phytate, as well as spleen-specific planar scintigraphy and SPECT without (n=4) or with additional SPECT-CT hybrid images (n=8) with denatured, Tc99m labeled autologous RBCs were acquired with a two-headed gamma camera. Result: With colloid scintigraphy the highest activity was found in the liver. At the expected site of the splenic autotransplants some focal activity accumulation was detected. By spleen-specific scintigraphy most of the spleen autotransplants could be visualized, with varying uptake values. The planar parametric images indicated functioning splenic tissue in all animals. Using hybrid SPECT-CT, identification of the splenic autotransplants was easier and more precise, although not all of them were seen. Histological, RBC micro-rheological examinations indicated hyposplenoid condition in these cases. Conclusion: While non-specific colloid scintigraphy was somewhat unreliable and unsatisfactory, the spleen-specific techniques had proved more successful in visualization of functioning splenic tissue. The hybrid technique had higher reliability than SPECT in itself, but even SPECT-CT failed to show every splenic autotransplant that the subsequent follow-up had revealed. Grants: OTKA-K-105618, OTKA-T-049331, ETT-387/2006.
PP-94
Laparoscopic versus open distal pancreatectomy: Surgical stress response comparison in the porcine model
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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. Postoperative stress 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
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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
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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 vasodilation. 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

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**Background:** To the clinical impact of preoperative esophagastroduodenoscopy (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

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**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

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**Background:** Modified Appleby procedure (MAP) is a left pancreatecto-splenectomy combined with resection of the
PP-100
A migrated biliary stent causing entero-enteric fistula, a rare sequel of laparoscopic cholecystectomy

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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

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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 center over a 7-year period between September 2009 and September 2015. Factors studied for conversion included; age, sex, cholelithiasis, with or without cholecystitis, gallbladder wall thickness on ultrasound scan, common bile duct stones, pancreatitis, ERCP, previous abdominal surgery, histology 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 (28.6%). 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), cholelithiasis (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 Calot’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

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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-old 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,
asthma, diverticulosis and previously investigated for infertility with no cause identified. Colonoscopy showed rectal polyps, removed by endoscopic mucosal resection. Histology confirmed tubulo-villous adenomas with low grade dysplasia. Examination revealed septic shock and generalised peritonitis. CT scan showed a perforated loop of sigmoid colon with abscess in the pelvis causing partial colonic obstruction. Malignancy could not be ruled out. At laparotomy, an abscess cavity was found in the pelvis, with a perforated loop of sigmoid colon. Hartman’s procedure was performed. Histology showed endometriosis causing perforation and abscess formation. Conclusion: Although the reported situation is rare, and none of the searched literature showed perforation complication in large bowel in last 10 years but did mentioned bowel obstruction. It is important to be aware of endometriosis after the menopause. Post-menopausal endometriosis confers a risk of recurrence and malignant transformation and can involve bowel with complications including perforation and abscess formation with radiological signs of malignancy.

**PP-103**

**Taking Nice Guidelines Further: Straight – To – Test for Dysphagia**

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**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 have “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 for 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**

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**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. Practice standards were based on NICE c188 guidelines. 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
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Background: 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: Conclusion: We describe a case series of four patients and delineate valuable learning points.

PP-107
An unusual occurrence of adult sigmoid intussusception due to extraluminal cause: A Case Report and literature review
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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 stricture 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 intussusceptum 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 Garengote’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 appendicectomy 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 Garengote’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 Garengote’s hernia. However, to our knowledge, only one such case has been described in the literature. De Garengote’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-106
Type 4 appendiceal diverticulum within a De Garengote’s hernia: when rare meets rarer
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Background: De Garengote’s hernia is defined as an incarcerated femoral hernia containing the veriform appendix. We describe the case of a patient with a type 4 appendiceal diverticulum within a De Garengote’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 appendicectomy 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 Garengote’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 Garengote’s hernia. However, to our knowledge, only one such case has been described in the literature. De Garengote’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**

*Transthoracic robotic excision of esophageal leiomyoma*

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**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 transthoracic 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 transthoracic robotic excision. The excision was completed without any complication. His postoperative course was uneventful and he was discharged on 3th postoperative day. The esophageal peristaltism was normal on barium swallowing 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*

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**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*

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**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.
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 pseudodividerticulum 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
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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 when ever a drug abuser presents with abdominal pain.

PP-112
Report of a Rare Case: Clear Cell Carcinoma Metastasis on an Incision Scar
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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 roundededges 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, heterogenous 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

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**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 abscess?

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**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 gentlemen 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

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**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 psosas 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 3) Overall survival rates 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?
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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)
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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
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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 malign 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 groin. 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.

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**PP-119**

Impact of Coinciding Cervical Neurodegenerative Disease on Decision Making About a Patient with Parkinson’s Disease Prepared for DBS Surgery

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**Background:** Parkinson’s disease (PD) is a progressive neurological disease that exhibits a gamut of motor and non-motor 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 discectomy 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.

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**PP-120**

Upper Gastrointestinal Haemorrhage Secondary to Haemosuccus Pancreaticus

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**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 melaena, 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 Guideline Network) and ACG (American College of Gastroenterology) guidelines. **Result:** Two oesophagostroduodenoscopies 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-encephalography and subsequent capsule endoscopy did not reveal small bowel pathology. A technetium scan excluded a potential Meckel’s diverticulum. A CT-vesenteric angiogram then revealed a splenic artery pseudoaneurysm. This was embolised via interventional 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
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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, foregoinng 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 one of which skin ureterostomy occurred. In 3 patients skin ureterostomy was performed for the sake of safe and efficient cholecystectomy. 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 revision with reanastomosis ureteroileal connection.

PP-122
Preoperative Factors Predicting Open Conversion of Laparoscopic Cholecystectomy
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Background: Laparoscopic cholecystectomy (LC) is widely accepted as a standard operation for benign gallbladder disease. LC is, however, not always completed because of surgical difficulties. In this study, we tried to identify preoperative factors that predict conversion of LC to open cholecystectomy (OC) for the sake of safe and efficient cholecystectomy. Material and Methods: We conducted retrospective study with 450 patients who underwent cholecystectomy from January 2010, to December 2015. We compare following parameters between LC accomplished group and open conversion group, in terms of background; age, gender, body mass index, prior laparotomy, diabetes mellitus, anticoagulant agent; and laboratory data; preoperative maximum white blood cell (WBC) count (/L), total bilirubin (TB) value (mg/dL), and C-reactive protein (CRP) value (mg/dL); and radiologic findings; gallstone in gallbladder neck (GGN) or not, thickness of gallbladder wall (less than 3mm or not), and gallbladder length (less than 6cm or not axially); and prior percutaneous transhepatic gallbladder aspiration or drainage (PTGBA/D). Result: Overall 347 of 450 (77.1%) patients underwent intended LC, and 30 of 347 (8.6%) patients required conversion to OC. Between two groups, there are no significant differences in terms of background, WBC and TB. Significant differences were found in CRP value more than 10mg/dL (P=0.0092), GGN (P=0.0002), thickened gallbladder wall (P=0.0001), swollen gallbladder (P=0.0082), and prior PTGBA/D (P=0.0007). Multivariate analysis revealed that independent risk factors were CRP value (odds ratio, 5.66; P=0.0009), and GGN (odds ratio, 3.58; P=0.0092). Conclusion: Elevated CRP and GGN are predictors of open conversion of LC. We must take account above factors when planning cholecystectomy.

PP-123
Factors and outcomes of hepatocellular carcinoma with positive surgical margin in our hospital
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Background: The complete resection of primary tumor with clear margin is very important for surgical management of hepatocellular carcinoma (HCC). However it is sometimes difficult to achieve clear resection for all eligible patients.
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 S1:0/5 (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 extrhepatic 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
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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 5 were the other complications. Objective variable was 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
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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 (GPS1/2 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 (St.3/4 vs St.1/2) 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.
PP-126
The Use of Sugammadex in a Patient with Myasthenia Gravis

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Background: Myasthenia Gravis (MG) is an autoimmune disorder characterized by 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 agents. 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 anesthesia 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

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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 perivasculat 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

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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 adenomyomatosis. 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 1.766 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
stage of 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
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**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, gall bladder metastases have to be ruled out before diagnosing a benign gall bladder disease. Surgery should be performed as it increases patients’ survival rate.

**PP-130**

Kirschner wire breakage during removal requiring retrieval
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**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. **Result:** K-wire fixation is common and its rigidity as effective if not better than other modalities. **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. 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
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**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. **Result:** Morphea is characterised by excess collagen deposition, which results in thickening and induration of skin and subcutaneous tissues. There are various subtypes and its aetiology is unknown. It has been reported following trauma, infections, surgery and radiotherapy. The clinical course of morphea is usually self-limiting but it can potentially cause significant morbidity such as severe contractures. Various
treatments have been proposed including topical therapy, phototherapy and systemic immunosuppression. **Conclusion:** Morphea is rare but can occur postoperatively and mimic infectious conditions.

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**PP-132**

**Otoplasty technique: A review of 126 consecutive patients**

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**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%). Revisital 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 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.

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**PP-133**

**Is the intraoperative air leak test effective in the prevention of colorectal anastomotic leakage? A systematic review and meta-analysis**

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**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) 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.

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**PP-134**

**Are there any differences between early excision-grafting and late excision-grafting in full thickness burn?**

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**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
but results more GLP. Grafting procedure for EEG requires ther be experienced for specific subgroups such as electric meticulous timing decision. These two manners should fur-
sods.

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Background: Central venous lines catheterization (CVLC) is indispensable in intensive care units since they have capa-
bility 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 rec-
cruited and of them, 450 catheterized cases were reevalu-
ated retrospectively. Burn severity, demographics, catheter related complications and infectious events were examined. Result: There were 919 CVLC in 450 (80%) catheterized pa-
tients. Total days were 4246, 4264 and 3075 for fem oral, subclavian and jugular veins retrospectively (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%) respec-
tively. Isolated microorganisms were Pseudomonas Aeuru-
ginosa (%44), Acinetobacter Baumannii (%21) as leading ones and MRSA, Klepsiella 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
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dom

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 Gastro-
terology (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: Ret-
rospective analysis identified 110 patients diagnosed with acute pancreatitis between September 2014 to September 2015. 55 were excluded due to incorrect diagnosis or una-
vailable notes. Drug charts were reviewed to identify pres-
ence of an indication for antibiotics. Pathology and radiol-
ygy systems were used to identify presence of positive blood cultures and necrosis on CT scans, respectively. Re-
sult: Median age of patients was 55 years. Of 55 patients with acute pancreatitis, 10/55(18%) had evidence of necro-

PP-137
To look at the completeness and accuracy of Na-
tional Emergency Laparotomy Audit (NELA) data entries in a District General Hospital
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dom

Background: We retrospectively analysed NELA data entries of consecutive 100 patients who had emergency laparo-

entries in a District General Hospital.
operative procedures) for complete rectal prolapse have shown good functional results with a low recurrence rate. A total of 56 cases served in 9 cases (23%). All cases were treated with medical therapy. A total of 11±8 days was observed in 1 case as complete rectal prolapse (2%) and in 2 cases as incomplete rectal prolapse (5%). A total of 1 to 115 months (1 to 115 months) was observed in 1 case as complete rectal prolapse (2%) and in 2 cases as incomplete rectal prolapse (5%). A total of 11±8 days (range 0 to 214 hours) was observed. A total of 11±8 days. 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-138
Outcome of laparoscopic rectopexy (modified Wells procedure) for complete rectal prolapse
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Background: Laparoscopic rectopexy has been applied to complete rectal prolapse. There are several procedures of rectopexy for complete rectal prolapse. We have introduced laparoscopic modified Wells procedure with our idea for complete rectal prolapse. Material and Methods: We studied 39 patients with complete rectal prolapse who underwent laparoscopic rectopexy (modified Wells procedure). Age: 66±18 (Mean±SD), male: female; 11: 28. Operation: The sufficient dissection of the rectum until exposure of the puborectal muscle and anterior rectal space was done. The lateral ligaments were preserved. We have confirmed the sufficiency of rectal dissection by reproducing prolapse by vacuuming the anus, using the vacuum cup. The proleve mesh was stapled to the promontorium. The mesh was stitched to two-third of the posterior wall of the rectum. The retroperitonium was closed to prevent the exposure of the proleve mesh to the intestine. Result: 1) Operation time: 233±39 min, blood loss: 30±34 g. 2) Postoperative complication: bowel obstruction 2 (5%) was observed and treated with conservative therapy. 3) Postoperative hospital stay was 11±8 day. 4) The recurrence in mean observation period 23 months (1 to 115 month) was observed in 1 case as complete rectal prolapse (2%) and in 2 cases as incomplete rectal prolapse (mucosal prolapse) (5%). 5) Constipation was observed in 13 cases (33%) and fecal incontinence was observed in 9 cases (23%). All cases were treated with medical treatment. Conclusion: The laparoscopic rectopexy (modified Wells procedure) for complete rectal prolapse has showed good functional results with a low recurrence rate.

PP-139
Case report: Lynch syndrome and sextuple primary malignancies
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Background: Lynch syndrome (LS) or Hereditary Nonpolyposis Colorectal Cancer (HNPCC) is the most common of hereditary colorectal cancer and accounts for 1% to 3% Lynch and Chapelle estimated that it accounts 5% to 6% 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 rontenal transplantation
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Background: Objective of this study is to find out, whether patients with urinary leakage from ureterocystoneostomosis 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
in our department before renal transplantation. The statistic significance was estimated on the border p ≤ 0.05. **Result:** Within a group of 127 men urinary leakage after renal transplantation was present in 11 (8.6%) cases. In the group of the patients with urinary leakage there was significantly lower volume at the feeling of normal desire to void (NDV) in comparison with the rest of the patients, higher maximal detrusor pressure in the filling phase of the urinary bladder, lower capacity of urinary bladder, lower detrusor compliance, higher detrusor pressure during micturition, higher opening detrusor pressure during micturition (p moo) and higher index of bladder outlet obstruction (BOOI). To predict the risk of urinary leakage after renal transplantation parameter X was definated. 

\[ X = 0.1139 - 0.1165 \log NDV + 0.1415 \log(pmuo). \]

Patients with the value of parameter X higher than 0.2 have 93 x 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.

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**PP-141**

**The presence of lower urinary tract dysfunction in diabetic patients placed on the waiting list for a combined kidney and pancreas transplantation**

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**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 complex urological examination including urodynamics: 1. uroflowmetry: Qmax 2. filling cystometry: Cmax, Compliance, presence of detrusor involuntary contractions 3. voiding cystometry Obstruction: men-Bladder Outlet Obstruction Index women-Blaiwas-Groutz nomogram Hypocontractility: men- Bladder Contractility Index women- hypocontractis present if Qmax ≤ 12 and at the same time PdetQmax ≤ 10. **Result:** The sample consists of 43 patients with a mean age of 42 years (range 26-62), 28 men with a mean age of 44 years and 15 women with an average age of 38 years. The average diuresis according to 7-day voiding diary was 1694ml/24h. Valid results were obtained from 16 patients for uroflowmetry, from all 43 patients for filling cystometry and from 38 patients for voiding cystometry. Results: Qmax-pathological in 27 patients(62%): 18 men-avg.218 ml 9 women-avg.239 ml Compliance:pathologic in 12 patients (30%): 7 men-avg.16 ml/cm H2O 4 women-avg.11 ml/cm H2O Unvoluntary contractions: 3 patients(6%) –3men Obstruction: 5patients(11%): 4men 1women Hypocontractility: 12 patients (27%) - 11men, 1women **Conclusion:** Lower urinary tract dysfunctions in patients placed on the waiting list for a combined kidney and pancreas transplantation are frequent. The most frequent dysfunctions are decreased urinary bladder capacity and compliance, urinary bladder hypocontractility and obstruction of lower urinary tract.

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**PP-142**

**Chronic Postoperative Groin Pain Requiring Remedial Surgery: Spinal or General Anaesthesia?**

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**Background:** Conservative treatments for chronic pain following open inguinal hernia repair are often to no avail. Remedial surgery such as a neurectomy may be considered but success rates are suboptimal. Type of anaesthesia may influence outcome. Aim of the present study was to determine whether remedial surgery for inguinodynia is more successful if performed under spinal anaesthesia compared to general anaesthesia. **Material and Methods:** Patients who underwent open remedial surgery between 2000 and 2014 in a single centre of expertise on chronic abdominal wall and groin pain syndromes (SolviMax) were identified by a database search. Evidence-based confounding patient characteristics and specifics of surgery were extracted from the hospital’s electronic information system. A univariate binary logistic regression analysis identified factors possibly predicting treatment outcome. Significant variables (p≤0.01) were included in a multivariate logistic regression analysis to correct for potential confounders. Success was determined by patient satisfaction as documented in the electronic file. **Result:** A total of in 339 patients (63% males, median age 50, range 18-88,) were eligible for study. Surgery was performed under spinal anaesthesia in 41%. Overall success rate was 66%. After correction for confounders, spinal anaesthesia showed a significant positive association with a successful outcome (OR 2.1, 95%CI 1.3-3.8). This effect was most evident in patients who underwent a neurectomy (OR 2.3, 95%CI 1.3-4.1). **Conclusion:** Remedial surgery for chronic postoperative groin pain syndromes is twice as successful if the procedure is performed under spinal anaesthesia. This effect is most evident if a neurectomy is involved.
Recall Bias in Pain Scores Evaluating Abdominal Wall and Groin Pain Surgery: a Meta-analysis

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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 benefiting 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.