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Guest Editors

Konstantinos Vakalopoulos, Geneva

Charles-Henri Wassmer, Geneva

Benoît Borner, Geneva

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Award sessions: Walter Brendel Award

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Methane-Enriched Preservation Solution Improves Graft Function In Experimental Heart Transplantation

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Background: The key goal of cold storage is to maintain cell viability for a prolonged time during solid organ transplantation. Methane (CH₄) has been recognized as novel therapeutic gas exerting anti-inflammatory effects in ischemia-reperfusion (IR) injuries. We aimed to investigate whether cold storage of donor hearts in CH₄-enriched preservation solution could protect against IR and preserve myocardial function in a rat model of heterotopic heart transplantation (HT). **Material and Methods:** The hearts of donor Lewis rats were explanted and stored for 1 h in cold Custadiol (CS group, n=12) or in CH₄-saturated (0.054 mg/100 ml) Custodiol (CS-CH₄ group, n=12). 60 min after HT left ventricular (LV) pressure-volume relations and coronary blood flow (CBF) were assessed to evaluate early post-transplant graft function. At the end of haemodynamic measurements, samples were taken for qPCR of endoplasmic reticulum (ER) stress and mitochondria-related apoptosis markers (CHOP, GRP78, GSK3 β , VLDLR, Caspase 3 and 9, Bcl2, Bax), biochemical parameters and mitochondrial functional analysis with high-resolution respirometry (Oxygraph2K, Austria). **Result:** LV contractility, active relaxation and CBF values were significantly ($p < 0.05$) improved in CS-CH₄ grafts as compared to the CS group. CS-CH₄ storage significantly reduced the transcription of pro-apoptotic proteins and Bcl2/Bax ratios as compared to CS grafts. Increased mitochondrial oxidative phosphorylation, reduced leak respiration and cytochrome c release were demonstrated in response to CS-CH₄ preservation. **Conclusion:** These data provide evidence for the benefit of CH₄-enriched preservation solution during HT, through a mechanism which involves the inhibition of pro-apoptotic signals.

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Microcirculatory-Mitochondrial Resuscitation By Modulation Of Endothelin Receptors In A Rodent Model Of Sepsis

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Background: The endothelin system plays essential role in cardiovascular regulation during hypoxia. Sepsis is associated with progressive tissue hypoxia, thus our aim was to investigate the influence of selective ET-A receptor antagonist (ETAr-) or ET-B receptor agonist (ETBr+) or combined therapies (ETAr- and ETBr+) on the microcirculatory response and the corresponding mitochondrial respiration in experimental sepsis. **Material and Methods:** Male SPRD rats were subjected to faecal peritonitis (n=8/groups; 0.6 g/kg faeces ip) and were treated with sterile saline, or received the ETAr- ETR-p1/fl peptide (100 nmol/kg iv), the ETBr+ IRL-1620 (0.55 nmol/kg iv) or the same doses in combination, 22 hrs after sepsis induction. Invasive hemodynamic monitoring and blood gas analyses were performed during a 90-min observation. Intestinal microcirculatory perfusion rate (PR) and red blood cell velocity (RBCV) was investigated by intravital videomicroscopy, the Complex II-linked mitochondrial oxidative phosphorylation (OxPhos) was evaluated in liver homogenates by high resolution respirometry (Oroboros O2k). **Result:** The septic reaction was characterized by significant hypotension (91 $\pm$ 5 vs 120 $\pm$ 4 mmHg), decreased bowel PR (49 $\pm$ 7 vs 97 $\pm$ 0.8%) and reduced mitochondrial respiration (OxPhos 98 $\pm$ 36 vs 300 $\pm$ 14 pmol/sec/ml; $p < 0.05$). The ETAr- treatment significantly increased the RBCV and OxPhos capacity, while the ETBr+ treatment prevented the sepsis-induced hypotension and PR reduction. The combined therapy amplified the beneficial mitochondrial and microcirculation effects of selective ETAr- and ETBr+ approaches. **Conclusion:** The ETAr- and ETBr+ combination may offer a novel tool for a simultaneous microcirculatory and mitochondrial resuscitation strategy in sepsis. Grant support: UNKP-18-2 New National Excellence Program of the Ministry of Human Capacities, NKFIH K116689.

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Generation And Characterization Of Novel Preclinical Orthotopic Cancer Xenografts Utilizing Ultrasound

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Background: Standard cancer xenografts are derived from subcutaneous flank engraftment or from implantation via open surgery. Compared to subcutaneous tumors, orthotopic sites are more likely to recapitulate tumor microenvironment and form vascularized xenografts that spontaneously metastasize. The development of biologically relevant orthotopic xenografts has been limited by complexity and morbidity of open surgery. We hypothesized that establishment of reliable preclinical cancer models utilizing percutaneous injection of tumor cells and ultrasound guidance is a safe and efficient method to establish orthotopic xenografts for oncology studies. **Material and Methods:** Neuroblastoma (IMR32, SK-N-BE2), Ewing's sarcoma (TC32, A673), and adrenocortical carcinoma (NCI-H295R) cell lines (n= 10 each) were tagged with a luciferase lentiviral vector. Real-time mouse abdominal ultrasound was performed utilizing a high-resolution imaging system. Immunodeficient mice were anesthetized and luciferase-tagged tumor cells suspended in matrigel were percutaneously hand-injected into the adrenal gland (neuroblastoma or adrenocortical carcinoma) or kidney subcapsule (Ewing's sarcoma) using ultrasound guidance. Tumor growth was measured weekly via bioluminescence and ultrasound. Primary tumors and metastases were characterized by H&E and tumor immunostains. **Result:** All cancer cell lines utilized successfully engrafted, forming locally invasive tumors at the organs specified. Evidence of tumor take occurred six days post-injection with full engraftment by 35 days. Spontaneous distant metastases to lymph nodes, lung, and cortical bone were identified in all cancer models and characterized by tumor histology. **Conclusion:** Cancer cell lines can be orthotopically engrafted utilizing ultrasound-guidance to identify abdominal organs without open surgery. This model is an important improvement over standard oncology models for preclinical testing of new therapies.

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Rapid Liver Hypertrophy Would Be Regulated Through Jak/Stat3 Pathway In A Rat Alpps (Associating Liver Partition And Portal Vein Ligation For Staged Hepatectomy) Model.

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Background: Increase in inflammatory cytokine has been considered to be responsible for rapid liver hypertrophy in ALPPS procedure. However, we reported last year that when the parenchymal partition was placed within the ligated lobe, consequent increases in inflammatory cytokines were not necessarily parallel to the speed of liver volume enlargement, and that Reg gene upregulation was a more likely candidate involved in the mechanism. Since several studies reported cell proliferation via Reg-JAK/STAT3 axis or liver regeneration via IL-6-JAK/STAT3 axis, we examined whether JAK/STAT3 pathway was involved in the rapid liver hypertrophy in ALPPS procedure. **Material and Methods:** We prepared three experimental groups. (I) PVL group: portal vein ligation only, (II) ALPPS group: PVL+liver partition along the demarcation line produced by PVL, (III) PLL group: PVL+liver partition inside the ligated lobe. Liver tissues were retrieved on POD1 in each group. We measured mRNA expression of the genes of JAK/STAT3 pathway by real-time PCR. **Result:** mRNA expression of JAK2 gene was significantly higher in ALPPS group than other two groups, (1.13±0.33 in ALPPS, 0.60±0.19 in PVL, 0.65±0.24 in PLL: p<0.05), and importantly, there were no difference between PVL group and PLL group, suggesting that the highest JAK2 expression distinguished the most rapid liver hypertrophy in ALPPS group. Furthermore, STAT3 gene expression, a downstream gene of JAK2, was significantly higher in ALPPS group than PVL group (3.35±1.18 in ALPPS, 1.50±0.92 in PVL: p<0.05). **Conclusion:** Activation of JAK/STAT3 pathway might be one of the important factor to produce characteristic rapid liver hypertrophy in ALPPS procedure.

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Mif Regulates T Cell Response To Tlr4 Signal In Animal Model Of Type 1 Diabetes

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Background: TLR4 is a transmembrane receptor of the innate immune system that recognize LPS. Its stimulation induces pro-inflammatory responses and modulates adaptive immunity. First, our aim was to determine the role of TLR4 in the activation of T cells in the onset of autoimmune diabetes, using the non-obese-diabetic (NOD) mouse model. Then, we questioned whether Macrophage Migration Inhibitory Factor (MIF) could be involved in TLR4-mediated activation of T lymphocytes. **Material and Methods:** Spontaneously diabetic NOD mice, were treated with CLI-095, a TLR4 inhibitor, before onset of autoimmune diabetes. Onset of diabetes was detected by glycaemia and insulinitis analysed by histology. In vitro, activation and proliferation of NOD T cells stimulated with LPS were assessed by FACS and ELISPOT. Pro-inflammatory cytokine production and secretion were measured by FACS and ELISA. Role of MIF in TLR4-mediated response was evaluated in vitro by using genetic and pharmacological approaches. **Result:** TLR4 blockade decreases infiltrative insulinitis, prevents diabetes onset, and decreases in vitro NOD T cell activation and proliferation ($p=0.0046$). Moreover, TLR4 stimulation increases diabetogenic T cell proliferation ($p<0.001$), IL-2 secretion ($p=0.0302$), IFN γ -secreting cells ($p=0.015$) and the secretion of IFN γ ($p<0.05$). MIF mediates the LPS-induced activation of T-cell by modulating TLR4 mRNA expression. **Conclusion:** TLR4 blockade inhibits T lymphocytes activation and proliferation, leading to a decreased insulinitic infiltrate and a delayed diabetes development. Furthermore, we demonstrated that autoreactive T-cells are able to respond to TLR4 stimulation which may contribute to the destructive mechanisms leading to the loss of the insulin-producing β -cells. Finally, we demonstrated that MIF mediates TLR4-induced response in T-cells.

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Vegfr2 And Vegfr3 Antagonism Markedly Decreases The Lymphatic Vascularization In A Xenograft Mouse Model Of Cholangiocarcinoma.

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Background: In cholangiocarcinoma (CCA), early metastatic spread via lymphatic vessels often precludes effective therapies. Surgery and curative liver transplantation are options only for selected patients and the prognosis for CCA remains extremely poor. CCA-associated lymphangiogenesis is driven by different soluble mediators, including VEGF, mainly provided by the reactive stroma. **Material and Methods:** We used a xenograft model of CCA, generated by intraportal injection of human EGI-1 cells (500.000 cells suspended in PBS 100 μ l) in male CD17/lcr-Prkdc severe combined immunodeficient (SCID) mice (6-8 weeks old), after transduction with a lentiviral vector encoding the firefly luciferase gene to enable detection of tumor engraftment by in vivo bioluminescence imaging before starting treatment. Once tumor engraftment in the liver of EGI-1 cells was confirmed, mice were randomly divided into 3 experimental groups: a) controls (vehicle only, $n=6$); b) SU5416 (VEGFR2 inhibitor), at the dosage of 12.5mg/kg/die, i.p. ($n=6$); c) SAR131675 (VEGFR3 inhibitor), (100mg/kg/die), orally ($n=5$). After a 3-week treatment, mice were sacrificed and liver tissue sections evaluated for lymphatic microvascular density by immunohistochemistry for Lyve-1. The statistical analysis was carried on using mean $\pm$ SD and the Student's t-test for comparisons (significant p -value <0.05). **Result:** In SCID mice xenotransplanted with EGI-1 (human CCA cell line), antagonism of either VEGFR2 or VEGFR3 was accompanied by a significant decrease in the extension of lymphatic vascularization compared with controls. ($p<0.05$ vs Ctrl, for both groups, using two-tail t test.) **Conclusion:** Our data provide in vivo evidence that targeting VEGFR2 and VEGFR3 on lymphatic endothelium reduces CCA-associated lymphangiogenesis.

Award sessions: Young Investigator Award

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The Role Of Rna-Based Markers On Hepatotropic Viruses Related-Hepatocellular Carcinoma Recurrence After Liver Transplantation

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Background: Liver transplantation (LT) is the most beneficial therapy for HCC. However, recurrence after LT remains the major obstacle for patient's long-term survival. We previously determined that high expression of miR-21 was associated with HCC recurrence. Studies have shown that miR-21 plays a vital role in epithelial-mesenchymal transition (EMT). Thus, the aim of the present study was to evaluate the relation of EMT mechanism with miR-21 expression levels and the histopathological features of tumors in recurrence formation in HCC cases. **Material and Methods:** Between September 2008 and January 2015, 65 HCC patients who underwent LT in Uludag University Hospital were enrolled. The relationship between the altered expression of EMT markers and the expression profiles of miR-21, clinical, pathological features were assessed. **Result:** Compared with non-recurrent patients, among ten EMT markers, the expression level of Twist was 4.27-fold higher, Vimentin was 3.21-fold higher and E-cadherin was 5.96-fold lower in patients with recurrence during the 3-year follow-up ($p = 0.0322$, $p = 0.0231$ and $p = 0.0101$, respectively). In addition, the coexistence of high levels of Twist expression, high expression of miR-21 and HBV infection were associated with short OS ($p < 0.001$). Furthermore, when the correlations of EMT markers with miR-21, there was a positive correlation between Twist and miR-21 ($r = 0.819$, $p < 0.05$). **Conclusion:** Our results shown that miR-21 may induce EMT via Twist. We suggest that the combination of induced Twist and induced miR-21 expressions promising biomarkers for the prediction of recurrence in HCC patients after LT.

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Factors Associated With Early Cardiac Complications Following Trans-Catheter Aortic Valve Implantation With Trans-Apical Approach

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Background: To investigate the rate of early cardiac complications among patients who have undergone trans-apical approach of trans-catheter aortic valve implantation (TA-TAVI), and to identify independent factors associated with risk of occurrence. **Material and Methods:** A retrospective cohort study of 90 patients, who underwent TA-TAVI at a Liverpool based tertiary cardiac centre, between September 2008 and October 2013 was undertaken. Retrospective collection of data on patient demographics, peri-procedural characteristics and cardiac complications occurring within 30 days post-operatively, using an electronic database. **Result:** The overall 30-day incidence of cardiac complications was estimated at 18.9% ($n=17/90$). The rate of new onset of atrial fibrillation (AF), atrioventricular block requiring permanent pacemaker implantation, shockable cardiac arrest rhythm and cardiac tamponade was 11.1%, 3.3%, 2.2% and 2.2%, respectively. Bivariate analysis found that absence of preoperative AF ($p=0.01$), receiving of oral inotropes preprocedurally ($p=0.01$), intravenous inotropic support postprocedurally ($p=0.01$) and requirement for postprocedural tracheal intubation ($p=0.001$) were the main factors associated with increased probability for patient cardiac morbidity. **Conclusion:** There appear to be a greater incidence of early post TA-TAVI cardiac complications in patients with absence of AF and oral inotropic support pre-procedurally and those with post TA-TAVI mechanical ventilatory and intravenous inotropic support. This information allows for the early identification of patients at higher risk of early cardiac complications. This supports optimisation of preventative and therapeutic interventions, as well as effective allocation of healthcare system resources.

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Hyperbaric Oxygen Therapy Is A Promising Tool In Surgery For Both Complicated Wounds And Acute Ischemic Lesions

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Background: Hyperbaric oxygen therapy (HBOT) is considered a promising method to improve wound repair but data are scarce and indications still vague. Since 2014 we have been progressively introducing HBOT in the management of complicated wounds and of ischemic complications after reconstructive surgery. We performed in vivo studies to better understand its indications and mechanisms of action. **Material and Methods:** We studied HBOT in four different wound conditions by inflicting bilateral wounds on the dorsal aspect of the feet of non-ischemic or ischemic limbs in normoglycemic or hyperglycemic rats. Macroscopical wound assessment, immunohistochemistry and laser Doppler blood flow analysis were performed. **Result:** HBOT decreased wound healing time in all conditions but most significantly when ischemia and hyperglycemia were combined. Epithelialization and wound contraction were improved in the same proportion without impacting myofibroblasts expression. HBOT significantly increased collagen deposition and blood perfusion especially in early time points in ischemic wounds. In clinic, we observed a steady increase in the application of HBOT in plastic surgery patients with a good overall compliance and no treatment-associated complication. **Conclusion:** Our experimental data emphasize that early application of HBOT might be crucial to its efficacy in wound management. Ischemic hyperglycemic wounds most likely benefit from HBOT. Our results support HBOT as a promising tool to treat acute ischemic lesions as it significantly increased blood flow in ischemic limbs. More clinical data is needed to better understand whether HBOT has a benefit in surgical patients, especially in the rescue of post-operative acute ischemic tissue.

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The (Effective) Scattered Radiation Dose At Patients During Primary Osteosynthesis; A Multicenter Prospective Observational Study

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Background: A frequently performed surgical intervention for fractures is internal fixation with plates and screws, or intramedullary nails (osteosynthesis). Correct fracture and implant positioning is checked peroperative using fluoroscopy. Patients are not protected against this (scattered) radiation. The primary objective of this study was to measure the amount of scattered radiation at the thyroid, breast tissue, and gonads of patients undergoing primary osteosynthesis of acute fractures. The secondary objective was to calculate the effective scattered radiation dose per tissue or organ. **Material and Methods:** In this multicenter prospective observational case series patients undergoing a primary osteosynthesis of an acute fracture of hand/wrist, shoulder, ankle, knee, or hip were included. Three dosimeters were attached to the patient at the level of the thyroid, breast and gonads. Scattered radiation doses were corrected for background radiation. **Result:** A total of 205 patients were included between March 6, 2017 and June 18, 2018; 49 (24%) had a hand/wrist fracture, 37 (18%) a shoulder fracture, 47 (23%) an ankle fracture, 35 (17%) a knee fracture, and 37 (18%) a hip fracture. In 32-39% of all patients undergoing primary osteosynthesis corrected effective scattered radiation doses above zero were measured at the thyroid, breast and the gonads. The highest measured median effective radiation dose was 60.43 µSv (P25-P75 33.84-100.76) at the gonads during hip osteosynthesis. **Conclusion:** Scattered radiation is detectable in a third of patients undergoing an osteosynthesis. However, both effective radiation doses due to direct radiation and due to scattered radiation are low and will not increase the risk of developing cancer.

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Development And Validation Of A Prediction Model For Internal Hernia After Roux En Y Gastric Bypass.

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Background: Background Diagnosis of internal hernia (IH) after Roux-en-Y gastric bypass (RYGB) is challenging. Sensitivity of 63-92% was reported for computer tomography (CT). Laparoscopy remains paramount but yields surgical morbidity. We aimed to evaluate clinical and radiological signs of IH to develop and validate a prediction score. **Material and Methods:** Methods Consecutive patients admitted for abdominal pain after RYGB which underwent CT and surgical exploration were retrospectively included. Patients with appendicitis or CT unavailable for review were excluded. Binary logistic regression was used to determine a predictive score of surgically confirmed IH on Geneva training set (January 2006 - December 2014) which was validated in three tertiary centres Geneva (January 2015 - December 2017), Neuchâtel (January 2012 - December 2017) and Strasbourg (January 2012 - December 2017). **Result:** Results 228 patients were included, 80 (35.5%) had surgically confirmed IH, 38 (16.6%) had negative laparoscopy, 110 (48.2%) had an alternate diagnosis. In the training set of 61 patients, excess body weight loss >95% (OR 6.73 [95% CI, 1.13-39.96]), swirl sign (OR 8.93 [95% CI, 2.30-34.70]), and free liquid in one quadrant (OR 4.53 [95% CI, 1.08-19.0]) were independent predictors of IH. Equal point value of 1 was assigned to each predictor, C-statistic was 0.799. In the validation set of 167 patients, IH-score ≥ 2 was associated with an incidence of IH of 60.7% (34/56) and 5.3% (3/56) had negative laparoscopy, C-statistic was 0.846. **Conclusion:** Conclusion IH-score showed good performance and could be incorporated in a clinical setting. We would recommend explorative laparoscopy in patients with a score ≥ 2 .

Award sessions:

Best Clinical Research Award

1073**Risk Factors For Incarceration In Patients With Primary Abdominal Wall And Incisional Hernias, A Prospective Study In 4,472 Patients**

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Background: Incarceration of primary and incisional hernias often results in emergency surgery. Objective of this study was to evaluate the relation of defect size and location with incarceration. Secondary objectives comprised identification of additional patient factors associated with an incarcerated hernia. **Material and Methods:** A registry-based prospective study was performed of all consecutive patients undergoing hernia surgery between September 2011 and February 2016. Multivariate logistic regression was performed to identify risk factors for incarceration. **Result:** In total, 83 (3.5%) of 2,352 primary hernias and 79 (3.7%) of 2,120 incisional hernias had a non-reducible incarceration. For primary hernias, a defect width of 3-4 cm compared to defects of 0-1 cm, was significantly associated with an incarcerated hernia (OR:2.85, 95%CI:1.57-5.18, p=0.0006). For incisional hernias a defect width of 3-4 cm compared to defects of 0-2 cm, was significantly associated with an incarceration (OR:2.14, 95%CI:1.07-4.31, p=0.0324). For primary hernias, defects in the peri- and infra-umbilical region portrayed a significantly increased odds for incarceration as compared to supra-umbilical defects (OR:1.98, 95%CI:1.02-3.85, p=0.043). Additionally, in primary hernias age, BMI, and constipation were associated with incarceration. In incisional hernias age, BMI, female sex, diabetes mellitus and ASA-classification were associated with incarceration. **Conclusion:** Mainly defects of 3-4 cm of primary and incisional hernias were associated with incarceration. Mainly defects located in the peri- and infra-umbilical region were associated with incarceration for primary hernias. Based on patient and hernia characteristics patients with increased odds for incarceration may be selected and these patients may benefit from elective surgical treatment.

854**The Inhibition Of Cancer Cell Proliferation Induced By Self-Expandable Metallic Stent In Malignant Large Bowel Obstruction**

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Background: Although the short-term benefits of "bridge to surgery (BTS)", a placement of self-expandable metallic colonic stent (SEMS) followed by surgery, for malignant large bowel obstruction (MLBO) have been reported, the long-term oncological effect is undetermined. The objective of this study was to investigate alterations in oncological characteristics in colorectal cancer (CRC) tissues after SEMS placement. **Material and Methods:** A total of 25 patients who underwent BTS for MLBO in our department were retrospectively included. Paired CRC tissue samples before (endoscopic biopsy) and after SEMS placement (surgically resected) were collected from each patient. Growth factors of EGFR and VEGF, cell cycle factors of Ki-67 and p27kip1 expressions were assessed by immunohistochemistry, and apoptosis were evaluated by TUNEL staining. **Result:** No perforations were observed clinically and pathologically. Epithelial exfoliation, tumour necrosis, infiltration of inflammatory cells, and fibrosis were observed in SEMS-inserted surgically-resected specimens. Overall, 84% (21/25) and 60% (15/25) of patients showed no change or a decrease in staining category, respectively, for EGFR and VEGF expression after SEMS placement. A significant decrease in Ki-67 expression was observed in surgically-resected specimens compared with endoscopic biopsy specimens (P < 0.01). The upstream cell cycle inhibitor, p27kip1, was significantly increased after SEMS placement (P = 0.049). No change of apoptosis was observed after SEMS placement. **Conclusion:** The long-term influence of SEMS placement has been attracting a great deal of attention currently. The mechanical compression by SEMS may inhibit cancer cell proliferation and the results can provide some insights into the topic.

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Predicting Post-Liver Transplantation Recurrence Of Hepatocellular Carcinoma Using A Novel Model That Incorporates Tumor- And Donor-Related Factors: The Darlica Score

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Background: The aim of this study was to develop a prognostic score that combines tumor and donor characteristics, to predict post-transplant hepatocellular carcinoma (HCC) recurrence. **Material and Methods:** Within the Scientific Registry of Transplant Recipients, we identified patients with HCC who received a liver transplantation between 2004 and 2014 (training set, n=10,887), and we calculated post-transplant HCC recurrence rates. We fitted a multivariable competing-risk regression model including recipient-, tumor- and donor-related factors, from which a prognostic score (the Donor And Recipient score for Liver Cancer, DARLICA) was developed. The score was internally validated in a distinct subset of the population (n=3,627). **Result:** In the training set (n=10,887), after allowing for competing events, we found that total tumor diameter (hazard ratio [HR] 1.52 (95%CI 1.28 to 1.81) p<0.001), alpha-feto protein (HR 1.27 (95%CI 1.23 to 1.32) p<0.0001), male gender (HR 1.43 (95%CI 1.18 to 1.74) p<0.001), donor body mass index (HR 1.26 (95%CI 1.01 to 1.58) p=0.037), and graft allocation policy (HR 1.22 (95%CI 1.03 to 1.44) p=0.020) were independently associated with post-transplant HCC recurrence. Based on the coefficients of that model, we developed the DARLICA score, and applied it in the validation set (n=3627), where it distinguished several categories of patients in terms of risk of HCC recurrence. **Conclusion:** The DARLICA score is the first score predicting post-transplant HCC recurrence that incorporates donor and tumor characteristics. It is based on readily available variables, and it could help transplant teams identifying, at the time of waitlist inscription, beneficial (or hazardous) combinations between the recipient and the donor.

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Presentations And Aetiologies Of Acute Colitis: A Prospective Cohort Study

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Background: Our aims were to determine the aetiologies of acute colitis and to identify predicting factors for patients requiring endoscopy. **Material and Methods:** All patients with CT-confirmed symptomatic colitis were included. Stools were analysed using FilmArray Gastrointestinal PCR (Biomérieux) and faecal calprotectin was measured. Patients with negative PCR underwent colonoscopy. **Result:** Seventy-seven patients were included from 11.2016 to 11.2017. FilmArray was positive in 45 patients (58.4%). Twenty-four of them (53.3%) were tested positive for *Campylobacter* spp, 13 (28.9%) for *E. coli* pathovars, 9 (20%) for *Clostridium difficile*, 4 (8.9%) for *Salmonella* spp, 3 (6.7%) for *Shigella* spp, 1 (2.2%) for *Plesiomonas shigelloides* and 3 (6.7%) for viruses. Thirty-six patients had negative routine PCR assay and underwent colonoscopy within 5.4±2.3 days. Colonoscopy revealed inflammatory chronic bowel disease (ICBD) in 3 patients and ischemic colitis in 6. Colonoscopy was normal or showed eosinophilic infiltration in 27 patients (35%). No adenocarcinoma was found. Calprotectin >10'000 mg/g was identified as a strong predictor of ICBD (OR 67, 95%CI: 4-1082). **Conclusion:** In conclusion, aetiologies of colitis were infectious in 60% of patients, ischaemic in 8%, ICBD in 4% and undetermined in 35%. A calprotectin value >10'000 mg/g allows targeting patients requiring endoscopy.

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Sentimag And Mri Interstitial Lymphangiography In Head And Neck Cancer Sentinel Node Biopsy

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Background: Early stage (T1-T2) squamous cell carcinoma of the oral cavity with clinically N0 neck is associated with a false-negative rate of 40% for neck metastasis. As neck metastasis is the main predictive factor in head and neck cancer, it is of paramount importance to stage those patients accurately in order to offer them the best chance of survival. Sentinel lymph node (SLN) biopsy is a minimally invasive procedure which is validated in the evaluation of the presence of occult neck metastasis. We present an original technique, using an ultra small iron oxide nanoparticles (USPIO) dextran coated of 60 nm as a tracer and detected per-operatively with Sentimag. The USPIO offer the additional advantages of being detected in the lymph nodes during the pathologic exam, establishing a positive control in the identification of the correct SLN, and, of being traceable during the magnetic resonance imaging. Last, it is not radioactive, facilitating its use in routine practice. **Material and Methods:** Prospective translational clinical research study evaluating the feasibility of this technique on 24 patients with cT1-T2N0 primary squamous cell carcinoma of the oral cavity and of the pharynx who underwent the tumor resection and a neck dissection after the peritumoral injection of the USPIO. A subgroup of 9 patients had an additional pre-operative MRI after the USPIO injection. **Result:** No complication occurred. The sensitivity and specificity for the identification of lymph node metastasis were 25% and 89% (997 lymph nodes analyzed). If SLN identification was extrapolated to subgroup of the neck, sensitivity and specificity were 100 and 60% (94 neck subgroups analyzed). Regarding the identification of the USPIO in the SLN, sensitivity and specificity were 58 and 96% (761 lymph nodes). **Conclusion:** Sentimag with per-operative detection of SLN is a novel feasible surgical technique, which warrants some refinements. Despite poor sensitivity in SLN metastasis identification, it offers promising future perspectives.

Award sessions:

B. Braun Award

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Intravesical Botulinum Toxin A Injections In Patients On Anti-Platelet And Anticoagulation Therapy

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Background: There is little evidence regarding the safety of Intravesical botulinumToxin-A (Botox) injections in patients on anticoagulant/antiplatelet(AC/ACP) medication. The cessation of which may predispose to thromboembolic or ischaemic events. We reviewed significant bleeding events after Botox injection with concurrent AC/AP use. **Material and Methods:** A retrospective review of all patients having Botox in 3 London hospitals was conducted between January 2016-July 2018 to examine those with continued AC/AP therapy. Demographic data, indication for injection, and side-effects of significant bleeding requiring intervention were recorded. **Result:** Results 532 patients had Botox injections during this time. 63 patients [mean age 69 years(range 19-89), had a total of 114 separate rounds of Botox injections whilst on treatment dose AC/AP therapy. Each patient had between 1-7 repeat Botox injections. AC/AP use included; aspirin 44, clopidogrel 37, warfarin 19, NOAC(novel/non-vitamin K oral anticoagulant) 14. Patients on warfarin who had point of care testing all had INR < 3. There was 1/114(0.88%) episode of post-injection haematuria requiring overnight admission resolving spontaneously, with catheterisation. This patient, on rivaroxiban had 300U of Botox injected through 20 sites, on a background of previous prostate radiotherapy. There was no report of bladder washout under anaesthesia or transfusion. **Conclusion:** Very few significant bleeding events occurred despite continuation of AC/AP therapy during intravesical Botox treatment. Some patients within this group may have other factors that further increase bleeding risk. This is an important consideration during patient counselling, and when treating patients who have high risk of thrombosis with AC/AP.

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Correlation Between Adenoma Detection Rate And Polyp Detection Rate At Endoscopy In A Non-Screening Population

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Background: It is understood that colorectal adenomas progress to adenocarcinoma. Adenoma detection rate (ADR) at endoscopy has been used as a key performance indicator at endoscopy and is inversely associated with diagnosis of interval colorectal cancer. As most endoscopy reporting systems do not routinely incorporate histological assessment, ADR reporting is a cumbersome task. Polyp Detection Rate (PDR) has therefore been adopted as a surrogate marker for ADR. The aim of our study was to investigate the validity of routine PDR use as a surrogate marker for ADR. **Material and Methods:** A prospectively maintained database of colonoscopies performed between July 2015 and July 2017 was analysed. This was cross referenced with a histological database. Statistical analysis was performed using IBM SPSS, version 24. Inferential procedures employed included the Pearson's correlation coefficient (r) and Binomial logistic regression. **Result:** Of 2964 procedures, overall PDR was 27% and ADR was 19%. The PDR, ADR, adenoma to polyp detection rate quotient (APDRQ) and estimated ADR (PDR x APDRQ group average = 0.72) was calculated for each endoscopist. There was a strong positive correlation between PDR and ADR (p=0.003), PDR and estimated ADR (p<0.001) and between ADR and estimated ADR (p=0.003). Male gender, increasing age, length of procedure and withdrawal time were associated with an increased likelihood of polyp detection. **Conclusion:** PDR can be used as a surrogate marker for ADR and thus a key performance indicator at endoscopy. Other variables associated with higher polyp yield may include increasing age of patient, male gender, length of procedure and withdrawal time.

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Anatomical Study Comparing Medialization After Rives-Stopppa, Anterior Component Separation, And Posterior Component Separation

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Background: Large incisional hernias require medialization of the rectus abdominis muscles to facilitate tension-free closure. Medialization may be achieved by Rives-Stopppa, anterior component separation or posterior component separation. This study aims to compare medialization after these techniques in post mortem human specimens **Material and Methods:** A Rives-Stopppa procedure was performed. Subsequently, after randomization, anterior or posterior component separation was performed on the contralateral side of a single specimen. Medialization was measured at three levels of the linea alba with three 1 kg weights. Medialization additional to initial lateral advancement after opening the linea alba, as well as total medialization, were measured. Medialization is presented as median and interquartile range (IQR). **Result:** Thirteen post mortem human specimens were included (Rives-Stopppa n=13, component separation n=10). Additional medialization after Rives-Stopppa was 1.2 cm (IQR: 0.3-2.2) for the anterior rectus sheath and 2.2 cm (IQR: 1.6-3.0) for the posterior rectus sheath (total medialization: 3.9 and 4.5 cm). For the anterior rectus sheath additional medialization was 2.6 cm (IQR: 1.2-3.6) after anterior component separation and 1.9 cm (IQR: 0.4-3.4) after posterior component separation (p=0.125) (total medialization: 6.5 and 5.7 cm). For the posterior rectus sheath, additional medialization was 3.0 cm (IQR: 2.2-3.7) after anterior component separation and 5.2 cm (IQR: 4.2-5.9) after posterior component separation (p<0.001) (total medialization: 5.8 and 9.4 cm). **Conclusion:** Posterior component separation yielded significantly more medialization of the posterior rectus sheath compared to Rives-Stopppa and anterior component separation. Anterior component separation may provide marginally more medialization of the anterior rectus sheath.

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Significance Of Partial Portal Arterialization In Small Bowel Auto-Transplantation

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Background: Small bowel transplantation has proved feasible in man, but several important questions have yet to be answered. One consideration is the site of venous outflow of the allograft. Portal drainage, however, re-establishes the physiological route of venous outflow, while systemic drainage creates a partial mesocaval shunt. **Material and Methods:** We used canine models. 1. portacaval shunt (Eck) (n=6) 2. Intestinal autotransplantation with systemic venous outflow (MCA) (n=5) 3. intestinal autotransplantation with systemic venous outflow plus partial arterialization (spleno-spleno AV fistel) (MCA+A) (n=5) .Sham ope (n=5) Postoperative 4 weeks after, we calculate hepatic blood flow, amino acid, NH₃, and hepatic ATP. **Result:** The metabolic changes observed after MCA did not parallel the changes (hyperammonia and amino acid imbalance) seen after Eck. NH₃ and amino acid in MCA are similar to control. But, hepatic ATP in MCA was significantly lower values than control. But hepatic ATP in MCA+A was similar to control. **Conclusion:** This experimental study showed that partial portal arterializations has beneficial effects on liver under Intestinal autotransplantation with systemic venous outflow.

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The Co-Expression Of Cd26 And Tgf-B1 Renders Lung Cancer Targetable To Cd26-Inhibition

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Background: CD26/dipeptidyl peptidase 4 (CD26) is a transmembrane multifunctional molecule present on various haematopoietic and somatic cells. We showed previously that lung cancer growth is decreased upon CD26-inhibition. Also, we could demonstrate that CD26 is highly expressed in human lung adenocarcinoma. We here extended our analysis on the expression of CD26 within the lung tumor microenvironment. **Material and Methods:** Samples from patients with lung malignancies (n=103) including adenocarcinoma (n=38), squamous carcinoma (n=26), lung metastases (n=14), and others (n=25) were analyzed against normal lung on a gene level for CD26, TGF- β 1, TGF-R1, TGF-R2 and CCL2 by RT-qPCR, on a protein level for CD26 and TGF- β 1 by ELISA, and by immunohistochemistry (IHC) for CD26 (n=80). The expression of CD26 on tumor cells was graded from 0 to 3. **Result:** Adenocarcinoma expressed significantly more CD26 than other thoracic malignancies (n=80, p=0.0001). While stage IA adenocarcinoma expresses significantly higher amounts of CD26 compared to stage IIIA (p=0.0019), levels of CD26 raised in stage IIIB and IV, however, without significance. Furthermore, we found a significant correlation between the gene expression of CD26 on tumors for TGF- β 1 (p<0.0001), TGF-R1 (p=0.0004), and TGF-R2 (p<0.0001). Also, the pro-inflammatory chemokine ligand CCL2 was significantly correlated with CD26 (p=0.0011). The co-expression of CD26 and TGF- β 1 could be additionally confirmed on a protein level. **Conclusion:** We could confirm that CD26 is highly expressed in lung adenocarcinomas and that CD26 is co-expressed with pro-fibrotic proteins relevant to tumor microenvironment formation. This co-expression supports the potential for the treatment of lung cancer with CD26-inhibitors.

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Vein-Loop Interpositum In The Femoral Artery Of Rats: Operative Technique, Hemodynamic, Microcirculatory And Hemorheological Effects

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Background: Vein graft arterialization is influenced by hemodynamics and flow properties of blood among others. Vein-loop interpositums are supposed to reduce shear forces that may alter hemorheological and microcirculatory parameters as well. **Material and Methods:** On 20 anesthetized male Crl:WI rats (permission Nr.: 25/2016/UDCAW) the right inferior superficial epigastric vein was dissected, and as vein graft was placed in to the femoral artery in a loop-shape position performing end-to-end anastomoses. Blood samples were taken before/after surgery, and 1, 3 and 5 weeks later for testing hematological parameters, erythrocyte aggregation, deformability and mechanical stability. Skin microcirculation of hind limbs was monitored from the inguinal region to the paws. Finally, MRI and SPECT-CT examinations were done under anesthesia, and then the grafts were excised for histology and for making plastic molds. The molds were 3D scanned for flow simulation. **Result:** After an initial postoperative decrease (p<0.05) erythrocyte deformability normalized by the 1st week. Erythrocyte aggregation values decreased by the 5th week. The operated hind limb's skin microcirculation significantly increased by the 1st week (39±10.57 vs. 73.93±1.97 BFU, p<0.01) with increased skin surface temperature, supposedly due to a steal-effect. MRI and SPECT-CT records proofed the functioning grafts. Histologically, tunica intima and media thickness significantly (about tenfold, p<0.001) increased compared to the intact vessels. **Conclusion:** The vein-loop interpositum were functioning, and the arterialization completed during the observed period. Erythrocyte deformability didn't worsen, suggesting that the existing shear forces on cells were not harmful. The model can be useful for further studying blood flow in vein grafts.

Symposia: What's new in hand surgery?

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Symposium 2: Hand Surgery: My Experience With Wide-Awake (Walant) Surgery

Dr. Stéphane Kämpfen ^a

^a CH8 Hand surgery clinic, Geneva, Switzerland;

Background: In this lecture, Dr. Stéphane Kämpfen, an expert hand surgeon from Geneva, Switzerland will present his personal experience with 'Wide Awake' surgery. This type of local anesthesia includes epinephrine and enables surgery on the hand without the need for a tourniquet, in which the patient may have an active range of motion during the operation. This type of anesthesia enables the surgeon to perform surgery comfortably without the need for an anesthesiologist, without bleeding, in which the operative result may be assessed and corrected if necessary, intra-operatively. In this lecture Dr Kämpfen will present his own series and will explain how to perform this technique safely. Furthermore, he will provide evidence against the 'Dogma' that epinephrine cannot be used in the fingers.

1048

Long Term Evolution Of Rcpⁱ® Implants In Pancarpal Arthritis

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Jean-Yves Beaulieu ^a

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Background: Surgical strategies for pancarpal arthritis are various and debated. In this study we report our experience on the use of the RCPi® implant (Resurfacing Capitate Pyrocarbon Implant) over 12 years. **Material and Methods:** Between 2006 to 2018, we treated 17 patients with RCPi® implants. 2 were lost immediately after surgery and 3 had less than 1 year follow-up and were therefore excluded. Surgical indication for the 12 remaining patients were: 3 Kienböck, 2 SLAC, 2 SNAC, 3 post-traumatic arthritis, 2 essential arthritis. Endpoints were: Range of motion, strength, functional scores (Quick DASH, PWRE) and radiological observation. In this particular category, we focused on the migration of the implant. 2 patients had the implant removed after 3 years for uncontrolled pain. **Result:** Mean follow-up was 34 month (12-83). Mean age at operation was 50 years (28-70). Preoperative median wrist flexion was 42° (20°-90°). It decrease by 12° (20°-70°) at last control. In contrast, extension increase by 12.5°. Grip strength increased by 3kg, which represent 10% of improvement compared to the contralateral side. Quick DASH was 31 and PWRE 62. Concerning radiological findings, we observed the apparition of a chamber around the implant associated with a distal migration of 6.32% (-0.9%-18%). According to the Youm index, it represent 8.4% of carpal collapse. The greatest modifications occurred during the first year. **Conclusion:** The RCPi® is a good alternative in the care of pancarpal arthritis, regarding ROMs, strength and satisfaction of our patients. However, we observed constant radiological modifications, without being binded with worse outcomes or second surgery.

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A Novel Combined Approach To The 1,2 Inter-Compartmental Supraretinacular Artery Radial Flap May Correct Scaphoid Collapse And Prevent Non-Union

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Background: Scaphoid non-union remains a major problem in hand surgery. The 1,2 intercompartmental supraretinacular artery flap, as first described by Zaidenberg, is widely used with a union-rate of about 80%, however limited in case of associated carpal collapse as in dorsal intercalated segmental instability (DISI) and humpback deformity. In this study, we present a novel approach to this flap enabling the correction of associated carpal collapse. **Material and Methods:** 9 patients with scaphoid non-or-delayed-union with carpal collapse were treated with a vascularized bone graft based on the 1,2 intercompartmental supraretinacular artery using a combined volar and dorsal approach between 2006 and 2015. Immobilization by a short arm cast was applied for 8 weeks. Union rates, correction of DISI and humpback deformity as well as clinical endpoints were noted. In addition, scapho-lunate (SL) angles were measured using two accepted techniques **Result:** Union rate was 100% with a median time to bone consolidation of 4 months. Depending on the SL measurement technique used, four patients had pre-operative DISI which was corrected in all patients. Humpback deformity was seen in five patients and corrected in all cases. No major complications were observed in this series. **Conclusion:** The 1,2 intercompartmental supraretinacular artery bone flap is a reliable treatment of scaphoid non-union associated with carpal collapse. Our combined volar and dorsal approach permits the correction of DISI and Humpback deformity without precluding scaphoid vascular supply, eliminating the need for the use of free bone flaps from other sites. In this series, we observed a 100% union rate without major complications.

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Dynamic Traction With Open Reduction Internal Fixation For Treatment Of Fracture-Dislocations Of The Proximal Interphalangeal Joint

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Background: To investigate the outcome of dynamic traction with open reduction internal fixation (ORIF) for treatment of fracture-dislocations of the proximal interphalangeal joint (PIPJ). **Material and Methods:** 10 consecutive patients diagnosed with fracture-dislocations of the PIPJ were treated by dynamic traction with ORIF either with K-wires or mini-screws. Among all patients 8 were male and female 2. The average age was 32-year-old. One index, 2 long and 7 ring fingers were involved. Articular surface involvement ranged from 40% to 68%. A volar "shot-gun" approach was used in all patients. Autogenous bone graft was performed in one patient and allogenic bone graft in two. The dynamic external fixator was applied after closure of the incision and was removed at 5-6 weeks postoperatively. Active movement of the PIPJ started two days after surgery. Clinical and radiological outcomes were measured. **Result:** All patients were followed up with an average follow-up 12 months. No infection, allograft bone rejection or pin loosening occurred. At final follow up, X-ray showed fractures healed well with no subluxation of PIPJ in 8 patients, while degenerative changes occurred in 2 patients and a supplementary operation was performed. Average grip strength was 86% of unaffected side, and average active PIP joint motion arcs were 97°. Average VAS was 0.3 and average Quick DASH score was 4. All patients returned to their original occupation and all were satisfied with the result. **Conclusion:** Dynamic traction with ORIF is a technique required method for treatment of fracture-dislocations of the PIPJ. It allows early active movement of the PIPJ and provides good clinical outcomes.

Symposia: The ACL and its associated injuries

1053

Anterior Cruciate Ligament (Acl) Reconstruction – Where Are The Points Of Debate

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Background: Anterior cruciate ligament (ACL) reconstruction is performed to stabilize the knee after an ACL injury and to allow a safe return to sports. Therefore, anatomy and respecting the healing process are the key for success. Graft choice is a patient-based decision-making process based on concomitant injuries, previous surgeries, physical demands, and surgeon's preference. Not only the donor site morbidity, but also the size and shape of the graft seem to play a major role. The tunnels should be placed as anatomical as possible, and preferably cover more the antero-medial bundle. Several techniques exist to drill these tunnels such as the trans-tibial, antero-medial or out-side in, each of them having their disadvantages. The double-bundle technique being technically more demanding, allows however to cover more of the femoral insertion site of the native ACL and shows increased rotational stability. Nevertheless, evidence of improved outcome is still lacking over single bundle reconstruction, similar to the remnant preserving technique. The ribbon-like ACLR might be an alternative in the future to improve rotational stability without being technically more demanding. Fixation techniques should allow solid and immediate fixation (primary fixation) and a good integration of the graft into the bone (secondary fixation) which both are influenced by the graft and the fixation device. None of the techniques shows clear advantage, as long as anatomy is adhered, probably due to the large number of confounding factors.

1067

The Menisci – Why To Preserve Them ?

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Background: Basic science in recent decades has demonstrated the importance of the meniscus in knee homeostasis. Meniscal function includes load bearing, load transmission, shock absorption, joint stability, as well as lubrication and proprioception. This knowledge has forced orthopedic surgeons to change the management of meniscal lesion and to improve their techniques. Treatment has now been focused on meniscal preservation. We moved from the old slogan, "If it is torn, take it out!" to the currently accepted slogan, "Save the meniscus!". Modern arthroscopic techniques consist of partial meniscectomy, meniscal repair with or without biological enhancers and meniscal replacement/reconstruction. Anatomical and biomechanical characteristics of meniscus, management strategies of degenerative and traumatic meniscal tears will be presented.

1060

Peripheral Lesions And Their Importance In Acl Deficient Knees

Philippe Tscholl ^a

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Background: Lesions of the knee periphery combined with ACL ruptures are found in nearly 60% of the patients. Whereas as some are believed to heal completely without any surgical treatment, such as partial lesions of the medial collateral ligament, lesions of the posteromedial corner (PMC), the anterolateral ligament (ALL) and the posterolateral corner (PLC) might be more difficult to depict in the acutely injured knee and may cause an increased risk for re-injury, chronic instability or graft re-rupture. Especially anterolateral rotatory knee instability combined with ALL rupture has gained increased attention in literature. The ALL is a secondary constraint after the anterior cruciate ligament for anterolateral rotatory instability, and its reconstruction has shown favourable results in terms of knee stability and a decrease in re-injury. However, the diagnosis of increased anterolateral knee instability with a positive pivot shift test might not be so trivial. Not only, inter-rater reliability is very low, but also increased postero-medial instability that occurs when the PMC is injured, shows increased pivot-shift. Whether these knees require the same surgical treatment, remains unclear in literature. Long-term outcome after ALL reconstruction with modern techniques is also unknown. Earlier results showed increased lateral femoro-tibial osteoarthritis and pain. There is emerging need of increased understanding of peripheral knee lesions associated to ACL ruptures to improve postoperative outcome.

1054

Rehabilitation After An Acl Injury : A Multidisciplinary Clinical Pathway

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Background: Return to sport after an ACL injury is a long and winding road, thus it is crucial to conceive a clear multidisciplinary clinical pathway tailored for each patient. In this context, the patient could have prehabilitation, rehabilitation post surgery or a non-surgical treatment. Prehabilitation is essentially based on the recovery of ROM and strength. The postoperative rehabilitation or conservative treatment are based on functional phases, and the progression to the next one is based on clear functional criteria. The capacity for return to sport is evaluated with a functional test battery and a medical clinical examination. These allow to negotiate the RTS for each patient.

1051

What results can we expect with or without surgery ?

Maximilian Schindler ^a

^a HUG, Geneva, Switzerland;

Background: Patients seek help to recover a painfree, strong, confident and stable knee. Some populations have less time available or socioprofessional factors limiting rehabilitation. The debate whether ACL-reconstruction is superior over conservative treatment (structured physiotherapy) has not yet been reliably answered. However, there are international level athletes in pivoting sports that have opted for the latter with success. Clinicians face the difficulty to identify copers from the non-copers and the adapters to recommend an ideal treatment plan. Associated meniscal lesions (ruptures, instabilities) rather than isolated ACL-ruptures seem to be a crucial factor in developing early osteoarthritis. Psychological aspects as well as bilateral proprioceptive deficiency should be addressed in current rehabilitation protocols after ACL-trauma. Current data shows 83% of the athletes returning to their initial sport at comparable level to non-injured controls. Graft rerupture rate in adults has been stated lower than 5% and rehabilitation roughly takes six to twelve months. The pediatric population has a 25% re-rupture rate ipsilateral and 10% ACL-rupture rate in the contralateral knee when returning to pivoting sports. Pediatric rehab protocols do not significantly differ from those of adults, however individual coaching should be pursued longer than in adults to ensure high quality exercises.

1064

Treatment Of Traumatic Cartilage Lesion Of The Knee – Science Vs Clinical Relevance

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Background: Knee trauma is highly associated with focal cartilage lesions, which are a major risk for evolving in osteoarthritis if left untreated. Successful cartilage treatment requires a stable knee joint, functional menisci, physiological leg alignment and intact local metabolism. Several treatment methods are described in literature, such as microfracture, augmented microfracture (or microfracture plus), osteochondral autografts (mosaicplasty) or autologous chondrocyte transplantation (ACT). There is rising evidence, that microfracture alone show satisfactory results for the first 2-3 years only, with deteriorating subjective results thereafter. The clinical results after microfracture combined with a collagen I membrane or with a hyaluronic acid gel don't seem to decline at mid-term follow-up. Although tissue quality seems to be improved by ACT with a lesser content of fibrous cartilage formation, there is little to no evidence showing any superiority on clinical outcome of ACT above augmented microfracture techniques or osteochondral autografts. How does science contribute to improve clinical results in cartilage treatment ? Where are the limitations of translational science ? How much fiction and how much fact legitimate the high costs of modern cartilage repair to be implemented in human knees ?

Symposia: The patellofemoral instability

1056**Patellofemoral Instability And Its Treatment – « State Of The Art »***Philippe Tscholl^a*^a Departement of Orthopaedic Surgery and Traumatology, Geneva, Switzerland;

Background: The main landmarks of the understanding of patellofemoral instability are based on the key papers by Henry Dejour and colleagues of the “Lyon school”. Trochlear dysplasia was described by them to be present in 96% of all knees suffering from recurrent patellar instability. Further risk factors were identified being patella alta (usually defined by the Caton-Deschamps index > 1.2), increased tibial-tubercle trochlear groove distance (TT-TG above 20mm) and patellar tilt above 20°. The Lyon algorithm for stabilizing the patella called “menu à la carte” published by David Dejour is the most widely accepted treatment pathway in this pathology, suggesting trochleoplasty in high-grade trochlear dysplasia, distalizing tibial tubercle osteotomy in knees with patella alta, and medializing tibial tubercle osteotomy in knees with increased TT-TG distance. Postoperative results show only low recurrence rate of patellar dislocation and in general satisfying subjective results. This algorithm strictly relies on morphological measurements, with partially non validated cut-off values and categorisation. Newer treatment algorithms which aren’t based solely on morphological measurements, have been published recently, however on the type of patellar instability. Using this algorithm, surgical treatment tends to be less invasive and less complex, however lacks validation on a large scale.

1023**Distal Alignment Osteotomies – Is There Any Rational In Patellofemoral Instability?***Thanh Nam Lê^a*^a Geneva University Hospitals (HUG), Genève, Suisse;

Background: Increased patellar height and increased lateral vector force of the patella may lead to maltracking and even to patellar dislocation. Both can be treated by osteotomy to the tibial tubercle either by distalisation and/or medialisation. The definition of patella alta however is manifold, and surgical indication varies widely amongst expert opinions. Although distalisation of the tibial tubercle shows good results in terms of patellar stability, there are major downfalls such as pain, articular overcompression and associated fractures. The lateral vector force is measured by the tibial-tubercle trochlear groove distance, and usually corrected by a medialising tibial tubercle osteotomy, or less frequently by a sulcus deepening trochleoplasty. However, so far, it is not clear, which corrective measure is more adequate, and especially if the problematic is not rather a intra-articular pathology. Pros and cons of the different distal alignment osteotomies will be discussed and alternative presented.

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The Role Of Femoral Osteotomies In Patellofemoral Instability

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Background: Although genu valgum and increased femoral antetorsion – with the distal femur facing inwards – both affect patellar tracking to some extent by increasing the q-angle and therefore the lateral patellar vector force, neither has been included in a treatment algorithm for patellar instability. One of the explanation might be the invasive surgical treatment, the potential complications associated with the osteotomy usually performed on the distal femur, and further the lack of a clear cut-off value in literature. The advantage of medial closing or lateral opening osteotomy to correct genu valgum or derotational osteotomy to correct femoral antetorsion, is that the joint itself is untouched, and the trochlear groove is centered below the patella, whereas most patellar stabilization procedures focus on centering the patella in the trochlear groove, which most probably is the origin for a high percentage of patients with increased postoperative patellofemoral pain. There is rising evidence in literature, that femoral osteotomy decreases patellofemoral pain after patellar stabilizing procedures. Challenges of the different measurement methods and of the surgical procedure will be discussed.

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Trochleoplasty, Why And How ? Is There Any Evidence ?

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Background: Femoral trochlear dysplasia, which is characterized by a flat or convex articular surface of the distal femur, is known as the most important risk factors for patellar maltracking and recurrent patellar instability. The only surgical procedure treating this pathology is trochleoplasty. The first technique has been published more than 100 years ago, forming a trochlear groove by raising the lateral trochlear facet. Due to increased patellofemoral osteoarthritis, this procedure has been completely abandoned. Nowadays, most techniques perform an osteochondral flap of the entire proximal trochlea or only its centre, and flatten or deepen the trochlear sulcus. It is thought to be the most anatomical treatment to stabilize the patella. Although postoperative results are promising in terms of patients satisfaction and patellar stability at mid-term, pain and evolving osteoarthritic changes due to increased peak forces of the mismatch between the trochlea and the patella are a major problem. Although trochleoplasty is recommended in high-grade trochlear dysplasia, or in knees with patellar instability in higher flexion, literature so far lacks evidence of its superiority above other surgical treatment options. Aiming an “anatomical “ morphology of the trochlea seems not to be functional, therefore leaving some sort of dysplasia and combining trochleoplasty with other procedures, seems to be most effective. The different surgical techniques, their indications and pitfalls will be discussed.

1026

Symposium Dr Tscholl : Primary Patellar Dislocation – Is Non-Operative Treatment Still The Goldstandard ?

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Background: Lateral patellar dislocation is a frequent knee injury especially in adolescents. It is known having major implications on quality of life due to persisting pain, apprehension and a high recurrence rate. There is general consensus that primary patellar dislocation with associated osteochondral fracture, most frequently from the patella, requires surgery to restore the articular surface or to remove the loose body in the knee. Additional procedures are not necessary, since in these cases, recurrence rate are reported to be low, and the degree of trochlear dysplasia is generally minor. Only in selected cases MPFL reconstruction might be indicated. [1] First line treatment of primary patellar dislocation without associated fracture still is non-operative, but improved understanding of the patellofemoral joint and surgical techniques especially of MPFL reconstruction is challenging this practice. The objective is to depict the patients with higher risk of recurrent patellar dislocation and to prevent them from persisting disability due to knee pain. The patellar instability severity score (PISS) summarises the most important risk factors and gives evidence on the decision making of initial treatment that may be surgical in some knees.

Symposia: Islet transplantation

1046

Insulin Producing Organoids Generated From Islet Cells And Amniotic Epithelial Cells Reverse Diabetes After Marginal Mass Transplantation In A Murine Model

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Background: In this study we have generated islet heterospheroids composed of hAECs and dispersed islet cells (ICs) aiming to improve viability, engraftment and vascularization of the transplanted spheroids. **Material and Methods:** Functional Islet spheroids were generated on 3D agarose-patterned microwells by mixing ICs and hAECs at ratio of 1:1. Marginal mass (150 IEQ) of islet heterospheroids (islet+hAEC group), islet homospheroids (islet-only group) or hAEC spheroids (hAEC alone group) was transplanted under the kidney capsule of diabetic SCID mice. Blood glucose levels were monitored daily and IPGTTs were carried out. **Result:** Mice transplanted with islet heterospheroids exhibited enhanced glycemic control as measured by glucose tolerance, serum insulin/ c-peptide level and diabetes reversal rate, compared with mice in islet alone group. The cumulative percentage of animals reaching normoglycemia was 74% in the islet+hAEC group versus 26% in the islets-alone group. The median time to reverse hyperglycaemia for islet+hAEC grafts was 5 ± 0.9 days and 30 ± 7 days for islet-alone recipients ($p < 0.0001$, $n = 26$). Between groups, the morphology of islet grafts showed significant differences in size and composition of grafted endocrine tissues. A two-fold increase in graft revascularization was seen in islet + hAEC grafts, which was mainly attributed to stimulating vascular endothelial growth factor-A (VEGF-A) production. The rapid revascularization led to improved graft perfusion and recovery from hypoxia. **Conclusion:** These data indicate that hAECs may have a significant potential to protect islet cells and may be employed to improve islet cell survival and function prior to transplantation.

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Shielding Islets With Human Amniotic Epithelial Cells Protects Islets Against Hypoxia And Enhances Islet Engraftment And Revascularization After Transplantation In A Murine Diabetic Model.

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Background: Hypoxia is a main cause of considerable islet loss during first days after intraportal transplantation. Human amniotic epithelial cells (hAECs) gained great interest in regenerative medicine due to their availability, safety, regenerative, immunomodulatory and anti-inflammatory properties. The aim of this study was to investigate whether covering of islets with human amniotic epithelial cells (hAECs) improve islets survival under hypoxic conditions in vitro, as well as islet engraftment and survival in vivo. **Material and Methods:** Shielded islets were generated on microwells by mixing islets and hAECs at ratio of 1:800 (800 hAECs per islets). The ability of hAECs to adhere to human islets was analyzed by confocal microscopy. Engineered shielded islets or neat islets were cultured under normoxic and hypoxic conditions for 16 h. For all conditions, cell viability and islet function were assessed by static insulin release in response to glucose in vitro. Next, 1200 shielded or neat islets were transplanted under the kidney capsule of diabetic SCID mice. Blood glucose and weight were monitored regularly. Intravenous glucose tolerance test was performed 1 month after transplantation. Graft morphology and vascularisation were evaluated by immunohistochemistry. **Result:** Islets shielded with hAECs had greater cellular insulin content and increased glucose-stimulated insulin secretion. Transplantation of shielded islets resulted in considerably earlier normoglycemia and vascularization, improved glucose tolerance, and increased insulin content. **Conclusion:** Co-transplantation of islets with hAECs had a profound impact on the remodelling process, maintaining islet organisation and improving islet revascularisation. Moreover, hAECs improved the capacity of islets to reverse hyperglycaemia.

1061

Impact Of Ischemia Time On Islet Isolation Success And Post-Transplantation Clinical Outcomes : A Retrospective Study On 452 Pancreas Isolations

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Background: Many variables can affect the islet isolation process including ischemia time (IT) of the pancreas before the initiation of isolation procedure. In our laboratory, a total ischemia time (TIT) of <8hours is considered optimal and TIT between 8 and 12 hours is acceptable but considered suboptimal. We investigated the impact of IT on isolation success and post-transplantation clinical outcome. **Material and Methods:** A retrospective analysis of all islet isolations performed in our center between 2008 and 2018 was done. Cold ischemia time (CIT), organ removal time (ORT) and TIT (CIT + ORT) were analyzed. Variables related to donors and organ procurement in successful and failed islet isolations and clinical outcome after transplantation were evaluated. **Result:** 452 pancreata met the inclusion criteria. 218 pancreata were successfully isolated and transplanted. No difference was founded in term of number of grafted islet preparations, number of islet equivalent (IEQ), viability and islets function between the >8 hours group and the < 8 hours group. Pre and post-transplantation HbA1c, C-peptide values and insulin requirement were compared between the two groups and no statistic difference was founded. The same observation was made for CIT and ORT. **Conclusion:** This study showed no difference in term of islet isolation success and post-transplantation clinical outcome between groups with <8 hours of TIT and >8 hours. IT should always be as short as possible but cut off for TIT can be pushed until 12 hours. This must be taken into consideration when IT during organ procurement may become a limiting factor for pancreatic removal.

Free paper session: Cardiac surgery

949

Simple Method For Explantation Of Percutaneous Large-Bore Venous Cannulas

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Background: The large-bore venous cannulas are used for peripheral Extra-Corporeal-Membrane-Oxygenator (ECMO) implantations. Although the percutaneous implantation technique is standardized by Seldinger method, there are different alternatives used to close the venous access at the end of ECMO support i.e. local compression, surgical approach and direct vein suturing or percutaneous suturing by vascular closure systems. Here we report the results of our simple technique for closure of large-bore percutaneous venous access following ECMO weaning. **Material and Methods:** The above mentioned technique based on a cutaneous horizontal mattress stitch made by a large needle poly-filament suture (Vicryl-1CT) which passes around the venous line entry point before explantation. Following the ablation of the venous cannula, this stitch is tied gently and the cutaneous cut is closed by two intradermal absorbable stitches for better skin healing. The horizontal mattress stitch left on place for 48 hours. **Result:** This technique is used in our Division on 23 consecutive patients who had percutaneous ECMO implantation (venous cannula size-25 French for 22 patients and 23 French for one patient). All patients were therapeutically anticoagulated at the moment of ablation, 8 patients were therapeutically anticoagulated even after decannulation. Six patients had dual anti-platelet treatment because of coronary stent implantations. We reported no complications (bleeding, infection, pseudo-aneurysm formation, or complicated wound healing). **Conclusion:** Closure of percutaneous venous access following ECMO weaning by using of horizontal mattress stitch is safe and effective method despite having perioperative antiplatelet and anticoagulant treatments. This technique gives a perfect wound healing without adding additional costs and by preventing the possible complication related with venous line explantation.

1020

Assessment Of The Quality Matters! Transit Time Flow Measurement (Ttfm) Is A Must For Coronary Artery Bypass Operations

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Background: Although coronary angiography is a gold standard for checking permeability of coronary bypass grafts (CBG), this technique isn't routinely used perioperatively because of technical difficulties and lack of setups in non-hybrid operating rooms. Transit-time flow measurement (TTFM) is a quality assessment method which is recommended by international guidelines for intra-operative checking of CBG permeability. We present a case that highlights the importance of routine TTFM for all coronary bypass operations. **Material and Methods:** We present the case of a 65-year old male known for dyslipidaemia and family history admitted for NSTEMI. Elective coronary angiography showed severe stenosis of LAD. Surgical treatment was chosen following Heart Team discussion. Although first TTFM showed normal values (PI <1.0) on LIMA anastomosed on LAD, following measurements of TTFM after aortic declamping were alternant and mostly pathologic (PI >5.0). Based on suspicion of competitive flow secondary to non-severe LAD stenosis, immediate post-operative coronary angiography was performed and showed patent LIMA-LAD anastomosis. Antegrade LIMA bypass graft flow was obstructed by a mid-vessel focal lesion, most likely due to a bend/torsion/dissection or focal vessel wall hematoma. Heart Team decision was to perform percutaneous coronary intervention with drug eluting stent of LIMA, resulting in normalization of coronarographic flow. **Result:** Based on suspicious TTFM results, acute LIMA occlusion was quickly diagnosed and treated thus preventing repeat operation. Further clinical evolution was uneventful. **Conclusion:** This case highlights the importance of routine intraoperative quality assessment by TTFM during CABG operations.

1070

Surgical Treatment Strategies For Coronary Artery Disease; Bilateral Internal Mammary Artery (BIMA) Use By Off-Pump Techniques

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Background: Myocardial revascularization is one of the major treatment options and the prognostic benefits critically depend on the completeness of revascularization. Therefore, the ability to achieve complete revascularization is a key issue when choosing the appropriate treatment strategy. **Material and Methods:** Individual operative risk and technical feasibility, diabetes mellitus and the anatomical complexity of coronary artery disease determine the relative benefits of percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG). The decision about the case whether PCI and CABG must be consulted by Heart Team to develop individualized treatment concepts, with respect for the preferences of the patient. **Result:** Between 2015-2018, 278 patients had Off-pump CABG with full arterial revascularization and 192 was operated with no aortic touch technique. Bilateral internal mammary artery (BIMA) was used in 32% of these patients. **Conclusion:** Off-pump surgery with no-touch aorta for patients should be considered when expertise exists with multiple arterial grafting techniques using the bilateral internal mammary artery and radial artery.

1068

Calculation Of Logistic Euroscore-Ii By Different Observers Is Trustable? Assessment Of Inter-Rater Reliability

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Background: The European System for Cardiac Operative Risk Evaluation (EuroSCORE-II) is a risk model which is routinely used to assess the in-house mortality risk in cardiac surgery. This study assess retrospectively observer dependent reliability of the EuroSCORE in a single center experience. **Material and Methods:** Inter-rater EuroSCORE variability was assessed retrospectively by asking 12 medical practitioners to calculate the logistic EuroSCORE-II of 5 patients. Each examiner was blinded from each other. The results are collected independently. The statistical analysis of the calculated EuroSCORE-II was done using SPSS version 25.0. Intra-class correlation coefficient was used for the assessment of inter-rater reliability. **Result:** The mean EuroSCORE-II $\pm$ standard deviations with minimum and maximum values are described as follows: Patient 1: 4.6 ± 2.3 (1.3- 8.8), Patient 2: 8.0 ± 3.6 (3.2- 14.4), Patient 3: 4.4 ± 3.7 (1.6- 14.7), Patient 4: 4.5 ± 3.3 (1.5- 14.1), Patient 5: 3.8 ± 1.6 (1.4- 6.9). The inter-rater reliability coefficient is calculated at 0.719. The lower and upper bound coefficients were 0.108- 0.967, respectively. **Conclusion:** The inter-rater reliability of the retrospectively assessed logistic EuroSCORE-II calculation by different observers shows an unexpectedly large variability. The measured reliability coefficient (0.719) with a very large ranges (0.108- 0.967) is not acceptable for EuroSCORE-II which is a system designed to precisely calculate the intra-hospital mortality independent of the observer opinion. The next step of our study is to find the confounding factors which created the low reliability secondary to variable calculations.

1001

Superficial Sternal Wound Infections And Posthorax Vest In High Risk Patients Post Cardiac Surgery

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Background: Postoperative infective complications represent a major cause of morbidity and mortality in high risk patients undergoing cardiac surgery. Their consequence is a high treatment costs - prolonged hospital stay, greater consumption of antibiotics, revision surgery, community care of the wound. Based on clinical studies with over 10,000 patients Posthorax Vest showed a reduction in sternal wound infection, improved mobility, faster recuperation, better pain control. Posthorax vest produces anteroposterior pressure and prevents separation of the fractured bone, stopping over-extension of the thorax. The aim of the study is to determine the incidence of sternal wound infections in high risk patients having Posthorax vest administered post cardiac surgery. **Material and Methods:** This is a retrospective analysis of patients who underwent CABG mainly between January 2016 - August 2018. Local electronic records were used to collect the data. The primary variables analysed: BM>30, DM, redo-sternotomy, frailty, administration of the Posthorax Vest on D1 postoperatively, and the incidence of SWI. A secondary variable was pain control post administration. **Result:** There were 22 patients identified who had the Pothorax vest administered mainly within the first days postoperatively. There was only one superficial wound infection identified and the pain was better controlled within our cohort. 45% of the patients had a BMI >30, 59% had DM, 14% being smokers. **Conclusion:** We recommend the prescription and administration of Posthorax Vests within the first 24 post surgery with an increased education on the Posthorax Vest amongst ITU, physiotherapists, junior doctors, and larger sample of patients to be re-audited in the next 6/12.

932

A Comparison Study Between Onx And Other Mechanical Valves Regarding Outcomes And Levels Of Inr

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Background: The aim of this study was to compare the new ONX valve with the other mechanical valves used and in particular the level of anticoagulation using the INR level post discharge. **Material and Methods:** We studied mechanical aortic valve replacement patients (n=184) between Jan 2012-Jan 2017. The first group had 38 ONX valves and the second had 146 patients with other types of mechanical aortic valves replaced. Patients have been analysed for their characteristics on operative and ITU stay and in-hospital mortality. The mean value of INR has been analysed pre-discharge and 3 months after discharge to assess if there was any difference on the level of anticoagulation between the two groups. **Result:** There was significant difference on CPB time and aortic cross clamp time with p value <0.001 and significant difference on the hospital LOS between the two groups. The mean value of the INR pre-discharge showed no statistical difference between the two groups p<0.17. However, after 3 months the mean value of the two groups was statistical significant with a p value of p<0.001 with a mean INR value on the ONX valves group of 1.9 and on the second group with the other mechanical valves of 2.6. **Conclusion:** Our study confirms that ONX are safe valves to use in young patients and with low INR level. After 3 months the INR of the ONX valves was lower in comparison of the other mechanical valves. This respects the education of the units on the new valves of the market on the safe anticoagulation-targeted levels.

1062

Valve Sparing Root Replacement With Mini Sternotomy (Mini David Procedure) Is Feasible Even With Minimal Resources. The Amazing Efforts Of Team Work In Vietnam.

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Background: David procedure is a method of replacing the aortic root while sparing the aortic valve. Tirone David developed the technique at the Toronto General Hospital. Patients with aortic regurgitation or an aortic aneurysm are often candidates for a David procedure. The David procedure can also be beneficial for those with Marfan syndrome. In this video we describe a case of a David procedure done with a mini-sternotomy approach in a patient with aortic root aneurysm in Vietnam with limited resources **Material and Methods:** A 23-years old Vietnamese patient complained of some shortness of breath and occasional chest pain on exertion. After an echocardiogram and a CT of his aorta an ascending aorta and root aneurysm has been diagnosed with intact aortic valve but with aortic regurgitation due to the dilatation of the annulus. He underwent a mini sternotomy valve sparing aortic root replacement and he had a favourable outcome with no complications. Despite the lack of resources, the local team and the external team that join the mission worked well together and gave an optimal result. **Result:** The patient had a very favourable outcome with not significant pain post operatively and a minimal scarring of 5cm. The immediate TOE investigation showed a competent valve. The patient discharged home in day 5 and had a repeat ECHO in 6 months that showed an optimal result post operatively. **Conclusion:** Mini sternotomy David procedure is feasible even with limited resources. Teamwork and specialist deliver of knowledge of aortic surgery to developing units can give amazing outcomes despite limited resources.

928

Predictors Of Length Of Stay And Duration Of Tracheal Intubation After Transcatheter Aortic Valve Implantation.

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Background: There is a lack of data regarding the predictors of short - term outcomes for patients undergoing transcatheter aortic valve implantation (TAVI), despite extensive study of surrounding short term outcomes. This study aims to identify predictors of outcomes such as: duration of postoperative intubation and in-hospital mortality, intensive care unit (ICU) and in-hospital length of stay (LOS), post TAVI procedures. **Material and Methods:** A retrospective cohort study of 162 consecutive patients with aortic valve disease was conducted over a five-year period. The patients were admitted for TAVI in a Liverpool tertiary centre. The data was collected using a hospitals database in November 2014. **Result:** By using a multivariate analysis we found that any postoperative bleeding [odds ratio (OR) 2.71; 95% confidence interval (CI): 1.41-5.24] was the independent predictor of prolonged ICU-LOS, while older age (OR 1.11; 95% CI: 1.05-1.17) and transapical TAVI (OR 4.11; 95% CI: 1.94-8.71) were the predictors of prolonged in-hospital LOS. Additionally, patients treated with oral inotropic agents, preoperatively (OR 5.77; 95% CI: 2.21-15.01), non-diabetics (OR 3.07; 95% CI: 1.12-8.42) and those with any postoperative bleeding (OR 3.53; 95% CI: 1.68-7.43) had a significantly greater probability in remaining intubated postoperatively. The multivariate analysis did not reveal any predictor of in-hospital mortality **Conclusion:** It is possible to identify early particular subsets of TAVI patients who are at high risk of longer hospitalization and increased rates of mechanical ventilation, using the above predictors. This may allow more efficient patient care planning, as well as better allocation of healthcare resources.

1015

Video Presentation - Contained Left Ventricle Free-Wall Rupture By Pericardial Adherences

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Background: Left ventricular free wall rupture(LVFWR) is a rare, mechanical complication of myocardial infarction. It's very rare for a patient with LVFWR to arrive hospital with stable conditions if the rupture includes whole layers of the heart. **Material and Methods:** 57 years old male patient admitted to our Emergency Department with retrosternal pain and weakness. He was hemodynamically stable. NSTEMI diagnosis was made by Troponin-T elevation and Q waves on inferior wall derivations. A trans-thoracic echocardiography highlighted a 10mm LVFWR with localised pericardial effusion and estimated left-ventricular ejection fraction(LVEF) as 40%. His medical history was relevant for high velocity road accident involving massive chest trauma with myocardial contusion and multiple rib and sternal fractures. Following Heart-Team discussion, the patient is transferred directly to the operating room. It was surprising to find important pericardial adherences which was secondary to left pleura-pericardial connection and hemo-pericardium in the past. Heart perforation was localised on the lateral wall and closed by two Teflon-strips and covered with a bovine-pericardial-patch. A coronary angiography is performed following his operation which showed stenosis on the left anterior descending and first diagonal arteries and successfully treated by implantation of 3 drug-eluting stents. **Result:** Postoperative evaluation was favourable and the patient was discharged two weeks following surgery. LVEF was protected and equivalent to the preoperative value. **Conclusion:** Stable arrival of the patient following full thickness LVFWR is extremely rare. Most probably, his past road accident was his life saver today by keeping the free bleeding of LVFWR as controlled secondary to strong pericardial adhesions. Video presentation.

Free paper session: Colorectal surgery

1032

Complete Mesocolic Excision With Central Vascular Ligation Comparing Robotic And 3D-Laparoscopic Right Colectomy: A Case-Matched Study.

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Background: AIM: To describe our preliminary experience in complete mesocolic excision (CME) with central vascular ligation (CVL) for right colon cancer comparing the robotic and the 3D laparoscopic approach. **Material and Methods:** We performed a retrospective observational clinical cohort study on patients who underwent radical curative surgical resection of right colon cancer with CME from January 2014 to April 2018. Propensity scores were calculated by bivariate logistic regression, including the following variables: age, BMI and size of tumor. **Result:** Twenty-eight patients underwent CME with CVL: 20 by means of robot-assisted surgery and 8 by means of 3D laparoscopic procedure. There were not statistically significant differences about all the intra- and post-operative outcomes (operative time, length of the specimen, time to bowel canalization, time to soft oral intake, length of hospital stay, post-operative complication, number of retrieved lymph nodes, number of positive lymph nodes and lymph node ratio) between the robotic and the 3D laparoscopic approach. After the matching procedure, 13 patients of the robotic group and 7 patients of the 3D laparoscopic group were selected for the analysis. There were no differences in any of the analyzed variables between the two groups. **Conclusion:** The 3D laparoscopic approach allowed a safe and effective right colectomy with CME, providing short-term outcomes similar to the robot-assisted same procedure. The 3D vision revealed an important advantage in order to achieve the correct identification of surgical anatomy. Taking into account the high costs of robotic procedure, the 3D laparoscopic approach must be preferred in performing right colectomy with CME.

1028

Is Robotic Assisted Surgery Useful In The Treatment Of Chronic Sigmoid Diverticular Disease? A Preliminary Single-Center Experience.

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Background: Diverticular disease of the sigmoid colon (DDSC) is a benign disease with potential lethal complications. Robotic-assisted surgery has recently widespread and gained enthusiasm for application in malignant colorectal disease. This study aims to evaluate the safety and feasibility of using the da Vinci® robotic system for the surgical treatment of DDSC in a preliminary experience regarding 20 consecutive patients. **Material and Methods:** Between November 2016 and October 2018, a robotic-assisted rectosigmoid resection (RARR) for diverticulitis was performed in 20 consecutive patients. Demographic data were assessed. Our main outcome measures included operative time, blood loss, transfusion rate, conversion rate, hospital length of stay, complications, and readmission. **Result:** RARR was performed in 8 females and 12 males with diagnosis of recurrent diverticulitis and/or diverticular stenosis. The mean patient age was 57.4 years (range = 33-84 years). The mean operative time including docking was 281 min (range = 190-400 min). A primary colorectal anastomosis was fashioned in all cases. Significant intraoperative complication was bleeding for spleen injury requiring conversion to open surgery in 1 patient (5%). The length of hospital stay was 8.1 days (range = 6-14 days), and postoperative complication rate was 5% (n = 1, wound infection). There were no secondary surgical interventions, or hospital readmissions. **Conclusion:** RARR seem to be a safe and feasible option for DDSC surgery. Better visualization and articulated instruments may offer an advantage in dissecting hard and inflamed tissues in the abdomen and pelvic, allowing a comfortable postoperative recovery.

1027

The Parameters Of Affecting Survival In Patients Who Underwent Surgery With Diagnosis Of Rectum Cancer

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Background: Colorectal cancer is the third most common cancer and more than 1 million people are diagnosed with colorectal cancer every year in the world. Approximately 1/3 of colorectal cancers are rectum cancer. While 5-year relative survival rates in colorectal cancer are 73%, the 10-year rate decreases to 66%. In our study, we evaluated the effects of clinicopathological features on survival in patients with rectal cancer. **Material and Methods:** In this study, the patients who operated in our center with diagnosis of rectal cancer between January 2008-December 2013 were retrospectively examined. The patients with noncurative palliative resection were excluded from the study. We evaluated the patient's laboratory and radiological findings, neoadjuvant and adjuvant therapy results, operations data, histopathological findings of the materials and postoperative observations. **Result:** 70 patients were analyzed (30 female, 40 male). Before the operation the median CEA value was 3 (0-215)IU/ml. While 57 patients were performed with open surgery, 30 patients went to laparoscopic surgery. Fifteen patients (21%) was performed anterior resection, 51 patients (73%) low anterior resection and 4 patients (6%) abdominoperineal resection. The six patients (6%) were evaluated as stage 0, seven patients (10%) as stage 1, 22 patients (32%) as stage 2, 26 patients (37%) as stage 3 and 9 patients (13%) as stage 4. The the median survey was 27 months (0-58). **Conclusion:** The single variable analyses on the survey was appeared that; the phase of the tumors, preoperative CEA and CA19-9 values, being elective surgery and the number of methastatic lenf nodes were significant to overall survey.

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Outcomes Of Surgery Following Chemoradiotherapy For Anal Cancer: A 10-Year Retrospective Study

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Background: Anal cancer accounts for less than 1% of all cancers but carries considerable morbidity and mortality. We reviewed clinicopathological outcomes for patients undergoing surgery following chemoradiotherapy (CRT) for anal cancer. **Material and Methods:** A retrospective review of casenotes from patients undergoing surgery for anal cancer from 2008 -2018 was performed. Patients were identified from the anal cancer MDT records and the departmental surgical logbook. **Result:** Forty patients were identified with a median [IQR] age of 62 [18.25] years. Out of them, 11.1% were T1, 47.2% T2, 13.8% T3 and 27.7% T4. Indication Number Median (IQR) time from completion of CRT to surgery (months) R0 Rate Residual disease 6 (15%) 6.4 (4.5) 6 (100%) Recurrent disease 34 (85%) 14 (12) 22 (64.7%) Total 40 (100%) 12 (11) 28 (70%) Twenty five patients (62.5%) underwent flap reconstruction of the perineum. Post-operative complications were identified in 25 (62.5%) patients, 18 (72%) of which were Clavien-Dindo I-II and 7 (18%) were III-IV. There was one 90-day mortality. The overall 1, 3, and 5-year survival was 76.4%, 47.8% and 35.2% respectively. Survival was significantly lower in R1 resection margin (p=0.01), but no difference was found between residual or recurrent disease (p=0.98) or with respect to T stage (p=0.71) **Conclusion:** Chemoradiotherapy remains the gold standard for the treatment of anal cancer, with salvage surgery reserved for cases of residual or recurrent disease, or for palliation. We report a median time from completion of CRT to surgery of 12 months, an R0 resection rate of 70%, and 5-year survival of 35.2%.

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Risk Of Colorectal Cancer In Patients With Acute Diverticulitis: A Systematic Review And Meta-Analysis Of Observational Studies

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Background: The aim of the present systematic review and meta-analysis was to gather, interpret and analyse the literature assessing the prevalence of colorectal cancer in patients with acute colon diverticulitis. **Material and Methods:** MEDLINE was searched until November 2nd, 2017. Studies reporting the prevalence of colorectal cancer in patients with diverticulitis were identified. Pooled prevalence was obtained by using random effects models and its robustness tested by sensitivity analyses. Heterogeneity was assessed using the Q-test and quantified using the I² value. **Result:** Out of 449-screened studies, thirty-one were included, accounting for 50'445 patients. The pooled prevalence of colorectal cancer was 1.9% (95%CI: 1.5-2.3%). Patients with complicated diverticulitis were significantly more at risk of having colorectal cancer (prevalence: 7.9%, 95%CI: 3.9-15.3%) than those with uncomplicated diverticulitis (prevalence: 1.3%, 95%CI: 0.1-2%), corresponding to a pooled prevalence ratio of 6.7 (95%CI: 2.5-18.3). The pooled prevalences of polyps, advanced adenomas, adenomas and hyperplastic polyps were, respectively, 22.7% (95%CI: 19.6-26.0%), 4.4% (95%CI: 3.4-5.8%), 14.2% (95%CI: 11.7-17.1%) and 9.2% (95%CI: 7.6-11.2%). **Conclusion:** The pooled prevalence of colorectal cancer was 1.9%. The risk of colorectal cancer was markedly higher in patients with complicated diverticulitis than those with uncomplicated diverticulitis.

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Activation Of Nur77 Receptor Attenuates Dysregulated Inflammation In Colorectal Cancer

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Background: Inflammatory processes are pivotal pathogenic factors in colorectal cancer. NR4A1 receptors are emerging as regulators, concurrently repressing pro-inflammatory processes while activating resolution pathways. Whether this could improve cancer-related immune dysregulation is unknown. **Material and Methods:** Tumour and normal control tissue (n=20) obtained from patients undergoing colorectal resection were exposed to a NR4A1 agonist (Cytosporone B (CsnB) 4-100μM) ex-vivo. The supernatant was collected and RNA was extracted from tissues at 8 hrs. A cytokine/chemokine array was used to examine 104 secreted proteins associated with tumour inflammation, angiogenesis, fibrosis and growth factors. Quantitative enzyme-linked immunosorbent assay (ELISA) and qRT-PCR were used. Viability studies were performed on colorectal cancer cell lines for toxicity experiments. **Result:** Cytokine/chemokine array analysis revealed 50/104 were increased in tumours including inflammatory (IL-8, TNF-α), angiogenic factors (angiopoietin 1, vascular endothelial growth factor), and growth factors (fibroblast growth factor 7, leukemia inhibitory factor). Of those, 30/50 were repressed by ≥ 50% by the NR4A1 agonist. Multiple targets identified from the array were confirmed using quantitative ELISA and/or qRT-PCR including cytokines (e.g. IL-8, TNF-α, IL-23, IL-6), and chemokines (e.g. CCL3, CCL4, CCL20). Viability studies confirmed that CsnB is non toxic. **Conclusion:** Activation of an orphan nuclear receptor (NR4A1) represses pro-tumourogenic mediators such as cytokines, chemokines, growth factors, and angiogenic factors.

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High Tie Vs Low Tie Of Inferior Mesenteric Artery – The Debate Continues

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Background: The level of arterial ligation for colorectal cancer surgery continues to be a matter of debate. The aim of the study was evaluate whether level of Inferior Mesenteric Artery (IMA) ligation led to post-operative complications, development of new positive lymph nodes (LN) on post-op imaging and development of distant metastasis and thereby survival. **Material and Methods:** A retrospective study of all left-sided colonic cancer resections undertaken in a single centre between April,2015 and March,2018 was undertaken. Length of IMA was measured from pre-op CT scan from root of aorta up to first branch. Level of ligation of IMA was defined as post-operative length of IMA <20mm as high tie and rest were low tie. Subset analysis was done on the high tie vs low tie groups. P value of < 0.05 was considered significant. **Result:** 147 patients (median age 70 (29-73); M=87) underwent left sided cancer resections. The subset analysis is presented below : High Tie (n= 76) Low Tie (n= 71) P value Post-op complications N=4 N=5 0.73 Lymph node yield 23 (9-84) 19 (4-54) 0.047 Pre-op LN positive on CT n=12 n=19 0.08 Post-op positive on Histology n=37 n=26 Apical LN positive n= 3 n= 3 P=ns Local LN recurrence n= 13 n= 7 Local recurrence n= 3 n= 6 Distant metastasis n= 8 n= 5 Survival N=74 N=67 **Conclusion:** There were no demonstrable improved survival outcomes between the two groups, however this study cohort has a shorter follow-up. High tie of IMA improves lymph node yield and thereby nodal staging.

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Prognostic Factors In Colorectal Carcinomas Arising In Polyps: The Expression Profiles Of Lncrnas

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Background: Colorectal adenoma polyps are considered early precursor lesions for cancer. Although some potential clino-pathological markers such as size, grade of dysplasia have been identified for formation of malignancy, the current knowledge is insufficient to predict which polyp to turn into tumor. An increasing number of studies have focused on the role of long noncoding RNAs (LncRNAs) in tumor progression. The aim of this study was to identify the expression profiles of LncRNAs and determine specific biomarkers that could provide novel predictive prognostic biomarkers in Colorectal polyps. **Material and Methods:** In the study, 87 colorectal polyps (43 high-grade dysplasia, 44 low-grade dysplasia) and 20 normal colon tissues were included. Fifteen individual LncRNAs, were analyzed using a real-time quantitative reverse transcription polymerase chain reaction (RT-qPCR) system. **Result:** Of the 87 patients, 48 were men and 39 were women. All patients underwent polypectomy. During the follow-up period 16 polyps returned to adenocarcinoma (high-risk group). The expression of MALAT1 and CCAT1 were over expressed in high-risk group (16 polyps) compared with others (P= 0.0132, P= 0.0341; respectively). Using a multivariate Cox regression model, we also showed that the upregulation of MALAT1, polyp size (>2 cm) and localization of rectum were associated with formation of adenocarcinoma (P<0.05). **Conclusion:** Predicting malignancy potential is crucial when choosing the best strategy in the treatment of stage colorectal polyps. Although, more clinical validations are needed to stratification of adenocarcinoma-risk in colorectal polyps, our current results indicate that high expression levels of may help to clinicians in these precursor lesions.

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Liquid Biopsies In Digestive Cancerology

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Background: Despite curative treatment, 30 to 50% of patients treated for colorectal cancer develop a recurrence within the first 3 years of follow-up. Their treatment is based on chemotherapies, targeted therapies and if possible, on surgery resection. Recurrences detection is based on the monitoring program recommended by HAS/INCA, during the 5 first years after initial treatment to any patient who can support a complementary treatment. During this follow-up, the rate of false positive tests would reach 87%. Considering that less than 10% of patients with a recurrence can benefit from curative treatment and that even if intensive surveillance programs improve the rate of curative resection without influencing mortality rate, personalized monitoring, both less expensive and less time-consuming, seems indispensable. **Material and Methods:** The breakdown of normal or tumor cells in the body releases into the blood DNA fragments, called circulating DNA or DNAcirc. The tumor origin of the detected DNAcirc is confirmed by the level of circulating DNA, corresponding to DNA fragments in the extracellular medium, which rise in patients with CRC. Detected using the IntPlex® technique, they could become a useful biomarker for prognosis and patient follow-up. **Result:** The main objective is to evaluate the prognostic value of tumor circulating DNA analysis at inclusion in early detection of recurrence at 3 years in patients treated curatively and followed for a stage II or III CRC. The inclusion closed in October 2018 and results will be in 3 years. **Conclusion:** Liquid biopsies seem an indispensable tool in the future in terms of prognosis, surveillance and theranostics.

Free paper session: Experimental research

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Identification Of Previously Unidentified Mitochondrial Effects Of Surgical Antibiotic Prophylaxis

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Background: Antibiotics have many benefits but may also affect the functioning of host cells. Ceftriaxone and rifaximin are first choice preoperative prophylactics in gastrointestinal (GI) surgery and we hypothesized that beyond targeting bacteria, these antibiotics may disturb mitochondrial respiration, and therefore the homeostasis of the GI mucosa. **Material and Methods:** We have investigated the impact of single or combination treatments on isolated rat liver mitochondria incubated with clinically relevant doses of antibiotics (25-2500 µg/ml ceftriaxone and/or 5-500 ng/ml rifaximin). The complex II-linked oxygen consumption (state II), the oxidative phosphorylation capacity (OxPhos), the leak respiration and hydrogen peroxide production was detected by high-resolution respirometry (O2k, Oroboros, Austria). Thereafter Sprague-Dawley rats (n=12-12) were treated with 12 mg/kg ceftriaxone and 10 mg/kg rifaximin for 3 days. Laser-scanning endomicroscopy (LSEM) was applied for in vivo histology, colon and liver biopsies were obtained for mitochondrial respirometry, and samples were taken for microbiological analysis. **Result:** Both compounds impaired in vitro dose-dependently the state II respiration (from 130±12 pmol/ml/s to 90±11 pmol/ml/s and 58±19 pmol/ml/s after 500 ng/ml rifaximin and 2500 µg/ml ceftriaxone, respectively), while mitochondrial OxPhos was decreased by ~50%. The combined in vivo treatment efficiently reduced the number of anaerobic bacteria but the production of hydrogen-peroxide increased significantly in epithelial mitochondria, while LSCM demonstrated edema formation, subepithelial loosening and dilated capillaries in the colon. **Conclusion:** These data provide evidence for a previously unknown mitochondrial side-effect of these antibiotics which may be present in clinical conditions as well, and therefore warrants further attention. Supported by NKFIH K120232; GINOP-2.3.2-15-2016-00015; EFOP-3.6.2-16-2017-00006.

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Possible Role Of NADPH Oxidase 4 (Nox4) In Human Chondrogenesis And In Experimental Osteoarthritis In Mice

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Background: Osteoarthritis (OA) is a complex disorder characterized by articular cartilage destruction and associated with an important oxidative stress due to the exposure of reactive oxygen species. Nox are a major source of ROS. The objective of this study is to establish the possible role of Nox4 during human chondrogenesis in vitro and during experimental OA in mice. **Material and Methods:** In vitro, human mesenchymal stem cell (MSC) were pelleted and cultured in chondrogenic medium for 21 days. To mimic inflammatory conditions, IL-1 β was added in culture medium for 4 days. qRT-PCR were performed and expression of target genes was normalized to GAPDH. In vivo, OA was induced by destabilization of the medial meniscus (DMM) in Nox4 knockout mice (Nox4^{-/-}, n=7) and in wild-type littermate (WT, n=7). 8 weeks after surgery, mice were scanned and sacrificed for histology analysis. **Result:** In vitro, we demonstrated that Nox4 is significantly upregulated during chondrogenesis and further increase after IL-1 β stimulation. In vivo, 8 weeks post-surgery, we observed severe cartilage lesions in the WT-DMM mice (OARSI: 2.8±1.2) and moderate lesions in Nox4^{-/-}-DMM mice (OARSI: 1.5±0.5). By micro-CT, modification of the subchondral bone was only observed in the WT-DMM group. **Conclusion:** To our knowledge, these data demonstrated for the first time that Nox4 is the only isoform expressed by human chondrocytes generated in vitro. Moreover, we observed in vivo that Nox4 deficient mice are partially protected from cartilage degradation and subchondral bone modification. Taken together these results demonstrated a key role of Nox4 in experimental OA.

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Platelets Trigger Liver Regeneration Through Interactions With Non-Parenchymal Cells

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Background: Platelets and liver sinusoidal endothelial cells (LSEC) independently regulate liver regeneration. Our aim was to investigate the role of interactions between platelets and LSEC in liver regeneration. **Material and Methods:** Platelets and LSEC interactions were analyzed in vivo by confocal microscopy after partial hepatectomy in mice. Then, pure primary mouse LSEC were co-incubated with increasing concentrations of resting platelets, activated platelets, or platelet releasates, and secretion of growth factors was measured. The active fraction of platelet releasates was characterized and their effect on hepatocyte proliferation assessed. Finally, the conditioned medium of LSEC exposed to platelets was added to primary hepatic stellate cells (HSC) and secretion of hepatocyte growth factor (HGF) was measured. **Result:** Following partial hepatectomy, in vivo adhesion of platelets to LSEC was significantly increased, when compared to sham-operated mice. Co-incubation of increasing numbers of resting or activated platelets with LSEC resulted in enhanced interleukin-6 (IL-6) secretion by LSEC. IL-6 release by LSEC was the highest after incubation with ADP-activated platelets. The effect of platelet releasates on LSEC was similar to that seen with whole platelets. The effect of platelets on LSEC was mediated by a platelet factor, whose action was synergistically enhanced by ADP. The conditioned medium of LSEC exposed to platelets did not increase proliferation of primary hepatocytes when compared to LSEC alone, but stimulated HGF secretion from HSC. **Conclusion:** We showed that platelets adhere to LSEC after partial hepatectomy. Contact between platelets and LSEC leads to IL-6 secretion from LSEC. IL-6 stimulate HSC to release HGF, which is the strongest mitogen for hepatocytes.

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The Effect Of Methane On Hypoxia-Induced Mitochondrial Calcium Homeostasis

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Background: Ca²⁺ overload is common intracellular denominator of hypoxic-ischemic pathologies, leading to the opening of mitochondrial permeability transition pores (mPTP), non-selective Ca²⁺-efflux and apoptosis-mediated cell death. Previous studies have demonstrated anti-inflammatory properties for methane (CH₄), through a possible influence on mitochondrial function. Our aim was to investigate the in vivo effect of CH₄ on mitochondrial Ca²⁺ movements in a standardized model of hypoxemic hypoxia to gain insight into the mechanism of action. **Material and Methods:** Anaesthetized Sprague-Dawley rats were mechanically ventilated for 60 min with normoxic synthetic air (controls; n=7), hypoxic air (16% O₂; n=7) or hypoxic air-methane mixture (16% O₂+2.2% CH₄; n=7). Liver biopsies were taken to measure mitochondrial respiration and Ca²⁺ flux (CalciumGreen-5N) in parallel using high-resolution fluoroimetry (Oroboros, Austria). Endogenous Ca²⁺ release under anoxia and exogenous CaCl₂-stimulated (50 μM) Ca²⁺-fluxes were also determined. **Result:** Ventilation with hypoxic air did not influence the duration of CaCl₂-induced Ca²⁺-flux (efflux: 41±5s vs 39±14s, P<0.05), whereas endogenous Ca²⁺ release was reduced (ΔF/F: 0.135±0.06 vs 0.351±0.06). CH₄ addition to the hypoxic air markedly increased the Ca²⁺ storage capacity, prolonged the duration of Ca²⁺-efflux (to 176±132s) and significantly improved the endogenous Ca²⁺ release (to 0.23±0.08). **Conclusion:** Conclusion: CH₄ inhibits the mPTP-dependent Ca²⁺ efflux and ameliorates the anoxic release of endogenous Ca²⁺. This novel inhibitory effect on mPTP contributes to the preservation of electron transport system function and Ca²⁺ homeostasis under hypoxia. Grant Support: NKFI 120232, the UNKP-18-2 New National Excellence Program of the Ministry of Human Capacities and Szeged Scientist Academy (EMMI, TSZ:34232-3/2016/INTFIN).

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N-Methyl-D-Aspartate Receptor Blockade Ameliorates Cellular Respiratory Function Through The Regulation Of Mitochondrial Calcium Influx/Efflux In A Rat Model Of Polymicrobial Sepsis

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Background: Mitochondrial dysfunction and a deficit in intracellular Ca²⁺ regulation can play decisive roles in sepsis. The N-methyl-D-aspartate receptor (NMDA-R)-mediated increase in intracellular Ca²⁺ level induces excitotoxic neuronal injury, but the relationship between NMDA-R-linked Ca²⁺-influx and mitochondrial function is still unknown. We tested the hypothesis that NMDA-R activity can influence mitochondrial respiration, Ca²⁺-fluxes and membrane potential ($\Delta\Psi_{mt}$) in a rat model of polymicrobial sepsis. **Material and Methods:** Sepsis was induced in male Sprague-Dawley rats (n=9) by fecal inoculum (0.6 g/kg ip), control animals (n=9) were given saline. The specific NMDA-R inhibitor (SZR-72, n=9; 160 μ mol/kg) was administered twice ip. (3h and 22h) then liver biopsies were taken 24h after sepsis induction. Oxidative phosphorylation, the extramitochondrial Ca²⁺-flux (CalciumGreen-5N) and $\Delta\Psi_{mt}$ (Safranin T) were measured from liver homogenates using high-resolution fluorepirometry (Oroboros, Austria). **Result:** Both complex I and II-linked oxidative phosphorylation was markedly decreased (73±16 vs 158±14, and 187±67 vs 328±80, P<0.05), whereas SZR-72 improved ADP-stimulated respiration (117±18 and 445±107) 24h after sepsis induction. Ca²⁺-flux stimulated by CaCl₂ (50 μ M) was markedly increased (influx: 62±15%; efflux: 66±13%) compared to controls (influx: 20±6% and efflux: 27±6%). Titration of CCCP to energized mitochondria lead to the collapse of $\Delta\Psi_{mt}$ at higher uncoupler concentration in NMDA-R-inhibitor-treated

animals. **Conclusion:** Conclusion: The results demonstrate that NMDA-R inhibition affects the electron transport system and ATP synthesis through the regulation of Ca²⁺-influx/efflux. Increased Ca²⁺ storage capacity can be associated with the inhibition of mitochondrial permeability transition pore and delayed $\Delta\Psi_{mt}$ depolarization in experimental sepsis. Grant Support: NKFIH K116689, GINOP-2.3.2-15-2016-00034, EFOP-3.6.2-16-2017-00006.

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Cd26/Dpp4 Is Overexpressed In Experimental Chronic Lung Allograft Rejection And Potentially Qualifies As A Target To Reduce Chronic Rejection

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Background: Chronic lung allograft dysfunction (CLAD) is the major obstacle for long term survival in lung transplant recipients. The transmembrane molecule CD26/dipeptidyl peptidase 4 (CD26) is known to be a surface marker of different fibrogenic stroma formation. Own data show that CD26 is co-expressed with TFG-b1 within the fibrotic stroma compartment of lung tumors. We therefore hypothesize if CD26 is expressed in a CLAD mouse lung transplant model rendering CD26-inhibition as a therapy against fibrosis. **Material and Methods:** We previously developed CLAD lesions in mouse lungs eight weeks after lung transplantation using BALB/c (donors) and C57BL/6 (recipients) under mild immunosuppression. Pro-fibrotic genes including IGF1, MMP9, CXCL9, IL6, and IL13 were analyzed by RT-qPCR. Protein levels of EMT-related genes including Vimentin, Ncadherin, Slug, and Hif1 α were measured by western blotting, and immunohistochemistry (IHC) was employed to assess CD26 in transplants. **Result:** The development of CLAD lesions in mouse lungs was confirmed by a significantly higher expression of the EMT proteins Vimentin, Ncadherin, Slug, and Hif1 α vs. normal lungs (p<0.05). Also, gene expression levels of IGF1, MMP9, and CXCL9 were significantly higher expressed in CLAD-developing lungs vs. normal lungs (p<0.05). In these CLAD lesions, the transmembrane molecule CD26 was significantly higher expressed in IHC vs. normal lungs (p=0.0003). In contrast, gene expression levels of IL6 and IL13 were significantly decreased vs. normal lungs (p<0.0001). **Conclusion:** The increased expression of CD26 in chronically rejected lung allografts suggests that CD26 is a potential target to attenuate the development of CLAD lesions after transplantation.

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Role Of Cd80 In Esophageal Carcinogenesis

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Background: Esophageal adenocarcinoma (EAC) is the final step of a pathway starting with esophageal reflux disease, Barrett's metaplasia and Barrett's dysplasia. The expression of costimulatory molecules such as CD80 in the esophageal cancer tissue is significantly lower than in the normal mucosa of healthy patients. This may be one of the mechanisms of immune escape of cancer cells in esophageal carcinogenesis. The aim of this study was to investigate the role of CD80 in the inflammatory esophageal carcinogenesis and to characterize the immune environment of EAC. **Material and Methods:** Mucosa samples were obtained from cancer during esophagectomy of EAC patients. Fresh biopsies were collected during endoscopy for patient follow-up, after an informed consent was obtained. A murine model of reflux induced esophageal carcinogenesis was replicated by a side-to-side esophago-gastro-jejunostomy. Data analysis was performed using R 3.2.2 and STATA version. Data were presented as median with interquartile range or number of patients with percentage where appropriate. The comparisons among the different step of the carcinogenesis were carried out with Kruskal Wallis ANOVA. P values <0.05 were considered significant. **Result:** The expression of the costimulatory molecule CD80 increased in epithelial cells during metaplasia in the inflammatory esophageal carcinogenesis. CD80 knockout mice as well as WT mice receiving antiCD80 antibodies showed a higher rate of dysplasia and ki67+ cells. **Conclusion:** Our data suggest an active immune surveillance process mediated by the overexpression of CD80 costimulatory molecule on epithelial cells in inflammatory-driven esophageal carcinogenesis.

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Sevoflurane Enhances The Protective Effect Of Ex Vivo Lung Perfusion (Evlp) In Lungs Obtained From Non-Heart-Beating Donors (Nhbd)

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Background: Lungs obtained from NHBD are exposed to harmful stimuli resulting in inflammation, oxidative stress, and apoptosis that could explain the complications observed in these transplants. Ex vivo lung perfusion (EVLP) is a promising modality for the evaluation and treatment of marginal donor lungs. We demonstrated previously that NLRP3 inflammasome activation may lead to lung dysfunction and that EVLP may favor lung recovery. Here, we investigated the effect of inhaled sevoflurane during ex vivo (EV) recovery of NHBD lungs. **Material and Methods:** Left lung transplantation included: A)-Hypoxic cardiac arrest in donor pigs and lung harvest; B)-60min warm ischemia (I) and subsequent 3h cold preservation solution left lung storage; C)-3h perfusion machine EV lung reconditioning (EVL); D)-Recipient pig left pneumonectomy and donor lung transplantation; E)-Lung function assessment during 3h after reperfusion (R); F)-Lung biopsies performed and pigs euthanized. Animals were divided into Group 1: EVL; Group 2: EVL with inhaled sevoflurane; Group 3: same procedure without EVL. **Result:** I/R increased the expression of early inflammatory response enzyme heme oxygenase 1, pro-inflammatory cytokines (TNF α , IL1 β , IL8, IL12, IL18), apoptotic markers (caspases 1 and 3, AIF), NLRP3 and ASC. EVLP significantly reduced these effects (p<0.01). The reduction was even greater with sevoflurane administration (p<0.005). No differences were observed in IL10 (anti-inflammatory cytokine) levels. EVLP blocked the I/R inhibitory effect on Flightless-I (caspase inhibitor 1) and COP 1 (NLRP3 endogenous suppressor) (p<0.05). Again, these EVLP effects were enhanced by sevoflurane. **Conclusion:** EVLP may turn non-viable lungs from NHBD into valid candidates for transplantation. Sevoflurane may enhance this EVLP beneficial effect.

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The Effect Of Trimethazine On Mortality In An Experimental Acute Pancreatitis Model

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Background: Acute pancreatitis has a high morbidity and mortality. Its physiopathogenesis has not been enlightened up to the present. This study aims to investigate trimetazidine (antiischemic, antioxidant and cardioprotective agent) 's effects on the acute pancreatitis. **Material and Methods:** In this study, four equal groups are formed with 43 female Sprague-dawley type rats weighed between 230-300 gr (mean 265 gr) . 0.9% NaCl is injected intraperitoneally after laparotomy to the Group 1 (n=6). Group 2 (n=6) is control group that without any intervention. Acute pancreatitis is formed in Group 3 (n=16) via injection of Na-taurokolat in the common bile duct. Group 4 (n=15) is being formed pancreatitis and treated with Trimetazidine. In group 4 Trimetazidine 10 mg/kg/day drugs were given, 30 minutes, 24 and 72 hours after formation of acute pancreatitis, in three equal doses by orogastric way. In all groups, the rats have been laparatomised 72 hours later under general anesthesia and pancreas tissues has been extracted and studied histopathologically. Amylase, lipase, lactate dehydrogenase, aspartate transaminase, alanine tranaminase levels in the rats serum and superoxide dismutase, catalase, glutathione, malondialdehyde, nitric oxide, protein carbonyl, glutathione peroxidase levels in the rats tissue also have been looked up. **Result:** Serum and tissue findings and histopathologically examination of the pancreas tissues show significant decrease in the treatment group compare to study group. **Conclusion:** Trimetazidine protects pancreas tissue and decreases the mortality by significantly lowering the biochemical and histopathological changes in the early stages of acute pancreatitis.

Free paper session: General surgery

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Artifice In Left Lateral Decubitus Thoracoscopic Esophagectomy For Thoracic Esophageal Cancer

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Background: We introduced thoracoscopic esophagectomy in the left lateral decubitus position, and have improved its maneuvers under the concept that thoracoscopic surgery is an extension of thoracotomy. However, it was difficult to develop the field of view during operation of the lower mediastinum. We would like to see our methods of developing surgical field. **Material and Methods:** The surgery started with the following conditions: patient in the left lateral decubitus position; separated ventilation with blocking balloon; six ports inserted. The operator at the ventral side of the patient operated through the 4th and the 6th ports. The development of the surgical site as effective as that of prone position was achieved by depicting esophageal horizontally in the monitor during the operation of lower mediastinal. During recurrent laryngeal nerve lymph nodes dissection, the operator and the assistant changed their positions. The operation was performed under the field of view as clear as that of thoracotomy by depicting trachea in the monitor vertically during left recurrent laryngeal nerve lymph nodes dissection. **Result:** Of the 84 patients, 67 were male and 17 were female, with an average age of 65 years. The average thoracic part operative time of 229 min. The average blood loss was 233 ml. As postoperative complications, 19 pneumonias and 15 recurrent nerve paralysis were diagnosed. There was no postoperative death. **Conclusion:** Our method is possible to develop surgical field similar to the prone position during operating lower mediastinum. We wish to present this abstract as video presentation.

981

Laparoscopic Splenectomy Video

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Background: Laparoscopic splenectomy, first realized in 1991, has been validated by European guidelines for both benign and malignant diseases. Colorectal surgery, requires deep knowledge of the anatomical structures and relations of the splenic flexure, in order to achieve a safe and complete mobilization. Sometimes, this knowledge is called upon performing laparoscopic splenectomy in an elective setting. This need may arise outside the strict colorectal domain of operations. Examples range from splenic lesions requiring investigation to hypersplenism. Iatrogenic trauma during left colic flexure mobilisation is another possibility, this time in a more urgent fashion. In all cases, the ability to perform a splenectomy without conversion can be very valuable. **Material and Methods:** We present an edited video of a 60 year old patient with no prior surgical or medical comorbidities, in whom we have accidentally found a suspicious lesion that shows size increase in the follow up. An indication for a splenectomy is placed and the video of the operation has been edited and enhanced with anatomical correlations. There is a thorough description of the history, per-op patient positioning and placement of ports, as a step by step guidance to the technique in relation to the anatomy. **Result:** Laparoscopic splenectomy for a follicular lymphoma without any per op complications **Conclusion:** The aim of this video is to provide a thorough and comprehensive description of the different steps of a laparoscopic splenectomy highlighting the different anatomical structures in real time, for training purposes, preferably as a video presentation.

871

Sarcomania? The Inapplicability Of Sarcopenia Measurement In Predicting Incisional Hernia Development

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Background: Incisional hernia is a frequent complication after abdominal surgery. A risk factor for incisional hernia, related to body composition, is obesity. Poor skeletal muscle mass might also be a risk factor, as it may result in weakness of the abdominal wall. However, it remains unknown if sarcopenia (i.e. low skeletal muscle mass) is a risk factor for incisional hernia. Therefore, this study aims to investigate whether a relation between sarcopenia and incisional hernia exists. **Material and Methods:** Patients from the STITCH trial, who underwent elective midline laparotomy, were included. Computed Tomography (CT) examinations performed within 3 months preoperatively were used to measure the skeletal muscle index (SMI; cm²/m²). Primarily, SMI measured continuously, sarcopenia based on previously described cut-off values for the SMI, and sarcopenia as the lowest gender-specific SMI quartile, were assessed as measures to predict incisional hernia occurrence through logistic regression. Secondary, the association between these three measures and postoperative complications was investigated. **Result:** In total, 283 patients (45.2% male; mean age 63.7 years; mean BMI 25.36 kg/m²) were included, of whom 52 (18%) developed an incisional hernia. Mean SMI was 44.23 cm²/m² (SD 7.77). The Nagelkerke value for the three measures of sarcopenia was about 0.020 (2.0%) for incisional hernia development. Logistic regressions with the three measures of sarcopenia did not show any predictive value of the model (area under the curve (AUC) of 0.67 for incisional hernia; 0.69 for postoperative complications). **Conclusion:** In this study, sarcopenia does not seem to be a risk factor for the development of an incisional hernia.

1074

Incidence, Risk Factors, And Prevention Of Stoma Site Incisional Hernias: A Systematic Review And Meta-Analysis

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Background: Stoma reversal might lead to a stoma site incisional hernia. Recently, prophylactic mesh reinforcement of the stoma site has gained increased attention, supporting the need for accurate data on the incidence of and risk factors for stoma site incisional hernia and to identify high-risk patients. The aim of this study was to assess incidence, risk factors and prevention of stoma site incisional hernias. **Material and Methods:** Embase, MEDLINE, Web of Science, Cochrane and Google Scholar databases were searched. Studies reporting the incidence of stoma site incisional hernia after stoma reversal were included. Study quality was assessed with the Newcastle-Ottawa Scale and Cochrane risk of bias tool. Data on incidence, risk factors and prophylactic mesh reinforcement were extracted. **Result:** Of 1440 articles found, 33 studies comprising 4679 reversals were included. Overall incidence of incisional hernia was 6.5%. Eleven studies assessed stoma site incisional hernia as the primary endpoint, showing an incidence of 17.7% [range 1.7%–36.1%, median follow-up 28 (15.25–51.70) months]. Body mass index, diabetes and surgery for malignant disease were found to be independent risk factors, as derived from eight studies. Two retrospective comparative cohort studies showed significantly lower rates of stoma site incisional hernia with prophylactic mesh reinforcement compared with nonmesh controls [6.4% vs 36.1% (P = 0.001); 3% vs 19% (P = 0.04)]. **Conclusion:** Stoma site incisional hernia should not be underestimated as a long-term problem. Body mass index, diabetes and malignancy are potential risk factors. Currently, limited data are available on the outcomes of prophylactic mesh reinforcement to prevent stoma site incisional hernia.

1072

Complications And Recurrence Rate In Patients With A Large Ventral Hernia With Loss Of Domain Treated With Botulinum Toxin A And Preoperative Progressive Pneumoperitoneum: A Case Series Of 23 Patients

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Background: Repair of a hernia with loss of domain in patients with comorbidities remains a challenge for surgeons. Preoperative injection of Botulinum toxin A and progressive pneumoperitoneum are methods to facilitate repair. The aim of this retrospective case series is to evaluate the outcomes of incisional hernia repair facilitated by Botulinum toxin A, preoperative progressive pneumoperitoneum, or a combination of both. **Material and Methods:** Retrospective data extraction from medical records was performed between June 2014 and August 2018 at Ghent University Hospital, Belgium. All consecutive patients were included in the analysis. Basic hernia- and patient characteristics were evaluated, as well as the postoperative complication and morbidity rate. Secondly, the complications related to the preoperative treatment and the recurrence rate were studied. **Result:** Twenty-three patients (48% females) were included. Median age was 65 years (range 28-77 years) and median BMI was 31.4 (range 22.7-38.0 kg/m²). Three patients (13.0%) smoked, and 7 patients (30.4%) had diabetes. With regard to the primary outcome, 16 patients (69.6%) developed 26 surgical site occurrences, surgical site infections being the most frequent (34,8%). Four patients (17.4%) had a hernia recurrence after a median follow-up of 19,1 weeks. **Conclusion:** This consecutive series describes 23 patients with a complex ventral hernia using preoperative Botulinum toxin A injection and progressive pneumoperitoneum. Both techniques seem safe to facilitate closure, but, although anterior fascial closure was possible in all patients, postoperative wound morbidity remains the main challenge.

1065

The Pa.R.C.O.Ur Protocol (Patient Reconvoqué Pour Chirurgie One-Day En Urgence) In The Management Of Deferred Surgical Emergencies At The University Hospital Of Lille

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Background: Increasing efforts are encouraging the development of outpatient surgery (OS). The extension of the OS to abdominal and general emergencies becomes a subject of major interest. When surgery should not be immediate, a night of hospitalization in a specialized environment is performed and surgery deferred overnight. In some selected patients, a return home is possible with a scheduled emergency surgery the next day. The PA.R.C.O.UR protocol is set up in the Surgical Emergencies of the University Hospital of Lille after a suitable medical treatment and enlightened information. This retrospective study assesses whether this deferred surgical management allows a return home on the day of the operation. **Material and Methods:** Between 1/01/2015 and 1/09/2018, 3468 records of patients operated for an abscess, appendicitis, cholecystitis or symptomatic inguinal hernia were reviewed. 321 patients who did not have criteria for immediate surgical management (peritonitis, occlusion, sepsis, cellulitis, intravenous treatment need) agreed to return to their home for an OS the next day. (retrospective observational study) **Result:** 286/89% interventions were performed in OS and allowed a return home at day 0, within a median time of 7 hours [IQR 6-9]. **Conclusion:** The PA.R.C.O.UR protocol makes it possible to reserve the availability of the entire technical platform (operating rooms and beds) to the most serious pathologies with a failure rate of 11%. The medico-economic benefits, the efficiency in the management of the hospital beds and the satisfaction of the patient and medical staff of this protocol must be evaluated prospectively. *MC et JRN contributed equally to this work

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Acute Appendicitis Secondary To Endometriosis Of The Appendix: A Case Series

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Background: To review the clinical presentation, laboratory results, imaging and operative findings of patients subsequently found to have histological evidence of endometriosis of the appendix in a District General Hospital (DGH) between 2016-2018. **Material and Methods:** Ten histological reports containing the search term "endometriosis of the appendix" were identified. Four were excluded as planned gynaecological resections for known endometriosis. The case notes, laboratory and imaging reports of six patients were reviewed. **Result:** In three patients, a 72-hour or less history of right iliac fossa (RIF) pain was present (24-hour or less in two), whereas on two occasions there was a 3-week history of intermittent RIF pain. Three patients reported nausea and vomiting and two were pyrexial. No history of diarrhoea was reported. Inflammatory markers (white cell count-WCC, C-reactive protein-CRP) were raised on three occasions. In five patients, available imaging (CT/USS) was suggestive of an inflammatory process in the right iliac fossa, with principle diagnosis being acute appendicitis, and in one the diagnosis was solely clinical. In all six cases, acute appendicitis was found intra-operatively. The Alvarado score ranged from 4-7. **Conclusion:** Endometriosis of the appendix may present to surgical teams as acute appendicitis. Surgeons should be aware that a longer history of intermittent RIF pain and normal inflammatory markers does not exclude appendicitis secondary to endometriosis. An appendicectomy should be performed, as the aetiology does not appear to otherwise affect the natural history of this condition.

956

Evaluation Of Healing Of Intestinal Fistulas With The Use Of Platelet Rich Plasma Concentrate (Prp)

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Background: Healing of intestinal fistulas is based generally on conservative solutions supported by NPWT / E-NPWT or tissue adhesives. The aim of the study was to evaluate the effectiveness of fistula closure by local application of autologous Platelet-rich plasma (PRP) **Material and Methods:** The study included 21 patients with chronic gastrointestinal fistulas, in whom previous surgical treatment was unsuccessful. The group consisted of 7 patients with perianal fistula, 4. after IPAA with secondary pouch-vaginal fistula, 4. with recto-vaginal fistula and 3. with entero-atmospheric fistula. All patients were given to the fistula channel from 1 to 3 doses of PRP with a volume of 1.5 ml per each. Additionally, in 16 patients, the fistula was pre-treated with a polyurethane sponge (PUR) dressing or NPWT / E-NPWT. **Result:** All patients were observed to rapidly reduce the amount of leak from the fistula and change its character from intestinal to bloody or purulent. Complete closure of the fistula was obtained in 18 cases, of which 6 patients had a fistula recurrence within the next 2 - 4 weeks. Three patients required surgical drainage of the fistula due to abscess formation. In no case allergic or septic complications were observed. **Conclusion:** The effectiveness of closing the fistula with the use of PRP is conditioned by a small amount of leak and sufficient drainage before administration. Described management can be a valuable alternative among other surgical methods, however, further assessment is necessary.

1019

The Results Of Resection And Reconstruction With Composite Dual Mesh In Our Peritoneal Carcinomatosis Patients With Diaphragmatic Involvement

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Background: The combination of cytoreductive surgery (CRS) followed by hyperthermic intraperitoneal chemotherapy (HIPEC) is a treatment that has gained increasing popularity amongst surgical oncologists in our country. Stripping of the diaphragm is often performed during CRS, if diaphragm is involved. However, in cases with full-thickness invasion, resection is recommended. In the current study, we presented our experience from the preliminary results of our patients with full-thickness diaphragmatic involvement who underwent resection and mesh reconstruction. **Material and Methods:** An analysis of retrospectively collected data about our 112 patients who underwent CRS and HIPEC from May 2016 to December 2018 was carried out. The charts of 16 patients who underwent diaphragmatic resection were evaluated in detail. Demographics, preoperative diagnosis, the operative procedures applied and early postoperative results were investigated. **Result:** The mean age of 16 patients (8 women, 8 men) with full-thickness diaphragmatic involvement was 54.5 years (range, 39-61). After standard CRS procedure was performed, 10 of them (62.5 %) underwent partial resection and primary raphy. In these patients, four drains were placed in the abdominal cavity and hipec performed. The remaining 6 patients (37.5 %) who had wider resections were applied composite dual mesh (GORE Dualmesh Biomaterial, Arizona, US). Pneumonia was seen in one patient with dual mesh, and this patient was discharged at postoperative day 45. **Conclusion:** In peritoneal carcinomatosis patients with full-thickness diaphragmatic involvement, where stripping is not possible, resection with secure surgical borders and composite dual mesh reconstruction can be applicable.

Free paper session: Plastic and reconstructive surgery, urology

1003**Management Of Epithelioid Sarcoma**

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Background: Epithelioid Sarcoma (ES), first described by Enzinger in 1979 is rare tumour with an indolent course and a propensity to recur, it is often misdiagnosed and poorly managed. We describe the experience of one UK unit with presentation, management and outcomes of patients with ES as well as pertinent lessons learned. **Material and Methods:** We carried out a retrospective review of patients presenting between 2010 to 2018, with a histological diagnosis of ES who were referred to the tertiary referral unit. **Result:** Patient age range was between 12-24 years with an average time from initial presentation to diagnosis of 26 months. Initial diagnoses were unspecific lump, pyogenic granuloma and recurrent wound infection. Patients were seen by their general practitioner, dermatology, and orthopaedics before referral and definitive treatment by plastic surgery. Despite wide excision, margins were positive in 50% of patients. Even those with clear margins and complex reconstructions had high rates of recurrence (30%). Outcomes were poor, with local and regional recurrence, metastatic spread and death (15%). **Conclusion:** Epithelioid sarcoma has a “deceptively harmless appearance” and is often mistaken for a benign or inflammatory condition. The reduction in funding from CCGs for the excision of so-called benign looking lumps and bumps may lead to a rise in late presentation, and hence timely treatment, of patients who turn out to have an ES. This is a cautionary tale and clinicians should have ES on their list of differential diagnoses, especially the young with a prolonged history of what appears to be an innocuous lump.

984**Negative Pressure Wound Therapy In Pediatric Burn Patients: A Systematic Review**

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Background: Negative pressure wound therapy safety and efficiency are well documented in adults. Data is however sparse on its use in pediatric burns. This study aims, through a comprehensive systematic review, to evaluate evidence supporting NPWT use in burned children. **Material and Methods:** A comprehensive search was conducted with the search terms: “negative pressure wound therapy”, “vacuum assisted closure”, “pediatric”, “burn”. The review is compliant with the Preferred Reporting Items for Systematic Review and Meta-Analysis protocol guidelines. **Result:** We identified eleven articles discussing NPWT use in burned children. The total number of patients was 452. NPWT as initial treatment and as skin graft securing has been shown to produce favorable results. The graft take rate is close to 100% in most of the studies. Rare complications include bleeding, local infections and mechanical device issues. Other benefits for children are the less frequent dressing changes and earlier mobilization. These devices precisely quantify fluid losses and allow adequate fluid resuscitation. **Conclusion:** This versatile technique can be used in 2-months up to 18-years old children presenting deep 2nd to 4th degree burn of different etiology. It can be applied for a few days up to several months, on small up to 40% TBSA, and in difficult locations such as hands and perirectal areas. Use continuous mode with a negative pressure of 50 to 75 mmHg for burned children younger than 2 years, while 75 to 125 mmHg for children older than 2-years. Data gathered provides empirical guidelines on NPWT use in burned children. Prospective randomized studies are needed.

1076

Real-Time Laser Doppler Imaging As A Prognostic Tool In Frostbite Injuries Of The Upper Extremity

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Background: Cold-induced lesions, better known as frostbite lesions, are the result of prolonged exposure of the skin to a low temperature. Various efforts have been made to stage these lesions and to provide early prognostic information, of which Cauchy's classification, using clinical information and technetium bone scanning at day 7, is widely accepted. Recently, Laser Doppler imaging (LDI) has been proposed as a valuable method in the quantification of (micro) perfusion of tissues in burn victims and in the surveillance of free flaps. LDI may also be a valuable prognostic tool in the treatment of frostbite lesions. In this case report, we present the use of LDI in the treatment of a 42-year old patient suffering from frostbite injuries to both hands.

931

Factors Influencing The Surgical Outcome Of Extra-Articular Ankylosis In Noma Patients

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Background: Noma is a devastating gangrenous perioral lesion affecting preschool children in the poorest areas of the world. Beyond large facial defects, extra-articular ankylosis occurs frequently as sequelae. Over twenty years of operating on these patients, we observed high recurrence of mouth opening limitation. We therefore progressively changed our surgical strategy. This study compares the impact of different parameters (types of surgery, noma type, physiotherapy compliance, age and sex) on immediate and long-term mouth opening. **Material and Methods:** This retrospective study includes a series of 121 patients with extra-articular ankylosis operated between 1990 and 2015. Soft tissue reconstruction evolved from local and pedicled flaps to large free flaps. Mouth opening was performed by bone-bridge excision, sometimes associated to contralateral coronoidectomy. Inter-incisive distance was measured and physiotherapy compliance was assessed annually by the local nurses performing the follow-up. **Result:** Mouth opening technique including bilateral coronoidectomy with free flap reconstruction was the only independent factor for significantly better immediate mouth opening with a mean increase of 8.7 mm (95%CI [4.3 to 13.1], $p < 0.001$). This effect was maintained in the 3 years' follow-up. Another positive factor related to long-term results was excellent physiotherapy while noma type 4 was a negative factor. **Conclusion:** Recurrence of mouth opening limitation is at high risk in the management of noma sequelae. If physiotherapy and long-term follow-up by an experienced local team cannot be offered, patients should not be operated, as in case of recurrence oral feeding may get impossible when the facial defect has been reconstructed.

914

Outcomes Following Inferior Gluteal Artery Perforator Flap Reconstruction Of The Perineum After Anorectal Cancer Resection

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Background: Perineal reconstruction following abdominoperineal resection (APR) or extralevator abdominoperineal resection (eAPR) is a major challenge. Perineal wound complication is the leading cause of morbidity and prolonged hospital stay. The aim of this study was to evaluate the outcomes of inferior gluteal artery perforator (IGAP) flap reconstruction of the perineum after anorectal cancer resection. **Material and Methods:** A retrospective review of a prospectively maintained database for all consecutive patients who underwent IGAP flap reconstruction of the perineum after anorectal cancer resection between June 2013 to Nov 2017 in a single unit was undertaken. Data was collected on demographics, length of operation, complications (general and flap related), length of hospital stay, 30 and 90 day readmission. **Result:** 21 patients underwent immediate IGAP flap reconstruction after anorectal cancer resection (15 rectal adenocarcinomas and 6 anal squamous cell cancer). 14 patients were male. Mean age was 63.8 years. 90% of the patients received neoadjuvant chemoradiotherapy. Mean operative time was 351 min (240 – 420 min). Mean estimated blood loss was 208 mls (70 – 1000 mls). Average length of stay was 10.4 days (5-15days). Post operatively 4 patients had ileus, 2 chest infection and 1 abdominal wound infection. There were no flap related complications. 30 and 90 day readmission was nil. Median follow up was 2.5 years (range 1 – 5 years). No patient developed perineal hernia in the follow up period. **Conclusion:** Although the operative times are longer but IGAP flap is safe and robust with no flap related complications observed in this series

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Be Prepared: A Multidisciplinary, Mpmri-Guided Surgical Planning Meeting For Localised Prostate Cancer

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Background: There are an increasing variety of treatment options for men with localised prostate cancer and it is crucial that we offer an individualised treatment approach. To achieve this, surgery should be formally planned in a multidisciplinary environment. Here, we describe our experience of running a weekly multidisciplinary surgical planning meeting for patients with localised prostate cancer at our tertiary referral centre. **Material and Methods:** Members of the robotic, focal, and urology teams meet to discuss a pre-collated patient list. Key characteristics are considered: age, PSA, histopathology (cores involved, Gleason score, cancer core length) and biopsy technique (transperineal vs transrectal). Next, multiparametric MRI are re-reviewed to describe: lesion location, multifocality and suspicion (scored: 1-5), sphincter length, aberrant anatomy (e.g. hernia), extraprostatic extension and involvement of critical structures (e.g. neurovascular bundles). Then, tailored surgical planning is conducted: unilateral intermediate-risk or high-volume unilateral low-risk disease are considered for focal therapy (cryotherapy, HIFU); higher-risk and bilateral disease are considered for robotic radical prostatectomy. **Result:** Through multidisciplinary input from focal therapy and radical prostatectomy experts, our patients receive the most appropriate surgical modality for them. Furthermore, specific surgery is then tailored to tumour anatomy (e.g. radical prostatectomy with Retzius-sparing, bladder neck preservation or nerve-sparing) based on MRI re-review, thus delivering optimal oncological and functional outcomes, for each patient. **Conclusion:** We believe that formalised multidisciplinary surgical planning allows us to deliver optimal care to men with localised cancer. We will present our longitudinal outcome data in future meetings.

1012

Investigating Ureteric Colic: Are The Baus Guidelines Feasible?

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Background: Ureteric colic is common. BAUS guidelines recommend NSAIDs as 1st line analgesia, that calcium and urate are measured and a CT KUB is performed within 14 hours. **Material and Methods:** The primary aim of this audit was to evaluate whether CT KUB was performed within 14 hours of acute presentation in our Trust. We audited the use of NSAID analgesia and the measurement of calcium and urate. Retrospective data collection and initial audit January - February 2018. The renal colic pathway was updated and a re-audit performed July - August 2018. All patients who had a CT KUB organised by A&E to aid diagnosis were included. **Result:** 120 patients were included in the initial audit (30% confirmed urolithiasis) and 164 in the re-audit (50% confirmed urolithiasis). The average time to CT KUB improved from 1 day, 2 hours and 23 minutes to 18 hours and 46 minutes. Time to CT KUB was significantly longer if patients were sent home to await an out-patient scan, this improved by 10 hours. The number of patients with calcium and urate measured on initial presentation was poor (7.5% and 15%) as was NSAID usage (32% and 23%). **Conclusion:** The time to CT KUB improved, although the average time is still outside that recommended. Mitigating factors may include inability to contact patients awaiting outpatient investigation and prioritising clinical work load. Given the low yield of positive scans, it would be more cost effective to measure calcium and urate only in patients with confirmed stones.

995

Testicular Rupture: Reports Of Three Consecutive Cases And Literature Review

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Background: Testicular rupture is a severe consequence of scrotal trauma (blunt, penetrating, degloving). Blunt impacts (sporting injuries, road traffic accidents, assault) are the commonest mechanism of injury; and males aged 15-40 are the most commonly affected population. Here, we report three consecutive cases of testicular rupture. The reports are accompanied by ultrasonographic and operative images, and a systematic review of the literature. **Material and Methods:** Three cases of unilateral testicular rupture presented to our hospital during a one year period. Causes of rupture included: rugby injury, fall onto bicycle, and assault. All received scrotal ultrasonography confirming diagnoses. Two out of three were managed surgically (scrotal exploration, haematoma evacuation, excision of necrotic tubules, primary closure of tunica albuginea). Patient 1 had a drain sited, whilst patient 2 did not. Patient 3 declined surgery, opting for conservative management. **Result:** Patient 1 had his drain removed on the first post-operative day and returned to work soon after discharge. Patient 2 made a full recovery, returning to school and light sports within one month after the injury. In the immediate post-operative period, Patient 2 did complain of persistent wound discharge (non-infective) and it is possible this may have been minimised if a drain had been sited at the time of surgery. Patient 3 was lost to follow-up, as he underwent permanent emigration from the UK. Interval ultrasound is planned for all patients to monitor for testicular atrophy. **Conclusion:** Testicular rupture is a true urological emergency that warrants rapid assessment and management to minimise testicular atrophy and requirement for orchidectomy.

1013

Magnetic Resonance Fusion Targeted Trans-Perineal Biopsy Versus Trans-Rectal Ultrasound Biopsy. Is There A Learning Curve?

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Background: MRI fusion transperineal (TP) biopsies were introduced to our unit in January 2018. Previously all prostate biopsies had been transrectal ultrasound (TRUS) guided biopsies with cognitive fusion **Material and Methods:** Pre-biopsy mpMRI sequences were used to determine areas of suspicion, and patients with a PI-RADS score of 3 and above proceeded to TP biopsy. MIM software™ and BK Ultrasound were utilised to fuse MRI regions of interest with real time US. All patients undergoing MR fusion targeted TP biopsies between January - August 2018 were compared with patients undergoing cognitive targeted TRUS biopsies between February 2016 - August 2018. The primary outcome was the presence of significant cancer (Gleason score $\geq 4 + 3$ or a maximum cancer core length 6 mm or longer). We also recorded the presence of significant cancer/disease outside the targeted area. **Result:** 38 patients underwent TP/MR fusion biopsies, with a 37% yield of significant cancer. 44 patients underwent TRUS biopsies with 25% demonstrating significant disease. Targeted MR fusion had a higher yield of significant cancer for all PIRADS scores. PIRADS 3: 16% Vs 10%. PIRADS 3-4: 75% Vs 33%. PIRADS 4: 55% Vs 43% 75% of MR fusion targeted PIRADS 5 lesions demonstrated significant disease. The rate of significant cancer outside the targeted area was higher in the TRUS cohort (13% Vs 2%). **Conclusion:** MR fusion targeted TP biopsies demonstrated higher yields of significant cancer versus TRUS. Our data would suggest that the learning curve lies as much in MRI interpretation as the biopsy technique utilised.

Free paper session: Vascular surgery

1000

Endovascular Vs Open Surgical Repair For Isolated Ruptured Descending Thoracic Aorta: A Systematic Review And Meta-Analysis

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Background: The purpose of this study was to compare clinical outcomes between open and thoracic endovascular aortic repair in isolated ruptured descending thoracic aorta. **Material and Methods:** A comprehensive search was undertaken among the four major databases (PubMed, Embase, Scopus and Ovid) to identify all published data comparing open versus endovascular repair. Databases were evaluated to March 2018. Odds ratios, weighted mean differences, or standardized mean differences and their 95% confidence intervals were analysed. **Result:** A total of 29,133 patients were analysed in 19 articles. Patients undergoing open repair were younger (mean of 54 yrs vs 58. yrs, $p < 0.01$). Cardiopulmonary bypass was used in 1% of open repair group. Duration of intensive care and total hospital stay were shorter in endovascular group (4.3 vs 9.9 days, $p = 0.003$ and 16.7 vs 12.9 days, $p = 0.009$ respectively). Although postoperative stroke and paraplegia were higher in endovascular repair group, but this didn't reach statistical significance 2.4% vs 1.6%, $p = 0.47$, and 1.7% vs 0.84%, $p = 0.62$ respectively. A rate of 9.5% of endoleak and 4.7% conversion to open was noted in the endovascular group. There was also higher rate of re-intervention at one year in the endovascular group ($p = 0.01$). Lower in-hospital mortality noted in endovascular repair ($p = 0.003$), while no statistical difference in mortality rates at one and five years ($p = 0.51$ and $p = 0.33$ respectively) between both groups. **Conclusion:** The present meta-analysis shows that ruptured descending thoracic aorta that is treated with endovascular repair have satisfactory perioperative outcomes with lower in-hospital mortality, however no differences in mortality rates noted at one and five years among both techniques.

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Mini-Sternotomy For A Chronic Type A Dissection Repair And Fet. It Is Feasible In Selected Patients.

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Background: Minimally invasive techniques have optimal results in aortic surgery in elective cases. Use minimal access in urgent cases is a challenge for the operator. We are presenting a case of a chronic Type A aortic dissection repair and FET using a minimally invasive access via J shaped hemisternotomy. **Material and Methods:** 54 years old male with a delay presentation of a type A aortic dissection and competent aortic valve on the TOE. Past medical history of treated hypertension with triple therapy, heavy smoker and positive family history of aortic dissection. Upper hemisternotomy extended into right 3rd intercostal space. Aorta and arch dissected, innominate artery cannulation via 8mm tube graft, central venous cannulation, right superior pulmonary vent and antegrade Cardioplegia. Use of deep hypothermic arrest at 25 0C and antegrade cerebral perfusion. **Result:** Smooth post-operative course with one day in ITU and discharge home after 6 days with no complications. **Conclusion:** Using ministernotomy on chronic type A dissection and FET is feasible and has optimal results with early recovery of the patient and short hospital stay.

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Vein Graft Failure And Intraoperative Storage Solutions: Which Is The Best In Preserving Graft Function?

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Background: In vitro and animal model data suggest that intraoperative preservation solutions may influence endothelial structure and vein graft failure after coronary artery bypass graft surgery. A convincing statement for the best solution for storage of saphenous vein graft (SVG) after harvesting is lacking. **Material and Methods:** We assessed the role of standard preservation solutions, physiological saline solution (PSS) and heparinized autologous blood (HAB) as well as the role of the new DuraGraft® solution in preserving the endothelial structure of SVG by evaluating cell apoptosis in an ex-vivo experiment. We used the DeadEnd™ Fluorometric TUNEL System to measure the nuclear DNA fragmentation of apoptotic cells and the fluorescence microscopy to visualize the fluorescein-12-dUTP labelled DNA. Two incubation time sets were tested for each vein preservation solution: 2 hours or 4 hours from vein harvesting. **Result:** After two hours, the use of the DuraGraft® better preserved the endothelial structure compared to the current storage solutions and was associated with a lower rate of cell apoptosis, especially comparing with the PSS ($p=0.002$). After 4 hours, none of the examined intraoperative solutions has proved to be better in maintaining the structural integrity of the SVG. **Conclusion:** DuraGraft® solution provides a good short-term vein endothelium protection against structural and functional damage and better protects the SVG against ischaemia induced apoptosis when compared to the most common storage solutions at 2h incubation time. A prolonged period of vein ischemia is associated with an extended endothelium damage and none of the studied storage solutions protect the SVG endothelium structure and function.

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The Effect Of Perfusion Technique On The Risk Of Cerebrovascular Events During Open Repair Of Thoraco-Abdominal Aortic Aneurysms.

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Background: Open repair of thoraco-abdominal aortic aneurysms (TAAA) can be undertaken using several cannulation and perfusion techniques to afford organ protection. In this study we analyse the incidence of CVA in these patients as a consequence of using either left heart bypass (LHB) with cross-clamping or hypothermic circulatory arrest (HCA) with an open proximal repair. **Material and Methods:** Between October 1998 and September 2017, 218 patients underwent open TAAA repair at our institution. 15 patients were excluded for missing operative data. The Crawford extent I and II patients were further subdivided according to the perfusion strategy into 3 groups: Group I underwent HCA, Group II underwent LHB with aortic cross clamping distal to the left Subclavian artery (LSA) (LHB-D), and Group III with LHB and clamping proximal to the LSA (LHB-P). Immediate post-operative neurological events and mortality was analysed. **Result:** The perfusion technique was HCA in 15% of the patients, LHB-D in 10%, LHB-P in 73%, while 2% had other perfusion techniques. The incidence of CVA in the whole group was 10.3% and paraplegia was 5.1%. The incidence of CVA was 11.1% (17 patients). Within these patients, Group I (28 patients) had 4 CVA (14.2%); Group II (15 patients) had 1 CVA (6.6%); and Group III (109 patients) had 12 CVA (11.0%). **Conclusion:** Open TAAA repair carries a significant incidence of CVA. The use of LHB, versus HCA, as a perfusion adjunct carries a more favourable outcome only in the cases that allow clamping distal to the LSA.

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Stand-Alone Venous-Arterial Extra-Corporeal Membrane Oxygenation For The Treatment Of Massive Pulmonary Embolism

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Background: Venous-arterial extra-corporeal membrane oxygenation(VA-ECMO) may be used as adjunctive-treatment until surgical pulmonary embolectomy on the patients with massive pulmonary embolism(MPE). The role of stand-alone VA-ECMO is not clear on this indication. The aim of this study is to analyse our short-term results with stand-alone VA-ECMO implantation on MPE. **Material and Methods:** We collected retrospectively the data of all consecutive patients who had stand-alone VA-ECMO implantation following MPE between January-2014 and December-2018. The diagnosis of MPE is based on computed tomographic angiography, trans-thoracic echocardiography and hemodynamic monitoring. Main focused outcome was the success of VA-ECMO weaning, peri-interventional complications and post-ablation right ventricular functions. **Result:** Six-teen patients (12 male-4 female, median age 57(27-77 years-old) had stand-alone VA-ECMO for MPE. All patients had an absolute-or-relative contraindications for systemic fibrinolysis. The vast majority(82%) of VA-ECMOs was implanted percutaneously using Seldinger technique and vascular ultrasonography guidance (13 versus 3 surgical). The positioning of the venous cannula controlled 100% by transthoracic or trans-oesophageal echocardiography. Success rate for ECMO-weaning was 82%(13/16). The median length of ECMO-support, ICU and hospital stays for surviving patients were 4(1-12), 9(2-39) and 16(2-166) days, respectively. **Conclusion:** Our findings shows that stand-alone VA-ECMO implantation can be considered as a principal treatment modality for the patients with MPE. On the other hand, the number of the patients on the present study is small and long term follow-up is needed including the effort capacity and follow-up for pulmonary arterial hypertension and right heart functions.

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Correlation Between Structural Damage And Mechanical Properties Of Cryopreserved Human Iliac Arterial Allografts Thawed At Different Rates

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Background: The rate of thawing of cryopreserved human iliac arterial allografts (CHIAA) directly affects the severeness of structural changes and possible future graft degeneration. The aim was to compare 2 thawing protocols. **Material and Methods:** The 10% dimethylsulfoxide in E199 was used as the cryoprotectant; all CHIAA were cooled at a controlled rate and stored in liquid nitrogen (-196°C). Two thawing protocols were tested: 1. water bath at 37°C (n=5), 2. slow thawing in a controlled environment at 5°C (n=5). Scanning electron microscopy was performed on all samples. Testing of the mechanical properties of the CHIAA was evaluated on a custom-built single axis strain testing machine. Longitudinal and circumferential samples were prepared. The samples stress-strain data were measured until rupture. **Result:** Histology revealed significantly more damage to the subendothelial structures in protocol 1 compared to the protocol 2. Mechanical properties: protocol 1: longitudinal ultimate tensile strain (UTS) 2,42±0,34 MPa at relative strain 1,32±0,09, circumferential UTS 1,98±0,26 MPa at relative strain 1,29±0,07. Thawing protocol 2: longitudinal UTS 2,53±0,47 MPa at relative strain 1,27±0,12, circumferential UTS 1,94±0,27 MPa at relative strain 1,33±0,09. Comparing UTS showed no statistical difference between thawing methods. **Conclusion:** Despite the significant differences in structural changes of presented thawing protocols, the mechanical testing showed no statistical difference between thawing methods. Thus, the rate of thawing of cryopreserved human iliac arterial allografts does not affect mechanical properties. However, this does not mean that the structural changes occurring during thawing may not affect the clinical performance of the allografts in other aspects.

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Cold-Stored Saphenous Vein Allografts For Critical Limb Ischemia In Organ Transplant Patients: Does Intense Immunosuppression Matter?

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Background: Infra-inguinal vein allograft bypass is an ultimate treatment for critical ischemia with absent autologous vein. The aim was retrospective evaluation in organ transplant patients on intensive immunosuppression. **Material and Methods:** Nineteen bypasses were implanted in 15 patients at mean age 64±9 (51-80) years between 2004-18. Mean SVS comorbidity score was 12.5±1.9 points. Leg ischemia were rest pain (n=3), tissue loss (n=10) and major tissue loss (n=6). Mean time after organ transplant was 7.3±4.8 (0.8-16.1) years. Transplanted organs: kidney (n=6), heart (n=4), heart+kidney (n=1), liver (n=1) and pancreas+kidney (n=3). Dual or triple immunosuppression was 13× tacrolimus-, 5× cyclosporin- and 1× sirolimus-based. The results were compared to a non-transplant historical control obtaining tacrolimus only (n=81, 2009-2013). Data were analyzed by Kaplan-Meier analysis. **Result:** Technical success was 100%. Complications (3/19): wound dehiscence, bowel perforation, early thrombectomy. No early mortality/amputation. At 1, 2 and 3 years primary patency was 24%, 0% and 0% (control: 27%, 19% and 14%, n.s.), and secondary patency was 42%, 31% and 0% (control: 71%, 71% and 57%, n.s.), respectively. Differences were non-significant probably due to low numbers. Limb salvage was 81%, 67% and 54% (control: 80%, 73% and 64%, n.s.), respectively. Survival at 1, 3 and 5 years was 88%, 80% and 68%, and amputation-free survival was 69%, 40% and 27%, respectively. **Conclusion:** Vein allografts show low patency but reasonable limb salvage. In transplant patients, they achieve even lower patency but similar limb salvage. Severe morbidity of transplant population with critical ischemia probably outweighs the effect of intense immunosuppression on allograft patency.

Free paper session: Transplantation and hepatobiliary surgery

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The Impact Of Stump Closure Techniques On Pancreatic Fistula Stratified By The Thickness Of The Pancreas In Distal Pancreatectomy

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Background: The optimum technique for pancreatic stump closure after distal pancreatectomy (DP) according to the pancreatic condition remains unclear. The purpose of this study was to evaluate the impact of stump closure techniques on pancreatic fistula (PF) focusing on the pancreatic thickness. **Material and Methods:** A total of 213 patients who underwent DP between 2007 and 2017 were retrospectively reviewed. The risk factors of PF were investigated. **Result:** In all patients, the operation time (OR: 2.61, 95% CI: 1.32-15.16, $P = 0.006$) and thickness of the transected pancreas (OR: 1.25, 95% CI: 1.15-1.36, $P < 0.001$) were identified as independent risk factors for clinically relevant PF. A receiver operating curve analysis revealed the optimum cut-off values of thickness to be 14 mm with stapler closure and 17 mm with the clamp-crushing method. We divided patients into three groups according to thickness of the pancreas. There were no significant differences regarding PF between the stapler closure and clamp-crushing methods in the thin (<14 mm) and very thick pancreas (≥ 17 mm) groups ($P = 0.816$, $P = 0.072$). In contrast, stapler closure was the only independent risk factor for developing PF after DP in the moderately thick (≥ 14 , <17 mm) pancreas group (OR: 6.75, $P = 0.004$). **Conclusion:** The clamp-crushing method was superior to stapler closure for pancreatic transection, especially in patients with moderately thick pancreas.

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Impact Of Enhanced Recovery After Surgery Protocol On Immediate Surgical Outcome In Elderly Patients Undergoing Pancreaticoduodenectomy

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Background: The numbers of patients undergoing pancreaticoduodenectomy is increasing and considerable percentage are elderly patients. Pancreaticoduodenectomy is a major and complicated surgery. The morbidity and mortality following pancreaticoduodenectomy has significantly reduced in recent times; it still remains unclear in elderly patients. Applications of Enhanced Recovery after Surgery protocol have contributed for this better outcome. **Material and Methods:** Retrospective study. Patients who underwent pancreaticoduodenectomy with Enhanced Recovery after Surgery protocol were included and divided into two groups (<60 years Vs ≥ 60 years). Outcomes were analyzed in terms of post-operative morbidity, mortality and length of hospital stay. **Result:** Total 103 patients underwent pancreaticoduodenectomy during the study period (Jan 2012- Dec 2017). The mean age was 56.6 ± 10.32 years. Fifty six (54.37%) patients were aged <60 years (Young group) and 47 (45.63%) patients were aged ≥ 60 years (Elderly group). There was no difference between the groups in terms of age, gender, co-morbidity, preoperative drainage and diagnosis. There was no significant difference in the morbidity and mortality ($p > 0.05$). Delayed gastric emptying was the most common complication 25.24% (21% vs 23.41%). Pancreatic fistula rate was 13.59% (8.9% vs 12.76%) and hemorrhage was 4.85% (5.4% vs 4.3%). Mortality was 4.85%. Post-operative hospital stay was comparable (14.7 days vs 15.3 days) ($p = 0.164$). **Conclusion:** Pancreaticoduodenectomy is a safe surgical procedure in elderly patients in comparison to young patients. Application of Enhanced Recovery after Surgery protocol can improve the outcome further.

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Non Directed Anonymous Donor Chains In Kidney Paired Donation Program

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Background: Kidney paired donation (KPD) program gives the opportunity to receive a live donor kidney graft even in case of ABO or HLA incompatibility between donor and recipient. Incorporation of altruistic donors (Non-directed anonymous donors – NDAD) can significantly expand the number of transplants. **Material and Methods:** We have performed in total 68 paired live kidney transplants since 2011. Those transplants were grouped in thirteen 2- way, three 3-way, two 4-way, two 5-way, two 6-way and one 7-way kidney paired exchanges (chains). This study reports of 4 non-directed anonymous donors Chains in Kidney paired donation program. Since 2011 we have evaluated in total 12 potential anonymous donors. From those, 6 have successfully matched all the donation criteria for altruistic donors. 4 donors have been enrolled in NDAD chains, 1 is waiting to initiate future NDAD chain. **Result:** The 4 altruistic donors have initiated one 6-way, two 5-way chains and one unclosed NDAD chain. In the first 3 NDAD chains, the last donor donated to national waiting list. The last chain is an unclosed - never ending NDAD Chain. In this type of chain, the terminal donor waits as a bridge donor and serves to initiate a new NDAD chain. Up to now, this unclosed, open 5-way chain contains one 3-way and one 2-way exchanges. **Conclusion:** NDAD donors should be allocated in Kidney donation programs. NDAD chains can initiate transplants in pairs, who cannot be matched in closed chains. This could help highly HLA sensitised patients as well as blood group 0 recipients.

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Surgical Factors Associated With Acute Kidney Injury After Liver Transplantation

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Background: Background Limited organ supply has led to greater use of liver allografts with higher donor risk indices or donated after cardiac death (DCD). Recipients of such organs are prone to an increased risk of end-stage renal disease after liver transplantation (LT). Little is known about the impact of procurement and transplant technique on AKI post LT. We aimed to assess surgical impact on post LT AKI. **Material and Methods:** Method We conducted a retrospective single-centre study of all patients undergoing first-single-organ LT without preoperative renal failure (eGFR>60 ml/min/1.73m²) from January 2012 to December 2016. AKI was defined as a decrease of more than 50% in eGFR (CKD-EPI) within 48h postreperfusion. Features associated with AKI were included in multivariate logistic regression. **Result:** Results 106 patients were included, 63 received liver from donor in brain death and 43 from DCD. Incidence of AKI was 33%. Onset of AKI was significantly associated with the duration of LT, platelets and blood transfusions, low levels of platelets and haemoglobin at day one. AKI was more frequent if lungs were procured first in the donor. Incidence of AKI was similar regarding donor type, duration of donor hepatectomy, cold ischemia and anastomosis in recipient. After multivariate analysis, thoracic before liver procurement [OR 5.75 (1.76-18.77), p=0.004] and recipient surgery duration [OR 1.64 (1.15-2.32), p=0.006] were independent risk factors for AKI. **Conclusion:** Conclusion Thoracic before liver procurement and recipient surgery duration were significantly associated with a higher incidence of post LT AKI. Donor type was not identified as a risk factor for AKI.

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Inhibition Of Heparanase Protects Against Chronic Kidney Dysfunction Following Ischemia/Reperfusion Injury

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Background: Renal ischemia/reperfusion (I/R) injury occurs in patients undergoing renal transplantation and is responsible for the development of chronic allograft dysfunction as characterized by parenchymal alteration and fibrosis. Heparanase (HPSE), an endoglycosidase that regulates EMT and macrophage polarization, is an active player in the biological response triggered by ischemia/reperfusion (I/R) injury. **Material and Methods:** I/R was induced in vivo by clamping left renal artery for 30 min in wt C57BL/6J mice. This study included cases treated with Ronaparstat (inhibitor of HPSE) 0.6 mg/day (n=14) or 1.2 mg/day (n=14); positive (I/R + placebo; n=7) and negative controls (sham-operated; n=7). Animals were sacrificed after 8 weeks. HPSE, fibrosis, EMT-markers, inflammation and oxidative stress were evaluated by biomolecular and histological methodologies. Statistical analysis used Bonferroni test (significance for p<0.05) **Result:** Eight weeks after I/R HPSE was upregulated both in renal parenchyma and plasma. Tissue specimens showed clear evidence of renal injury and fibrosis. The inhibition of HPSE with Ronaparstat restored histology and fibrosis level comparable with that of controls. I/R-injured mice showed a significant increase of EMT, inflammation and oxidative stress markers but the treatment with Ronaparstat decreased the same markers. Finally, the inhibition of HPSE in vivo almost restored renal function as measured by BUN, plasma creatinine and albuminuria. **Conclusion:** The present study points out that HPSE is actively involved in the development of renal fibrosis of the transplanted organ as a consequence of ischemia/reperfusion damage. HPSE inhibition would therefore constitute a new pharmacological strategy to reduce acute kidney injury and to prevent the chronic pro-fibrotic damage induced by I/R.

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Cold Flushed Porcine Dcd Kidneys Sustain Greater Damage Than Direct Perfusion Using A Normothermic Machine Perfusion System

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Background: In clinical practice, kidney grafts are washed out of blood remnants and cooled using organ preservation solutions during explantation. Here we assessed the potential advantages of direct normothermic perfusion without cold preflush after kidney graft explantation compared to the routinely performed cold flush followed by reperfusion. A novel normothermic machine perfusion (NMP) system was employed for 6 h assessment of renal function and damage parameters using warm ischemia-damaged porcine kidneys. **Material and Methods:** Before graft recovery, a 24±4 min warm ischemia period was applied after cardiac arrest. Thereafter, kidneys (n=6/group) were directly perfused (DP group) on the NMP system or perfused after flushing with cold Custodiol solution (FP group). Renal function and damage were assessed during 6 h normothermic reperfusion using a blood/buffer solution. **Result:** Renal function as expressed by creatinine clearance, fractional excretion of sodium and total output of urine was statistically better in DP compared to FP. Intrarenal resistance, urine protein and NGAL concentrations in the DP group were lower compared to FP. In the DP group, planimetric analysis of hemorrhagic areas in renal cross sections as well as histologic assessment revealed less blood clotting after reperfusion compared to FP. **Conclusion:** This study demonstrated the advantages of direct perfusion over cold flush in the context of normothermic perfusion preservation of warm ischemia-damaged kidney grafts. Renal function was better and less structural damage was seen after direct reperfusion compared to cold flushed kidneys. Moreover, the novel normothermic machine perfusion system provided a reliable platform for assessment of preservation techniques.

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Robot-Assisted Liver Surgery In A General Surgery Unit With A Hpb Referral Centre An Example Of Hub&Spoke Learning Program. Outcomes After 70 Consecutive Patients.

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Background: Aim of this study was to evaluate safety, feasibility and short-term outcomes of our first 70 consecutive patients treated by robotic-assisted liver resection after a reversal proctoring between a high HPB volume centre and our well-trained centre in minimally invasive General Surgery. Six surgeons were involved in this Hub&Spoke learning program. **Material and Methods:** From September 2012 to December 2016, 70 patients underwent robotic-assisted liver resections (RALR). We treated 18 patients affected by colorectal and gastric cancer with synchronous liver lesions suspected for metastases in a one-stage robotic-assisted procedure. For the first 20 procedures we had a tutor in the operatory room, who was present also in the next most difficult procedures. **Result:** The 30- and 90-day mortality rate was zero with an overall morbidity rate of 10.1%. Associated surgical procedures were performed in about 65,7% of patients. The observed conversion rate was 10%. The results of the first 20 cases were similar to the next 50 showing a shortened learning curve. **Conclusion:** Minimally invasive robot-assisted liver resection is a safe technique; it allows overcoming many limits of conventional laparoscopy. This innovative, time-enduring Hub&Spoke may allow patients to undergo a proper standard of care also for complex surgical procedures, without the need of reaching referral centres.

Free paper session: Innovations in surgery

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Looking To The Horizon: Are We Are On The Brink Of An Artificial Intelligence Revolution In Prostate Cancer?

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Background: Artificial intelligence (AI), computer-aided diagnosis (CAD) and machine learning (ML) will play critical roles in the future of healthcare. They alleviate errors of reliance upon human-performance, increasing efficiency, reducing costs. Prostate cancer places a huge burden upon healthcare services, and therefore represents an ideal candidate for AI transformation. **Material and Methods:** mpMRI has revolutionised the diagnostic pathway for prostate cancer; greatly outperforming random transrectal ultrasound-guided prostate biopsy. Development of a prostate recognition algorithm, based on quantitative data from mpMRI sequences, would enable ML to automate detection of the prostate (and enclosed cancer) on mpMRI, thus reducing demands of the radiology workforce, and current levels of subjectivity and inter-observer error. **Result:** Prostate cancer is heterogenous, and as such, means that biopsy interpretation is a challenging task reserved for expert uropathologists. Recently, a Cornell-based team developed a digital system that significantly outperforms general pathologists in the correct identification of Gleason grading (70% vs 61%). Already, it appears that early digital systems are able to perform at a similar (or greater) level than trained pathologists. If CAD can reduce pathology workload, minimise inter-reader error, and perform biopsy analysis in a timely, reproducible manner, then a future position for digital histology seems certain. **Conclusion:** In the future, men at risk of prostate cancer could be enrolled from a national database to undergo machine-read mpMRI. Then, they would have targeted prostate biopsies performed by an autonomous biopsy robot, which are interpreted automatically through an AI algorithm, to provide rapid diagnoses. Is this idealised pathway really science fiction? Time will tell.

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Sterile Surgical Helmet Systems - What Is The Safest Way To Use Them Whilst Scrubbing?"

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Background: Infection occurs in 2-4% of arthroplasty cases. Identifying potential sources of infection can help to reduce infection rates. The study's aim is to identify the impact and potential for contamination of our hands and gowns whilst scrubbing using sterile surgical helmet systems (SSHS). **Material and Methods:** A colony-forming unit (CFU) is a pathogenic particle of 0.5 to 5 micrometres. A standard arthroplasty hood and a SSHS with and without the fan on for a 2-minute exposure to represent scrubbing time, were tested on 3 subjects and a mannequin with concurrent particle counts and culture plates. **Result:** All SSHS were positive for gram-positive cocci with a mean colony count of 410cfu/m2. Comparing background counts for laminar flow (mean 0.7 particle/m3; 95% CI 0-1.4) versus scrub areas (mean 131.5 particle/m3; 95% CI 123.5-137.9; p=0.0003), however neither grew any CFU's with a 2-minute exposure. The background count increased 3.7 times with the fan on (total p=0.004, CFU p=0.047) and all had positive cultures, mean 36 CFU/m2. There were no positive cultures with the standard arthroplasty hood or the SSHS with no fan on. In laminar flow all cultures were negative, and particle counts low. **Conclusion:** Sterile gloves and gowns can be contaminated when scrubbing with the SSHS fan on. We recommend the fan remains switched off when scrubbing until the hood and gown is in place, ideally in a laminar flow environment.

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Live Per Operative Control Of Deformity Correction Using A 3D Software Navigation System

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Background: Analysis of spine balance before fusion is well acknowledged in surgical planning especially in long fusions for deformity. Objective of this study is to provide an innovative 3D analysis tool to intra-operatively check deformity correction and help matching with pre-op planning. **Material and Methods:** 15 deformity patients were prospectively included with pre-op, post-op 1 week, 3 and 6 months full-spine EOS Xray. A pre-op simulation software was used to plan correction. Corrective osteotomies and maneuvers were recommended by one treating surgeon. During surgical procedure trackers were attached to reference vertebrae (C7, T8, T12 or L1, L4 and S1) and recorded by an infrared 3D camera. Tracker position was linked to reference vertebrae and any movement of vertebrae were immediately seen on a screen before and after rod insertion, allowing for matching with the pre-op planning. Additional correction was performed if necessary. **Result:** Mismatching was less than 2.5° (+/-2°) in all planes intra-operatively. There were no overcorrections. Final correction was stable at 3 and 6 month with mismatching to pre-op planning less than 4°. In situ rod bending allowed to maintain the matching of curve correction. **Conclusion:** Adequate correction of spinal deformities not including L5-S1 is important to avoid undercorrection and compensatory curves at mid-term follow-up. This innovative realtime intra-op 3D curve correction checking tool is efficient because it uses anatomical landmarks allowing the surgeon to stick to the surgical plan. The mismatch at 6 month was less than 4°.

1037

Smartphone Apps And The Post-Operative Period In Orthopaedic Surgery: Is It Time To Bring Technology Into Clinical Practice ?

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Background: Smartphones have become essential tools , indispensable to daily life. They improve the quality of life, simplifying daily tasks but also provide better safety through education and prevention. Patients and doctors are using this technology. In orthopaedic surgery (OS) the post-operative period (POP) is a crucial time. Proper respect of the surgical recommendations is mandatory as complications caused by a wrong rehabilitation protocol could lead to poor results. Rehabilitation could also largely benefit of what exist in the non-medical field. The purpose of this study was to review the existing evidence on the use of smartphones in orthopedic surgery, especially with regard to the POP. **Material and Methods:** A systematic literature search was performed on PubMed, OVID, and Web of Science databases, based on the PRISMA recommendations. All studies including the use of smartphones or other patient controlled applications to modify the postoperative period, were included. **Result:** No RCT was found concerning the addition of the use of smartphones in the POP. Several review articles and small case series were found. **Conclusion:** Surgeons may benefit from using existing tools for communication, education and rehabilitation. Very little scientific evidence for the use of smartphone applications in orthopedic surgery exists . Nevertheless, this remains an interesting topic and numerous innovative ideas are presented in order to increase the level of care we nowadays give to our patients. As it is a recent shift in the way we live, we propose new guidelines and a vision for research in order to implement this technology in daily practice.

919

Use Of A Porcine Model For Training In Transperitoneal Pelvic And Para-Aortic Lymphadenectomy

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Background: to report the surgical steps in a live porcine animal model for the practice of transperitoneal pelvic and para-aortic lymphadenectomy **Material and Methods:** The anatomical similarities that the porcine species presents with respect to humans allow us to master in the techniques of pelvic and para-aortic lymphadenectomy. Both procedures are performed with the animal in dorsal recumbency. Four ports were used to carry out pelvic lymphadenectomy. Surgery starts with the dissection and removal of the medial iliac lymph nodes to continue with the deep inguinal nodes and, finally, with the sacral and anorectal lymph nodes. In the case of para-aortic lymphadenectomy, Five ports were used for the dissection of the renal and lumbar aortic nodes. The surgical steps followed to develop this technique were: access to the retroperitoneum, dissection and separation of the retroperitoneum to create a tent, localization of the anatomical landmarks, dissection of the paracaval lymphatic tissue, dissection of the inter-aorta-cava space and lastly, the dissection of lymphatic tissue **Result:** We have standardized the use of the porcine experimental model for the practice of pelvic and para-aortic lymphadenectomy **Conclusion:** this model would help to reduce the learning curve associated with lymphadenectomy procedures as an additional model for another animal species, ex vivo methods or fresh, frozen or Thiel cadaver.

Free paper session: Thoracic and endocrine surgery

958

Intra-Operative Fluorescence Assisted Laparoscopic Central Mesenteric Lymph Node Dissection For Small Bowel Net

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Background: Radical resection of primary tumour and mesenteric lymph node metastases of small bowel neuroendocrine tumours (SB-NET) are associated with prolonged survival. This case illustrates the details of laparoscopic central mesenteric lymph node dissection for SB-NET. **Material and Methods:** Case presentation This cases involves a 64-year old woman with a medical history including hypertension, steatotic hepatitis and hypercholesterolemia. She presented with paroxysmal epigastric pain since 3 years. CT and 68Ga-DOTATATE PET scan showed a hypervascular mesenteric mass suspicious for small bowel NET with a mesenteric lymph node with a close relation to the superior mesenteric vein and branches of the superior mesenteric artery. Through retroperitoneal dissection the avascular plane was developed cranially and dorsally from the tumour over the duodenum. The dissection is then continued ventrally over the mesenteric root isolating the base of the mesenteric root through laparoscopy, while ensuring complete dissection of the mesenteric lymph nodes. After dissection, perfusion was assessed using intravenous ICG to determine location of transection. **Result:** ICG resulted in a change of management, preserving 35 cm of small bowel, as compared with only visual inspection of perfusion. Histopathological examination revealed a grade 1 SB-NET, which was radically resected. The patient recovered without complications and had no anastomotic leakage. **Conclusion:** This laparoscopic strategy provides a feasible and excellent overview over the anatomical planes, especially retroperitoneally and over the base of the mesenteric root. ICG fluorescence can be used to assess small bowel blood perfusion to prevent unnecessary small bowel resection. We wish to present this abstract as video presentation.

934

Difficulties In Secondary Hyperparathyroidism Surgery And Solutions: A Special Attention To Anatomical Distribution Of Parathyroid Glands

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Background: To evaluate the efficacy of total parathyroidectomy (TPTx) and thyrothymic ligament excision (TTLx) for the treatment of secondary hyperparathyroidism (SHPT) and to identify the location of parathyroid glands with attention to the pattern and frequency of eutopic and ectopic glands. **Material and Methods:** Between 2013 and 2018,fiftysix chronic hemodialysis patients with medically refractory SHPT underwent TPTx&TTLx. The adequacy of the operation was defined by the pathological confirmation of at least 4 parathyroid glands, accompanied by normal intact PTH value within the first 24 hours postoperatively. Based on the anatomical localizations , four different sites were defined for the upper and lower parathyroid glands (Zone I-IV). **Result:** The mean follow-up was 14.8 ± 13.1 months. The mean iPTH value at the first day after the operation were normal in 48 patients, with an average of 13.3 ± 20.1pg/mL. 8 patients (14.3%) had persistent HPT after the operation. Three of them underwent complementary parathyroidectomy. The surgical success rate after first and second operation was 85.7% and 89.3%,respectively. A total of 217 parathyroid glands were detected. Ninetytwo percent of the upper parathyroids were located at Zones I&II. However,almost 28% of the lower parathyroids were ectopic and located in Zones III&IV. **Conclusion:** At least one fourth of the lower parathyroids are ectopic. For this reason Zone III and IV should be carefully investigated in the operation. For upper parathyroids not found in Zone I-III, total thyroidectomy on the same side is preferred.

884

Parathyroidectomy: A Uk Single-Surgeon, Single-Centre Series

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Background: Parathyroidectomy is most commonly performed for primary hyperparathyroidism and remains the only curative treatment for this condition. Approximately 80-90% of cases are caused by parathyroid adenoma, often affecting just one parathyroid gland (75% of cases) but occasionally two or three parathyroid glands may be involved. **Material and Methods:** The authors reviewed the case series of a single surgeon performing parathyroidectomy in a low-volume centre in the UK. A retrospective analysis of surgical records was conducted to ascertain mean parathyroid specimen weight, mean reduction of serum parathyroid hormone (PTH) levels post-surgery and mean reporting times for serum PTH and fresh frozen section of parathyroid specimens. **Result:** Forty-nine cases over a period of nine years were reviewed. A 3.9:1 female to male preponderance was demonstrated with a mean patient age of 63 years. Mean parathyroid gland weight was 1.345 grammes across 32 specimens. A parathyroid adenoma was correctly identified and excised in 97.9% (48/49) of cases as confirmed by fresh frozen section intra-operatively which required a mean reporting time of 34 minutes across 54 fresh frozen section specimens. A mean post-operative reduction of PTH level by 70.55% was demonstrated across all cases comprising 70 pre- and 75 post-operative serum PTH samples. **Conclusion:** Parathyroidectomy for primary hyperparathyroidism can safely be performed within a low-volume centre capable of providing expedient fresh frozen section sampling and serum PTH analysis with outcomes demonstrably comparable to that of high-volume centres.

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A Comparison Of Use Of The Laryngeal Mask Airway And Endotracheal Intubation In The Thyroid Surgery.

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Background: The use of the laryngeal mask airway (LMA) opens up new possibilities for maintaining airway patency, without resorting to intubation of the trachea. To determine the safety and possible benefits of the use of LMA versus the ETI in thyroid surgery. **Material and Methods:** In 68 patients (group A) after administration of midazolam (0.07-0.1 mg / kg) and propofol (2.0-2.5 mg / kg) a LMA was established with spontaneous breathing preserved. In 64 patients (group B) after the administration of midazolam, propofol and rocuronium (0.5-0.6 mg / kg) ETI with mechanical ventilation. All patients underwent identical general anesthesia based on fentanyl (3-5 µg / kg) and isoflurane (0.8-1.5% by volume). The adequacy of anesthesia was assessed by clinical observation, by studying the variables of the standard (ECG, heart rate, BP, SpO2) and BIS monitoring, ABB and gas composition in the arterial blood and the level of cortisol in the venous blood. **Result:** In groups A, B during the induction, the BIS index decreased and further stabilized and maintained until the end of anesthesia, respectively, within 65-53% and 65-45%. Clinical observations showed the adequacy of anesthesia in both groups. However, in group A occurred 10-15 minutes after the end of surgery without the need for decurarization. A LMA was removed in the operating room with adequate spontaneous breathing. Complications associated with the use of LMA were not observed. **Conclusion:** The use of LMA in thyroid surgery is a safe alternative to ETI for general anesthesia, and it can be successfully used in thyroid surgery.

917

Parathyroid Indocyanine Green Angiography May Help To Reduce Hypoparathyroidism After Total Thyroidectomy: A Retrospective Study

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Background: Post-operative hypoparathyroidism is the most common complication after total thyroidectomy occurring in up to 30% of patients as the result of intentional or inadvertent extirpation, trauma, or devascularization of the parathyroid glands. Our aim was to assess whether the introduction of parathyroid gland angiography with fluorescent indocyanine green (ICG) could reduce the rate of hypoparathyroidism in a consecutive series of total thyroidectomies. **Material and Methods:** Retrospective observational study between January 2012 and October 2018 of all patients in our database (N=968) undergoing total thyroidectomy. We compared the incidence of hypoparathyroidism on post-operative day 1 (POD1) before and after the introduction of ICG angiography in May 2014, in our unit. Hypoparathyroidism was defined as PTH level <1.1pmol/L. **Result:** POD1 hypoparathyroidism was observed statistically significantly less often in the 217 patients who had ICG angiography vs. 751 who did not (4% vs. 10%, $p=0.0076$). The overall rate of POD1 hypoparathyroidism decreased after May 2014, although not statistically significant (8.0%vs.10.4%, $p=0.2075$). Moreover, the PTH level on POD1 was statistically significantly higher in patients after the introduction of ICG angiography as compared to patients before (3.27pmol/l +/-1.70 vs. 2.77pmol/l +/-1.49, $p=0.0000092$ two-sided T-test). No differences in the mean serum POD1 calcium level was observed before (2.28mmol/l +/-0.19) and after (2.24mmol/l +/-0.18) the introduction of ICG angiography. **Conclusion:** The use of ICG angiography was associated with a statistically significant decrease of hypoparathyroidism and higher POD1 PTH levels. This suggests that increased awareness of parathyroid vascularization could be a favorable adjunct to parathyroid preservation during total thyroidectomy.

961

Incidental Finding Of A Small Intestinal Neuroendocrine Tumour: A Case Report And Literature Review

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Background: Small intestinal NETs (SI-NETs) are the most common gastrointestinal NETs and have recently overtaken adenocarcinomas as the most frequent type of small bowel tumours. NETs are heterogeneous neoplasms that originate from cells with a secretory function and their incidence has increased in recent years. The small intestine is one of the most common site of presentation with the appendix being the most frequent localisation. **Material and Methods:** We report a case of a 70-year-old male with a 2 week history of widespread abdominal pain after having swallowed an apricot kernel. A CT scan showed a mechanical ileus with inflammation of the distal ileum around the kernel, thickening of the intestinal wall and infiltration of nearby fat. A laparoscopy was then converted to a mini-laparotomy and an ileocectomy was performed because of the suspicion of an associated tumour lesion. The histopathological findings reported a well-differentiated neuroendocrine tumour of the distal ileum. **Result:** The incidence of SI-NETs has increased significantly in the past decade. Diagnosis at an early stage is often difficult as small tumours are usually asymptomatic or have non-specific symptoms and often become symptomatic at an advanced stage with metastases. The treatment of choice is surgical and the gold standard is an exploratory laparotomy with careful palpation of the jejunum and ileum to identify small and/or multifocal NETs. **Conclusion:** SI-NETs are tumours with an increasing incidence in recent years. Our case highlights how these types of tumours maybe incidental findings. Furthermore, according to the extension and differentiation, they could present good survival rates.

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Tuberculosis Strikes Back – An Analysis Of Outcomes Of Surgical Diagnostics And Treatment Of Thoracic Tuberculosis

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Background: Surgery has been a unique therapeutic tool of Tuberculosis (TB) treatment for several decades. With the introduction of antituberculous, the role of surgery was limited to treating the complications of TB. The current global rise in TB, the emergence of multi-resistant forms of TB and the increase in the number of immunosuppressed patients pose new challenges for the surgical treatment of TB.

Material and Methods: Retrospective analysis of all patients with thoracic form of TB operated at 8-year period at the Department of Thoracic Surgery of Thomayer Hospital. **Result:** From October 2011 to June 2018, 69 patients underwent surgery for proven Thoracic TB. 12 patients underwent surgery for complication of TB. 5 patients underwent a lung resection for TB coincidence with malignancy. TB was detected in 42 patients indicated for diagnostic surgery for unverified pulmonary nodes. Tuberculosis was an etiological agent in 5 patients operated for resistant pleural effusion and in 4 patients treated for empyema. In one patient, TB was detected by mediastinal node biopsy in mediastinoscopy. Postoperative lethality in the cohort was 1.5%. Morbidity reached 12%. A multi-resistant TB was found in 2 patients. **Conclusion:** Surgical treatment of TB continues to play an important role both in diagnostics and in indicated cases in addition to pharmacological treatment, especially in patients with multidrug-resistant forms of TBC and in the coincidence of TBC and lung tumors. The development of advanced instruments and technology allows the use of minimally invasive procedures in most diagnostics interventions and in selected therapeutic resections.

Free paper session: Case reports

946

Extracranial Carotid Artery Aneurysm In Patient With Loeys-Dietz Syndrome

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Background: This case describes the progression and management of an extracranial carotid artery aneurysm, in the context of a Loeys-Dietz syndrome, a rare etiology of true aneurysms. **Material and Methods:** We report about a 34 year-old woman, known for a Loeys-Dietz Syndrome, who presented a stroke in 2005 due to a thromboembolic event in the context of a patent foramen ovale. An asymptomatic aneurysm (13 x 10mm) of the right internal carotid artery was discovered incidentally during workup. Nonoperative management was decided at the time. In 2008, the patient wished to have a child. A multidisciplinary team discussion, surgeons and non interventional neuroradiologist was involved, and a conservative approach was adopted once again. In 2015, the patient presented a palpable pulsatile neck mass, and further investigations confirmed growth of the aneurysm (24 x 17mm). In the setting of significant progression of the ECAA in a patient known for LDS, due to the lack of current guidelines, our strategy was to confront the two different options of repair: endovascular or open approach. **Result:** We performed an aneurysm excision followed by an end-to-end anastomosis without complications. **Conclusion:** Currently, open surgical approach remains the primary treatment choice for carotid artery aneurysms. We suggest that is valid for patients with connective tissue diseases, including Loeys-Dietz Syndrome. However, there aren't studies that could demonstrate the superiority of any technique given the rarity of these kind of carotid aneurysms. A multidisciplinary team should discuss each case in order to find the best management to offer to the single patient.

925

Primary Aorto Duodenal Fistula Following Ruptured Abdominal Aneurysm: Report Of A Case.

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Background: Primary aorto-duodenal fistula (PADF) is a rare but lethal cause of gastro-intestinal bleeding. **Material and Methods:** We report on the case of a 79-year-old patient addressed to the Emergency Department (ED) for melena, with a medical history of hypertension and chronic back pain managed with painkillers. An abdominal CT-scan was performed and showed a 10 cm abdominal aortic aneurysm (AAA) with signs of an old rupture, and an aorto-duodenal fistula. An emergency laparotomy was performed and the duodenal defect was repaired by simple closure and secured with an omental patch; the aorta was replaced with a prosthetic infrarenal aorto-aortic bypass. The intra-abdominal bacteriology found an *Enterococcus faecalis* and was treated with antibiotics for a 2-week duration. **Result:** One month later, the patient was discharged from hospital, but was later readmitted to the ED for acute hematochezia and a melena. An upper gastro-intestinal endoscopy revealed a recurrence of the bleeding from the duodenal fistula. A CT-scan confirmed the presence of this fistula, and revealed a para-aortic collection containing gas. An emergent fistulectomy and duodeno-jejunectomy. The post-operative course was complicated, and the patient suffered a sudden cardiac arrest and died one week later. The autopsy reported the presence of erosion of the graft, probably due to the infection. **Conclusion:** PADF due to AAA is a challenging and complex pathology still associated with a high mortality and morbidity rate More than 90% of aorto duodenal fistulae are secondary to a previous aortic surgery,specifically open repair of AAA or aortic bypass. PADF are rare(0.04%).

978

Anatomy Of A Suicide

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Background: Penetrating neck injuries (PNI) are rare compared to other injury types, even more so in suicide attempts. Nonetheless, the anatomic complexity and risk of vascular and airway injury rank it amongst the most fatal types of injury. Management following a 3 zone division has been discredited due to high negative exploration rates in stable zone 2 injuries (13-19%), poor correlation between wound location and internal organ injuries and increased hospital length of stay. Furthermore, multiple or transcervical injuries are hard to classify into specific zones as epitomised by our case. **Material and Methods:** A 52 year old hemodynamically stable female was admitted following a self inflicted, right para tracheal stab wound with a 10cm blade kitchen knife. A cervico-thoracic CT scan excluded vascular and internal organ injuries. A right pneumothorax was drained and a right exploratory cervicotomy was performed. A pharyngoscopy and esophagoscopy were negative for any further lesions. **Result:** Advanced Trauma Life Support principles regulate initial evaluation. Invasive airway management is recommended when orotracheal intubation is impossible. Unstable patients with platysma violation and vascular or aerodigestive injuries require mandatory surgery. Laryngotracheal injuries mandate panendoscopy and bronchoscopy. Pharyngo-oesophageal injuries may be treated conservatively. Esophageal injury requires operative repair which is timing dependent. Recently, a 'no zone' approach has provided superior outcomes in stable PNI. Multidetector helical computed tomography with angiography (MDCT-A) has reduced formal neck explorations. **Conclusion:** Currently, there is lack of consensus concerning optimum assessment and treatment of PNI. Evidence indicates the no-zone approach is better than traditional approaches in reducing negative neck explorations.

977

Successful Salvage Of Post-Myocardial Infarction Left Ventricular Free-Wall Rupture After Delayed Diagnosis

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Background: LV free-wall rupture is a rare but fatal complication after MI. It is most common in patients older than 55 with transmural MI. It may be classified according to the extent of myocardial dissection. Management are conservative or surgical repair. We report a successfully repaired LV rupture. **Material and Methods:** A 69-year-old gentleman presented to the emergency department with a 3-day history of chest pain. Investigations revealed inferior STEMI with raised troponin. Coronary angiogram revealed blocked right coronary artery, which was treated medically, and subsequently discharged. He was re-admitted 5 days later with significant pericardial effusion. The next day, he suffered a cardiac arrest, and was resuscitated with chest compressions, intubation and inotropes. Transthoracic echocardiography confirmed a large pericardial collection with thrombus causing tamponade. Emergency pericardiocentesis was unsuccessful and surgical repair was undertaken. The inferior wall rupture was repaired using a double-layer linear repair technique supported by Teflon strips with interrupted ethibond and continuous prolene. Topical tissue sealant was also applied. Vein grafts were used to bypass the inferior and lateral wall vessels. Multiple re-packing was undertaken within the first 24 hours due to bleeding. The sternum was closed after 72 hours. **Result:** Despite multiple ischaemic toes, tracheostomy for prolonged wean, and high inotropic requirements, he recovered and discharged for rehabilitation on day 47. **Conclusion:** Surgical treatment of LV free-wall rupture is challenging. This is a late, acute LV wall rupture secondary to a STEMI due to blocked right coronary artery. It was successfully repaired by surgery. Follow-up should monitor for pseudoaneurysm and heart failure.

1039

Minimally Invasive Laparoscopic And Robot-Assisted Emergency Treatment Of Giant Strangulated Hiatal Hernias: 4 Cases Report

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Background: Giant hiatal hernia (GHH) is a condition where one third of stomach is migrated into the thorax. Nowadays laparoscopic treatment when indicated gives excellent perioperative outcomes. Strangulated giant hiatal hernia is rare. Urgent repair is associated with significant morbidity and mortality rates. Minimally invasive and Robotic-assisted approach of these situations are reported, offering some advantages. **Material and Methods:** Over a period of 10 years (December 2006 - December 2017) 31 patients affected by giant hiatal hernias were treated using a robot-assisted or conventional laparoscopic surgical approach. In 4 cases a situation of strangulated - non reducible incarcerated hernia was found and treated in emergency, 2 cases using robotic surgery (da Vinci surgical System) and in two cases using laparoscopy. Patients demographic data, morbidity, and surgical details are reported. **Result:** All cases were males, they were 47, 70, 69 and 86 years-old. All of them presented with acute outlet obstruction symptoms. Chest and abdominal computer tomography and upper endoscopy were always performed. In two cases the surgery was immediate, in two cases the operation was performed about 24 hours after the admission. **Conclusion:** The emergent treatment of strangulated hiatal hernia is an uncommon event, leading sometimes to life-threatening complications. Acute mechanical outlet obstruction, ischemia of gastric wall or perforation and severe bleeding are the reasons for an emergent surgical indication. In stable condition a minimally invasive approach with abdominal cavity exploration and hernia reduction is possible. Robot-assisted approach may be interesting in emergent setting too; problems are related to device availability and operating room staff expertise.

1047

Slipping Rib Syndrome: A Case Report And Literature Review

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Background: Slipping Rib Syndrome (SRS) is a common though frequently overlooked clinical entity, consisting of three features: pain in the lower chest or upper abdomen, a tender spot on the costal margin and reproduction of the pain on pressing the tender spot. **Material and Methods:** A 17 year old male with a 1 year history of severe pain in his left hypochondrium was referred to our consultation and an ultrasound confirmed the diagnosis of SRS of the anterior costal arch of the 9th left rib. The patient underwent a partial resection of the left anterior cartilage of the 9th costal arch. The procedure was uneventful and the patient was discharged on the same day. **Result:** SRS is a benign condition caused by irritation of the lower intercostal nerves due to hypermobility of the 8th, 9th and 10th ribs. False ribs, are more exposed to the syndrome. The severity of pain may vary leading to interferences with activities of daily life. Diagnosis is clinical although more recently, high resolution ultrasound of the costal margin has proven useful in the differential diagnosis of SRS. There is no clear consensus regarding treatment. When conservative treatment fails surgical resection of the affected rib and/or surrounding costal cartilage could be indicated. **Conclusion:** SRS is under diagnosed and is often the underlying cause of referred abdominal and/or chest pain. Knowledge of this condition may lead to its early and proper diagnosis thus avoiding invasive or costly diagnostic evaluation.

1049

Ischemic Vsd Is A Serious Complication. Use Of Ecmo Can Change The Outcomes. Is It Always Feasible?

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Background: VSD post myocardial infarction are serious complications that carrying significant mortality and morbidity. Unfortunately, the timing of the correction of the VSD is controversial. Use of ECMO is an option supporting the timing and the recovering of the injured myocardium and the failed targeted organs. We report a case of an ischemic VSD with no use of ECMO. We are discussing the literature and how the use of ECMO can change significantly the outcomes. **Material and Methods:** a 63-year-old male admitted to our cardiology department after two weeks of chest pain. underwent primary PCI and stent to RCA. 2h post PCI became oliguric acidotic and had cardiogenic shock. TTE revealed a large inferior MI with dysfunction of LV, dilation of RV and a large posterior VSD . After initiation of inotropic support and intra-aortic balloon pump there was some hemodynamic stability. Therefore, after stabilisation, on day 3 he underwent closure of the defect with single patch technique. successfully transferred to ITU but after 12h of severe respiratory decline he expired. **Result:** Looking at the literature similar cases have been successfully treated with the use of ECMO prior of the operation and immediately after weaning from CPB with successful separation from the ECMO and improved till successful discharge from the hospital. We discuss how this serious complication can be optimally treated with better outcomes. **Conclusion:** Use of ECMO in ischemic VSD facilitates the recovery of the infarcted myocardium with a solid surgical repair and avoidance of post-operative complications that can be detrimental to the patient's outcomes.

1069

Look Twice: Coincidental Neurological Presentation On A Patient With Type A Acute-Retrograde-Aortic-Dissection Is Not Always Secondary To Malperfusion !

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Background: Type-A retrograde acute-aortic-dissection is a relatively rare but a mortal pathology, which necessitates immediate surgical treatment. Transient or permanent neurological symptoms at the onset of the pathology are usually secondary to dissection related static-or-dynamic malperfusion of the supra-aortic-branches. **Material and Methods:** 52 years-old male patient admitted to our emergency department for sudden retrosternal pain. A non-complicated type-B acute-aortic-dissection was confirmed by CT-scan angiography and the patient was referred to ICU for routine follow-up. He has developed left sided hemiplegic syndrome with loose of consciousness, few hours following ICU admission. The suspicion of development a type-A acute-retrograde-aortic-dissection is confirmed by head-thoracic CT-scan **Result:** While discussing the operative strategy concerning type-A acute-aortic-dissection, detailed examination of the CT-scan images revealed that responsible mechanism of the neurologic syndrome surprisingly was secondary to an acute thrombo-embolic occlusion of the right-internal-carotid-artery(RICA) without any malperfusion of the supra-aortic branches. Thus the priority was given to RICA occlusion following a multidisciplinary discussion which was treated with percutaneous thrombectomy by neuro-radiologists. A post-procedural head-CT-scan showed important cerebral edema with increased intracranial pressure. Patient was referred to operating room for decompressive right craniotomy which was complicated with post-operative intracranial bleeding. Despite all efforts, the patient was deceased secondary to neurologic complications and his organs are donated with his family permission. **Conclusion:** Our case highlights the importance of examination for all diagnostic studies without concentrating only on the main medical problem. It also underlines appropriate triage of the patient's medical problems by multidisciplinary discussion.

Posters

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Operative Outcomes In Early Versus Delayed Laparoscopic Cholecystectomy For Acute Cholecystitis: A Systematic Review

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Background: Acute cholecystitis presents itself as a heavy disease burden in the world and is one of the most frequently encountered conditions in emergency surgery. The gold standard treatment for it is a laparoscopic cholecystectomy, since the advent of laparoscopic procedures in the 1990s. The timing of laparoscopic cholecystectomies following diagnosis of acute cholecystitis remains a debatable issue in both clinical practice and the literature. **Material and Methods:** This systematic review examined high quality evidence including randomised controlled trials comparing early laparoscopic cholecystectomy (ELC) and delayed laparoscopic cholecystectomy (DLC). Following a literature search on three databases (MEDLINE, EMBASE and COCHRANE), the result yielded 12 studies. Primary outcomes examined differences in operative outcomes in both interventions and complications for patients undergoing delayed laparoscopic surgery. Secondary outcomes examined the incidence of conversion from laparoscopic surgery to open surgery and the total length of hospital stay between ELC and DLC. **Result:** Results showed that there was no significant difference in operative outcomes in ELC or DLC. A portion of DLC patients had a substantial risk of needing intervention while waiting for the procedure. Total length of stay in hospital was shorter for ELC patients as opposed to DLC, which was significant. **Conclusion:** In conclusion, ELC is safe for treating acute cholecystitis and it offers the benefit of shorter hospital stay and a single hospital admission as opposed to DLC patients. However, surgical experience and hospital infrastructures play a pivotal role in providing safe and accessible ELC. There was no difference in morbidity or mortality between ELC and DLC.

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Is It Possible To Predict The Course Of Desmoid Tumours In Pregnancy? A "Wait And See" Approach In A High Risk Pregnancy

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Background: Desmoid tumours are benign overgrowths of fibrous tissue. They account for 0.03% of all neoplasms and usually do not metastasize. Their course could be unpredictable, especially in the ante-natal and post-natal period. **Material and Methods:** We present the case of a pregnant (G1P0) 40 year-old with raised BMI and a personal history of pelvic Desmoid tumour and DVT being treated with Warfarin. Medical treatment (Tamoxifen, NSAID and Goserelin) was utilised prior to pregnancy. **Result:** Warfarin was converted to LMWH and appropriate referrals were made. Fetal medicine and cardiac scans were arranged in a Tertiary Centre and serial growth scans were arranged in our Trust. An obstetric MRI was arranged at 23 weeks to check fetal brain anatomy. Delivery was by elective C-section at 38 weeks; peritoneal biopsy was performed at the same time in a Tertiary Centre. Seedlings of disease were found in POD and bladder peritoneum and biopsy showed foci of decidualisation and no malignancy. MRI 4 months post delivery revealed a more homogenous lesion with regression of focal nodule component. **Conclusion:** Managing pregnancies complicated with desmoid tumours creates debates and controversy because some can be locally aggressive whereas others have an indolent course. A few years back, the cornerstone of treatment was surgical resection, whereas an expanding number of Specialists is now embracing a "wait and see" approach due to the apparent variability in clinical behaviour. Regarding the mode of delivery, although no clear conclusion can be reached from the published literature, this is likely to be based on tumour's site.

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The Relationship Between Sarcopenia And Outcomes In Colorectal Cancer Patients Undergoing Elective Bowel Resection

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Background: Colorectal cancer remains a common cause of cancer death, and with an ageing population, this means that patients undergoing colorectal surgery as part of their treatment are getting older. Current decision making in surgery is often based on chronological age and the subjective opinions of individual surgeons. An objective measurement of the suitability of patients for surgery would be of great utility. We postulate that sarcopenia, assessed on routine CT scans, could potentially fulfil this role as a prognostic indicator. **Material and Methods:** A total of 163 patients who underwent colorectal resection for cancer were eligible for inclusion in the study. Sarcopenia was assessed on pre-operative CT scan at the level of the L3 vertebra, using a free-hand drawing technique and was standardised for patient height. Post-operative data on complications were collected using clinical portal and classified using the Clavien-Dindo scale. Patients were followed up for mortality for 1 year after surgery. **Result:** 19.6% of the study participants were classified as sarcopenic. Sarcopenia was found to be significantly related to BMI ($p=0.007$), 30-day mortality ($p=0.042$) and 1-year mortality ($p=0.046$). In univariate analysis ASA grade ($p=0.016$), tumour stage ($p=0.018$) and sarcopenia ($p=0.043$) were found to be significant independent predictors of 1-year mortality. **Conclusion:** This study demonstrates a significant relationship between mortality at 1-year and sarcopenia in patients with colorectal cancer undergoing elective surgery. CT-based measurement of sarcopenia could be used in the future to augment existing methods of patient risk stratification prior to surgery, perhaps earmarking patients who would benefit most from targeted prehabilitation strategies.

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Thrombocytopenia Constitutes A Risk Factor For Post-Hepatectomy Liver Failure: A Systematic Review And Meta-Analysis

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Background: We performed a systematic review and meta-analysis to determine whether thrombocytopenia constitutes or not a risk factor for post-hepatectomy liver failure (PHLF). **Material and Methods:** We searched MEDLINE from inception until February the 17nd, 2018 for studies reporting cases of PHLF in patients with and without thrombocytopenia (defined as a platelet count below 100 or 150 (G/l)) and/or platelet counts in patients with and without PHLF. Pooled odd ratios for PHLF, as well as mean difference in platelet counts between patients with and without PHLF, were obtained by random effects models. Robustness was tested by subgroups and leave-one out sensitivity analyses. Heterogeneity was assessed using the Q-test and quantified based on I² value. **Result:** We included 15 studies representing 3966 patients. Pooled odd ratio for PHLF in thrombocytopenic patients was of 3.71 (95% CI : 2.51 to 5.48 ; I²=0%). Pooled odd ratio was of 5.53 (95% CI: 2.85 to 10.48) when pooling only studies based on preoperative platelet count, and of 3.13 (95% CI: 1.75 to 5.58) when pooling studies including only patients with healthy liver tissue. The pooled mean difference in platelet counts between patients with and without PHLF was -21.2 (G/l) (95% CI: -36.1 to 6.4) in disfavor of patients with PHLF. When pooling only patients with various qualities of liver tissue, the pooled mean difference was 0.6 (G/l) (95% CI: -21.1 to 22.2). **Conclusion:** Preoperative and/or postoperative thrombocytopenia constitutes a significant risk factor for PHLF in cirrhotic and non-cirrhotic patients.

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Effect Of Bile Acid And Pancreatic Juice In Reflux Esophagitis After Total Gastrectomy In Rat Model.

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Background: Reflux of duodenal contents contributes to the development of esophageal mucosal lesion. Esophagitis after total gastrectomy has been associated with the reflux of duodenal content (biliary and pancreatic juice) into the esophagus. This study is to determine which fraction of the duodenum content reflux, pancreatic juice or bile acids contributes to the development of reflux esophagitis. **Material and Methods:** 8 week Wistar Rat were used. 1.Reflux of Pancreatic juice and Bile(TG) : End-to-end esophago-duodenostomy with total gastrectomy(n=8) was performed to produce pancreatic juice and bile reflux. 2.Reflux of Pancreatic Juice (TG+B):End-to-end esophago-duodenostom y with total gastrectomy. Then, a bypass operation of the upper bile duct was made 25cm below the esophagoduodenostomy anastomosis to produce only pancreatic reflux. Choledocho-jejunostomy was performed. (n=6) 3.Sham group (n=5) Three weeks after operation, all rats were euthanized and the esophagus was evaluated histologically. **Result:** 1.Macroscopic finding: In TG rats, the esophageal wall was thickened and covered with whitish nodular patches . longitudinal ulcerations located primarily in the middle and lower thirds of the esophagus were observed. However, the gross appearance of the esophagus from TG+B group, all showed only scattered erosions.2.Microscopic finding:TG group developed sever infiltration of inflammatory cells and hyperplasia of the epidermis in the lower and middle portions of the esophagus. The inflammatory cell infiltration scores and hyperplasia scores were significantly decreased in the TG+B group compared to TG group. **Conclusion:** The reflux of pancreatic juice alone is probably not significant development of reflux esophagitis after total gastrectomy compared to the reflux of bile and pancreatic juice.

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Reflux Of Duodenal Content Develop Esophageal Squamous Cell Carcinoma

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Background: The incidence of esophageal cancer patients who have undergone distal gastrectomy is increasing recently. Distal gastrectomy is a good model for studying the clinical effects of duodenal content reflux. Individuals with a history of gastrectomy often suffer from sever alkaline reflux esophagitis. We retrospectively evaluated 153 patients who underwent subtotal esophagectomy for thoracic esophageal cancer for the past three years. They were divided into two groups, according to whether or not they had previously undergone a gastrectomy: group 1, comprising 14 patients who had undergone gastrectomy and group 2, comprising 139 patients who had not. The proportion of lower third tumors in patients after gastrectomy was significantly higher compared with that of the patients with intact stomach. These findings suggest that a history of gastrectomy is associated with more lower-third squamous cell esophageal carcinoma. **Material and Methods:** Therefore, I made a rat model, a total gastrectomy followed by esophagoduodenostomy (n=27) was performed to induce chronic duodenal content reflux esophagitis. **Result:** Sever dysplasia in the lower esophagus occurred in 100% (27/27), squamous cell carcinoma(ESCC) was observed in 40%(10/27), and adenocarcinoma(EAC) was observed in 30%(8/27) at the 40th week. Moreover, ESCC developed in places distant from the anastomosis compared to EAC **Conclusion:** This means that histological features may depend on the volume of reflux contents; small amounts of reflux causes ESCC and a large volume of reflux causes EAC. I concluded reflux of duodenal contents developed not only EAC but also ESCC.

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Monocyte Hla-Dr Is A Potential Mortality Predictor In Patients With Complicated Intra-Abdominal Infections – A Review

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Background: Complicated intra-abdominal infections(cIAIs) are still associated with unacceptably high morbidity and mortality rates. Despite the modern management, outcome in some patients' groups differs significantly. Early prognostic evaluation could help to identify the high-risk patients and to correct the treatment strategy. Monocyte HLA-DR(mHLA-DR) has been studied for several years as infectious and sepsis biomarker. We aimed to review the potential prognostic performance of mHLA-DR in patients with complicated intra-abdominal infections. **Material and Methods:** We have searched in PubMed database the literature relating the prognostic value of mHLA-DR in patients with complicated intra-abdominal infections and/or sepsis. Our search terms were "HLA-DR", "mHLA-DR", "complicated intra-abdominal infections", "sepsis", "mortality" and "outcome". **Result:** A total of 7 studies including 395 patients met our inclusion criteria. The data that we found about outcome prediction of monocyte HLA-DR was very homogeneous. Six out of seven studies showed mHLA-DR as a good mortality predictor and only one reported a not significant prognostic performance of this biomarker. **Conclusion:** In this review we observed a strong association between low monocyte HLA-DR expression and poor outcome. Our opinion therefore, is that mHLA-DR could be a promising biomarker for early prognostic evaluation in patients with cIAIs. However, larger multicenter studies with more surgical patients should be performed before using this biomarker in clinical practice.

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The Investigation Of Microbial Translocation With Gfpp Escherichia Coli By The Experimental Mesenteric Ischemia

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Background: Mesenteric ischemia (MI) is associated with high mortality percentages due to the loss of gut barrier function, which predisposes to the egress of commensal microflora from the intestine into the systemic circulation and extraintestinal sites. The aim of study is definition of microbial translocation by the rat model of mesenteric ischemia. **Material and Methods:** 30 male Wistar rats were divided into 2 groups; the 1st one included the 15 animals with ischemia creating by clamping of SMA during the 2h and following 6h of reperfusion which made by the special declipator, and SHAM-group - 15 rats with laparotomy and injection of GFPP without ischemia. The rats in the entire group were anaesthetized by the injection of ketamine. We used the Green-fluorescent protein producing (GFPP) E.coli as a marker of bacterial translocation (BT). The injection of 27,0*10⁸ CFU/ml GFPP was made by the oroduodenal catheter. The liver, spleen, lung, heart, kidney, intestine and mesentery were homogenized. The organ samples were cultured on the Luria-Bertani agar media including ampicillin. **Result:** The positive growth of GFPP was received in 60% cases of the 1st group. However, the SHAM group didn't show the growth anywhere. Comparing SHAM and the 1st group the statistically difference is significant (p<0,01; Fisher=0,0003). Particularly, in the 1st group the much more CFU of GFPP was detected into spleen, liver and kidney (80%). **Conclusion:** To sum up, the BT could be detected by the mesenteric ischemia in the extraintestinal sites, meanwhile the isolated laparotomy can't provide to BT.

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The Translocation Of The Gfpp E.Coli By The Experimental Intestinal Obstruction

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Background: The intestinal obstruction (IO) is a usual complication with remarkable morbidity and mortality rates. The consequential role of pathogenesis of the intestinal disorders belongs to translocation of the intestinal microflora throughout the intestinal wall. The aim is studying of bacterial translocation by the two types of experimental rat-models: intestinal obturation and strangulation **Material and Methods:** We divided the 30 male rats into 2 groups: 1-strangulation and 2-obturation. The 15 animals in the each group were observed on the 24 h during the IO. Animals were anaesthetized by the intramuscular ketamine injection. We designed the obturation model by the clamping of part of small intestine. The strangulation was created by the clamping two sides of intestinal loop and the feeding part of mesentery clamped also. We have injected the 27,0*10⁸ CFU/ml Green-fluorescent protein producing (GFPP) strains of E.coli with oroduodenal catheter before the modelling of IO. The extraintestinal organ samples (liver, spleen, kidney, lung, heart, mesentery nodes and intestine) were homogenized and cultivated on the Luria-Bertani agar. **Result:** In the 1st group the 13,3% of positive growth of GFPP E.coli were registered. The growth of GFPP was detected in 7 rats (46,6%) on the 1st day of obturation. The positive results were definite in all of the organ samples; however the highest level of CFU was obtained in spleen and liver. **Conclusion:** In conclusion, the bacterial translocation is detected in both groups of intestinal obstruction. In the obturation group the frequency migration of GFPP in 3,5 times higher (Fisher=0,047) than the strangulation type of IO.

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Biological Scaffolds From Decellularized Human Placenta Support Pancreatic Tissues In Type-1 Diabetes Treatment.

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Background: Intraportal islet transplantation is a promising approach to restore glucose regulation in diabetic patients. However, considerable islet loss is observed in the peri-transplant period attributed to inflammation, ischemia, ECM disruption and poor angiogenesis. The replacement of damaged tissues is a crucial goal in tissue engineering. Human amniotic membrane gained great interest due to an ECM content rich of positive factors associated with vascular, mesenchymal, and parenchymal cell types. Our goal is to generate viable and functional insulin-secreting biological scaffolds composed of pancreatic islets in amniotic-derived hydrogels to reverse diabetes in vivo. **Material and Methods:** Several hydrogels concentrations (3, 4, 5, 6 mg/mL) were obtained from decellularized amniotic membranes. Porosity and glycosaminoglycans (GAGs), laminin, and hydrossiprolin contents were assessed. Islet-containing hydrogels (scaffold) or islets alone (control) were transplanted in the epididymal fat of diabetic SCID mice. After 21 days, an intraperitoneal glucose tolerance test (IPGTT) was performed. Insulin and CD34 expression in the graft were investigated. **Result:** Scaffold porosity significantly correlated with hydrogel concentration. Hydrossiprolin and laminin concentrations were similar in scaffolds and native amniotic membrane while lower GAGs concentrations were observed. Animals in the scaffold group showed lower blood glucose levels compared to the control group, and a similar glucose clearance during the IPGTT to that of non-diabetic controls. CD34 expression was markedly increased compared to the control group after 21D post-transplantation, associated with a robust insulin expression. **Conclusion:** Incorporation of pancreatic islet into amnion-derived hydrogels enhances islet revascularization and engraftment in vivo, and is a valuable approach to improve islet transplantation outcomes.

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Cutaneous Breast Metastasis In A Patient With A Ventriculoperitoneal Shunt.

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Background: A 57-year-old lady with previous right-sided breast cancer presented with infected malignant cutaneous lesions on the same breast. Safe treatment of a coinciding right-sided ventriculoperitoneal (VP) shunt posed further management complexity. We discuss surgical planning in such cases, the selection criteria for electorchemotherapy (ECT), and optimal positioning of VP shunts in patients with history of breast cancer. **Material and Methods:** Case report based on a patient referred to breast clinic with recurrent disease and ventriculoperitoneal shunt situated in the same breast. Discussion includes any literature related to this as well as the role of ECT. **Result:** There is only case-based data to suggest recurrence may be linked to VP shunts. The role of ECT in cutaneous breast metastasis is significant offering moderate benefit with minor complications. **Conclusion:** Cutaneous metastasis is most commonly found in patients with breast cancer. Management of this includes surgical, electrochemical and chemotherapy options. There is only limited case-based literature regarding the management of patients with pre-existing VP shunts and recurrent breast cancer, and none relating to cutaneous tumour involvement. In such cases, clinicians experience and balance of risk and benefit must be used with the patient's co-operation.

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The Use Of A Circular Illuminator To Improve The Signal-To-Noise Ratio In Cerebral Intrinsic Optical Imaging.

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Background: The use of intrinsic optical imaging (IOI) in neurosurgery is limited due to glare effects. The use of a circular illuminator (CI) has been advocated to reduce overall glare effects. Here, we report our experience with a CI elaborated in house. **Material and Methods:** Two rows of circularly disposed light-emitting diodes fixed on a ring of plastic were adapted to a regular neurosurgical microscope. Two fresh sheep's brains were used. Two conditions were tested twice; the first one with the microscope positioned with an angle of 0°. The second one with an angle of 75°. **Result:** The illumination with the circular device produced a mean of 2192 and 2156 white pixels (WP) at 9, 10 and 12 [V] (0°) and a mean of 3952 and 4537 WP at 75°. **COMPARISON WITH EXISTING METHOD:** WP obtained with the standard illumination between 5% and 100% of light intensity ranged from 231 to 77906 (mean: 25004) and 196 to 77963 (mean: 25717) at 0°. At 75°, results ranged from 608 to 68095 (mean: 19825) and 641 to 75618 (mean: 23087). WP obtained between 5% and 50% of light intensity ranged from 231 to 478 (mean: 312) and 196 to 468 (mean: 301) at 0°. Higher values were obtained at 75°, ranging from 608 to 1478 (mean: 1200) and 641 to 1372 (mean: 1272). **Conclusion:** The use of a standard microscope illuminator, positioned perpendicular to the operating with a mild light intensity is the most effective setting for IOI procedures.

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Antibiotic Resistance Of A. Baumannii In Kazakhstan

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Background: Acinetobacter baumannii is opportunistic microorganism that causes infectious diseases against the background of immunosuppression in patients of resuscitation and intensive care units, trauma, surgery and burn wards. Currently, in many countries there is an increase in the frequency of occurrence of acinetobacter infections, accompanied by rapid spreading of pathogens resistance to antimicrobial drugs. The aim is studying the antibiotic resistance of A. baumannii in Kazakhstan. **Material and Methods:** A. baumannii were isolated from clinical material of patients in 5 large hospitals of the Republic of Kazakhstan. Species identification was carried out by the method of matrix-associated laser desorption/ionization – time-of-flight mass spectrometry (MALDI-TOF MS) in the Shared laboratory of Karaganda Medical University. Determination of antimicrobial susceptibility was performed and evaluated according to the CLSI serial dilution method. Data analysis – WHONET 5.6. **Result:** The proportion of A. baumannii was 17% in the total number of nosocomial strains in 2015-2018. 57% of 211 tested A. baumannii were isolated from patients of resuscitation profile, 35% – from therapeutic patients, 8% from surgical patients. 50% (95% CI 66.3-81.8) isolated strains were resistant to carbapenems (meropenem, imipenem, doripenem), 54% – resistant to gentamicin (95% CI 31.7-68.3) and amikacin (95% CI 45.7-63.3). The proportion of strains resistant to ciprofloxacin was 85.3% (95% CI 77.7-90.7). A. baumannii resistant to polymyxin was not recorded. **Conclusion:** There is a high level of A. baumannii strains resistant to antimicrobial drugs with expressed XDR formation in hospitals of Central Kazakhstan.

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Current Use Of Tranexamic Acid In Neck Of Femur Fracture Surgery

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Background: Tranexamic Acid (TXA) use in elective hip and knee arthroplasty is an established protocol, and routinely used. Concerns over increased incidence of venous thromboembolism (VTE) has limited its use, however recent studies have shown this to be largely untrue. Currently there are no widely recognised protocols for routine use in Neck of Femur (NOF) fracture surgery. **Material and Methods:** We carried out a retrospective audit of a busy district general hospital, over a three-month period. We identified patients from our NOF register. Anaesthetic charts, Operative and patient notes were subsequently examined to identify the operation; use of TXA intraoperatively or thereafter; estimated blood loss (EBL); any blood transfusion; Pre- and post-operative Haemoglobin (Hb) and Haematocrit; and any medical complications or VTE up to 4 days post-operatively. **Result:** A total of 81 patients had valid data. 25% had documented EBL. 31 (28%) were given TXA, mostly 1g at induction with a mean EBL of 241ml, mean total Hb drop of 18g/L and an average of 2 units of PRBC transfused. No new VTE complications, but 2 wound infections. Of patients not given TXA; mean EBL was 290ml, mean total Hb drop of 26g/L, and an average of 3 units of PRBC transfused. There was 1 wound haematoma, 1 PE, and 1 ischaemic limb. **Conclusion:** We found variable use of TXA. There was demonstrable reduction in mean blood loss via EBL and post-operative haemoglobin. We found no direct complications of TXA in the short term. This provides evidence to suggest more routine TXA use in NOF fractures.

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The Incidence Of Right Sided Diverticulitis Presenting With Acute Abdominal Pain

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Background: Acute abdominal pain encompasses a range of pathology, with right iliac fossa pain being the most common presentation. Diverticulitis has a high incidence, however classically presents with left-sided pain. We therefore wished to evaluate its right-sided counterpart, analysing the incidence and demographics. In addition, we also looked further into the imaging protocols for such presentations. In particular, the Royal College of Surgeons in England have recommendations for imaging in those above 50 years of age, and we speculate whether there is scope to lower the age recommendations for imaging. **Material and Methods:** We analysed data in a retrospective manner, of all patients presenting with right iliac fossa pain, in a large district general hospital through 2016. Inclusion criteria involved demographics, imaging reports, theatre details, and histopathology results. We excluded those aged under 18. All patients above the age of 40 received imaging in the form of Computer Tomography. **Result:** In 2016, we had 1052 presentations of right iliac fossa pain. Of these, 395 were male, and 657 were female. The mean age was 27.1 years. We split our results primarily between those aged 40-50, and those above 50. The incidence of right-sided diverticulitis was 5% and 9%, respectively. Overall incidence was 8%. **Conclusion:** With a statistically significant incidence of right sided diverticulitis, particularly increasing with age, it is an important differential to consider in acute abdominal pain. Of note, such presentations are now occurring in younger populations, which raises the case for considering imaging in such patients.

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Outcomes Of Surgery Following Chemoradiotherapy For Anal Cancer: A 10-Year Retrospective Study

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Background: Anal cancer accounts for less than 1% of all cancers but carries considerable morbidity and mortality. We reviewed clinicopathological outcomes for patients undergoing surgery following chemoradiotherapy (CRT) for anal cancer. **Material and Methods:** A retrospective review of casenotes from patients undergoing surgery for anal cancer from 2008 -2018 was performed. Patients were identified from the anal cancer MDT records and the departmental surgical logbook. **Result:** Forty patients were identified with a median [IQR] age of 62 [18.25] years. Out of them, 11.1% were T1, 47.2% T2, 13.8% T3 and 27.7% T4. The 6 cases of Residual disease had Median (IQR) time from completion of CRT to surgery (months) of 6.4 (4.5) and an R0 rate of 6 (100%) compared to 14 (12) and 22 (64.7%) respectively for the cases with Recurrent Disease 25 patients (62.5%) underwent flap reconstruction of the perineum. Post-operative complications were identified in 25(62.5%) patients, 18(72%) of which were Clavien-Dindo I-II and 7 (18%) were III-IV. There was one 90-day mortality. The overall 1, 3, and 5-year survival was 76.4%, 47.8% and 35.2% respectively. Survival was significantly lower in R1 resection margin (p=0.01), but no difference was found between residual or recurrent disease (p=0.98) or with respect to T stage (p=0.71) **Conclusion:** Chemoradiotherapy remains the gold standard for the treatment of anal cancer, with salvage surgery reserved for cases of residual or recurrent disease, or for palliation. We report a median time from completion of CRT to surgery of 12 months, an R0 resection rate of 70%, and 5-year survival of 35.2%.

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Shoulder Stabilization Technique Using The Medial Glenohumeral Ligament In Patients With Buford Complex: A Preliminary Report Of Three Cases.

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Background: The Buford complex is an anatomic variation defined as the association of a cord-like middle gleno-humeral ligament (MGHL) and an absent antero-superior labrum. It can be challenging to properly identify on preoperative imaging and remains mostly an arthroscopic finding. It may however lead to problematic situations when encountered during an arthroscopic soft tissue stabilization procedure, as there are no specific surgical recommendations in such cases. Moreover, reattaching the MGHL to the anterior border of the glenoid rim has traditionally not been recommended, as it theoretically leads to severe restriction in external rotation. **Material and Methods:** This case series includes three patients who underwent arthroscopic stabilization for anterior traumatic gleno-humeral instability associated with a Buford complex. We describe a novel stabilizing technique consisting in using the cord-like MGHL to reconstruct a neo-labrum, associated with an antero-inferior gleno-humeral ligament plication. **Result:** At one year postoperative, there was no new episode of glenohumeral dislocation or subluxation. SSV ranged between 85-90%. All three patients went back to their previous level of sports and work activities and recovered satisfactory range of motion. **Conclusion:** Glenohumeral stabilization using the cord-like MGHL of the Buford complex may be an efficient procedure, with satisfactory outcome at one year. More studies are needed to confirm these findings in a larger population with a longer term follow-up.

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The Role Of Enterobacteria In Development Of Intra-Abdominal Infection (Iai)

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Background: The data presented in the study are part of the global program for monitoring the sensitivity of gram-negative microorganisms SMART **Material and Methods:** 100 samples of operational material were collected in 2017-2018 in Central Kazakhstan according to SMART criteria for patients with intra-abdominal infection (acute appendicitis, acute cholecystitis and peritonitis). Identification of microorganisms was carried out using the method of matrix-associated laser desorption/ionization - time-of-flight mass spectrometry (MALDI-TOF MS) in the share use laboratory of the Karaganda Medical University. Sensitivity to antibacterial drugs was determined by the disc-diffusion method, interpretation of the results in accordance with the criteria of CLSI 2012 **Result:** In 89% of IAI cases Enterobacteriales family were the cause of infection. In 53% of cases E.coli was isolated, in 17% - K.pneumonia. High antibacterial activity to E.coli was shown by polymyxin - 100% and carbapenems - 95% (95% CI 0.2-23.2). Aminoglycosides were effective in 80-88% (95% CI 3.2-32.3), cefotaxime - 85% (95% CI 1.5-29.5), cefepime - 87% (95% CI 4.8-34.6), ciprofloxacin - in 85% (95 % CI 3.8-37.4). ESBL - producing gram-negative bacilli were isolated in 12.5%. **Conclusion:** E.coli remain the leading causative agents of intra-abdominal infection in the surgical department. The emergence of ESBL-producing Enterobacteriales should be noted. The findings suggest the importance of intra-abdominal infection causative agents monitoring and tracking the dynamics of antibacterial activity

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Laparoscopic Surgery For Benign Conditions - An Experience At A Newly Established Laparoscopic Colorectal Unit

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Background: To assess the outcomes of colorectal surgery, for benign conditions, in a newly developed laparoscopic unit at a district general hospital. **Material and Methods:** Between 2016-18 colorectal patients treated by a single surgeon, for benign conditions, were identified from electronic patient records. Patients with surgery for neoplasia were excluded. Patient demographics and surgical details were recorded. Primary outcomes were leak rate, hospital stay, morbidity and mortality. **Result:** 70 patients were identified. 15 were eligible for our study. Median age was 57 years. Majority were females(60%). Indications for surgery were crohns(33.3%), rectal prolapse(20%). While 13.3% each for diverticular disease, sigmoid volvulus & ulcerative colitis. 6.7% had surgery for multiple inflammatory polyps. Rectopexy & right hemicolectomy was carried out in 20% each, while sigmoid colectomy was carried out in 13.3%. Rest of operations were completion proctectomy, Hartmans, panproctocolectomy, restoration of bowel continuity, subtotal colectomy & subtotal proctocolectomy. Conversion rate was 6.7%. There was no anastamotic leak. Re-operation rate was 6.7%, which was for refashioning of stoma. 30 days readmission rate was 13.3%. Post operative complications were prolapsed stoma(6.7%) & superficial wound infection(6.7%) . There was no 90 days mortality. **Conclusion:** Primary outcomes at our newly established unit are explicitly compatible with international standards.

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Intestinal Intussusception In Adult, An Unusual Case Report

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Background: Intussusception is a rare etiology in the practice of the general surgeon, being more common in the age group up to 2 years. In adults, it appears in a frequency of 1 to 5% around 50 years old. **Material and Methods:** CASE REPORT: LI, female, 47 years old, admitted to the emergency room of a hospital with diffuse abdominal pain and vomiting for 2 days. This is the third time she returns to the service, presenting worsening of the symptom. She denies enterorrhagia and fever. She denies comorbidities but reports that 26 years ago she performed Ventricular-Peritoneal Derivation without subsequent follow-up. In the physical examination, the abdomen is less distended, RHA increased, diffuse palpation pain mainly in the lower right quadrant, with palpable mass in this quadrant. Computed Tomography (CT) of the abdomen was performed, showing an image of ileocolic intussusception. The exploratory laparotomy was indicated, with the reduction of ileocolic intussusception, absence signs of suffering of the intestinal loops, and a palpable tumor 20 cm from the ileocecal valve. Opposed by enterotomy in the contra-mesenteric face, showing a lesion of approximately 2.5 cm in diameter, regular and of submucosal appearance. Restrained the lesion with a linear stapler and performed an enterorrhaphy. On the 3rd postoperative day (PO), patient presented worsening of pain in the region of the surgical wound (SW), which was showed with a secretion of blood and pus and surrounding cellulite. Antibiotic therapy was started with cirprofloxacin and metronidazole and withdrawn of one point for better drainage of secretion, which ceased at the 8th PO. She was discharged in the 10th PO with clean SW and absence of erythema. Anatomopathological material showed ulcerated chronic ileitis with presence of inflammatory component with large numbers of neutrophils. Faced with the possibility of neoplastic lesion, a lamina revision was performed, which confirmed the diagnosis. In the ambulatory follow-up 2 months after the surgery, she did not present any intercurrance and is waiting for a colonoscopy. **Result:** Intussusception as a cause of acute obstructive abdomen in adults that appears at a frequency of 1 to 5% near at the fifth decade of life. The most common etiologies include adhesions, GIST and Meckel's diverticulum, while pathophysiology involves a neoformation that functions as a traction element for intestinal invagination. This can evolve to ischemia, necrosis and perforation if left untreated. The clinical picture and physical examination in adults are not very specific, showing

signs and symptoms of an obstructive condition. Its diagnosis is suggested by an acute abdomen x-ray, which is

not very specific, and the USS and CT of the abdomen are shown as the most suggestive signs of intussusception (target signal). **Conclusion:** The treatment is surgical and there is controversy between block resection and more conservative resection. In the case of the patient presented in this case report, it was chosen to resection only the neoformation that was well delimited, without enterectomy, due to the intraoperative findings.

900

Surgical Treatment Of Pancreas Pseudocyst, A Case Report.

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Background: To report a case of pancreatic pseudocyst due to severe pancreatitis in a patient in adulthood. **Material and Methods:** Revision of medical records, analysis of the complementary exams and literature review. **Result:** W.P, 33, female, referred for an evaluation of pseudocyst of the pancreas. A history of severe acute pancreatitis of probable drug etiology due to the frequent use of medications for the relief of chronic pain. At the physical examination, the patient was in good general condition, pain the deep palpation of the epigastric region. The complementary exam presented by the patient showed pseudocysts of pancreas in the body and tail without septation and two hepatic nodules suggestive of focal nodular hyperplasia (UFH) on computed tomography of the abdomen. We opted for outpatient follow-up. However, after a year of the last image examination, the pseudocyst was 7.8 cm in body and tail of the pancreas and without alterations of the pancreatic function tests. Patient was submitted to the attempt of echo-endoscopic drainage, but this did not show efficacy. Median laparotomy surgery was indicated. The technique used was a cystogastric anastomosis of the posterior wall of the stomach with pseudocyst wall of the pancreas. Still intraoperatively, a biopsy was performed on the liver lesion for diagnostic confirmation. The pathology of the lesion in the liver confirmed the finding of UFH. **Conclusion:** Pseudocysts of pancreas are complications in cases of severe acute pancreatitis and should be approached through minimally invasive procedures or by conventional surgery. The follow up with imaging tests are for staging and optimizing the best treatment.

901

Role Of Magnetic Resonance With Hepato-Specific Contrast In The Differentiation Of Benign Hepatic Lesions.

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Background: . To report Magnetic Resonance (MR) for differential diagnosis. **Material and Methods:** Revision of medical records, analysis of the complementary exams and literature review. **Result:** Hepatocellular adenoma (HA) is the third most prevalent cause of benign liver neoplasia. Focal nodular hyperplasia (FNH) is the second most common benign hepatic lesion. These lesions are more prevalent in young women in the 20-40 age group. CASE REPORT. PSD, female, 21 years old, obese grade III, hypertensive, use of OCP for 4 years. During the investigation of abdominal pain with ultrasound (US) of abdomen, hepatic nodule is found. The MR and CT scan of the abdomen revealed a well-defined, heterogeneous liver mass with contrast enhancement with a size of 8.9 cm in segments II and IV suggesting FNH or adenoma and hepatic steatosis. Indicated biopsy of hepatic nodular lesion by laparoscopy, having diagnosed hyperplastic lobular alterations and portal fibrosis with irregular septa and nodular transformation sketch, compatible with focal nodular hyperplasia. LFC, female, 33 years old, when performing routine gynecological examination discovers hepatic nodule. The patient was asked for a total US abdomen where the nodule showed 5.4 cm. The CT and MR of the abdomen showed liver nodules in segments II, IV, VI and VII. After 3 months of an upper abdomen MR with hepato-specific contrast, was made the diagnosis of hepatic adenoma. **DISCUSSION.** The characterization of lesions of hepatocellular nature is of great clinical importance, especially in lesions larger than 4 cm, since prognoses and conducts are different. Hepato-specific contrast MR is a valuable method for characterization, based on the different patterns of uptake and retention of gadoteric acid (GA). FNH is an unencapsulated lesion characterized by multiple nodules composed of normal hepatocytes. Because of the absence of malignant potential and the low rate of complications, FNH generally requires a conservative approach. HA presents lesions of 5 to 10 cm in diameter, surrounded by a capsule, presenting a risk of malignancy. Therefore, it is essential to reach a correct diagnosis of these lesions, reducing the need for biopsies, which are not free from morbidity. Since GA can be specifically captured by hepatocytes and excreted in bile. Thus, if there is no presence of viable hepatocytes or biliary canaliculi as in HA there is no uptake of GA in the hepatobiliary phase; already in the FNH, GA uptake occurs because it maintains normal architecture of hepatobiliary parenchyma. The FNH present a classic pattern of

radiological findings, the central scar signal. When there is no classic scar in focal nodular hyperplasia, the differentiation between the two entities becomes difficult. **Conclusion:** The use of contrast in the hepatobiliary phase may reduce the need for invasive diagnostic procedures and complementary evaluation by other image tests and decrease the need for follow-up examinations.

905

5 Year Outcomes For Triple Negative Breast Cancer: A Single Centre Experience

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Background: Introduction: Triple-negative breast cancer (TNBC) represents an aggressive type of breast cancer, with poor outcomes and high risk of recurrence. **Material and Methods:** Methods: A database of all patients diagnosed with breast cancer is prospectively maintained in our unit. Using this, all women diagnosed with TNBC between January 2012 and December 2014 were identified and included. Exclusion criteria included those with recurrence of a previous breast cancer, patients who were partially managed outside of our institution, and male patients. **Result:** Results: 58 patients were triple-negative (10.6%), of which 20 were node positive and 1 was metastatic at time of presentation. 53 went on to have surgery, (27 WLE, 26 Mastectomy). 28 had neoadjuvant chemotherapy whilst 22 had adjuvant chemotherapy. 4 had neoadjuvant radiotherapy compared with 44 adjuvants. 5 were identified with local recurrence showing metastatic disease, with 11 metastatic in total; mean time to metastasis was 17.3 months from first presentation (range of zero to fifty-five months). The mean length of follow up was 48.9 months (range 1 – 82). Seven patients (12%) were confirmed to have died during follow up; mean age at death was 62 years (range of twenty-three to eighty-two). Mean time to death was 29.29 months (range 7 – 63). **Conclusion:** Conclusion These results compare with national and international morbidity and mortality rates, highlighting the aggressive nature of TNBC.

909

Enhancing Human Amniotic Epithelial Cells Immunomodulatory Properties Using Interferon Gamma

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Background: Human amniotic epithelial cells (hAEC) gained great interest in regenerative medicine due to their regenerative, immunomodulatory and anti-inflammatory properties. Using these cells in combination with islets could improve islet engraftment and survival after transplantation in diabetes recipients. hAEC express the MHC class I antigen HLA-G and HLA-E, involved in immunomodulation. However, these expressions shows variations, decrease during culture and can be scarce, especially concerning HLA-E. Interferon-gamma (IFN- γ) promotes HLA-G expression in thymic and amniotic tissues. In this study, we assessed the cytokine-induced expression of HLA-G/HLA-E in hAEC. **Material and Methods:** hAEC were cultured in 25cm² flasks for 24H, and were then incubated in medium containing 0, 10, 25, 50, 100, 200 or 500IU/mL human recombinant IFN- γ for 24–48H and assessed by flow cytometry for CD105, CD90, CD326, SSEA-4, HLA-G and HLA-E. **Result:** While HLA-E was weakly expressed in hAEC in normal conditions (6,5%), IFN- γ exposure induced a massive increase of HLA-E expression (>90%, 7.6–13.4 fold increase) in all conditions tested. HLA-G expression increased in a time-dependent manner (fold increase: 1.1–2.1 after 24H vs 1.7–3.5 after 48H), but not in a dose-dependent manner. CD105 (1.3–3.5) expression levels were increased with no effect of exposure time or concentration. **Conclusion:** These results confirm that IFN- γ induction of HLA-G/HLA-E expression occurs in the human amnion even at low doses (10U/mL). Adjusting IFN- γ concentrations to low doses unaffacting islet function but enhancing MHC class I antigen expression could allow preconditioning of islet cells-hAEC coculture or heterospheroids before transplantation to potentialize hAEC immunomodulatory properties and improve islet survival and engraftment.

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Intestinal Intussusception In Adult, An Unusual Case Report

Lisandra Datysgeld Da Silva ^a, Natassia Alberici ^a, Joao Gabriel Quevedo ^a, Raphael Raphe ^a

^a Faceres, sao jose do rio preto, Brazil;

Background: Intussusception is a rare etiology in the practice of the general surgeon, being more common in the age group up to 2 years. In adults, it appears in a frequency of 1 to 5% around 50 years old. The most common etiologies include adhesions, GIST and Meckel's diverticulum, while pathophysiology involves a neoformation that functions as a traction element for intestinal invagination. This can evolve to ischemia, necrosis and perforation if left untreated. The clinical picture and physical examination in adults are not very specific, showing signs and symptoms of an obstructive condition. **Material and Methods:** Revision of medical records, analysis of the complementary exams to which patients were submitted and literature review. **Result:** In the case of the patient presented in this case report, it was chosen to resection only the neoformation that was well delimited, without enterectomy, due to the intraoperative findings. **Conclusion:** The treatment is surgical and there is controversy between block resection and more conservative resection.

912

Retrospective Study Of Patients With Ulnar Styloid Fracture Treated By Bioabsorbable Implant Activapin® Osteosynthesis.

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Background: Distal radius fractures (DRF) are often associated with ulnar styloid fractures (USF). When the distal radio-ulnar joint is unstable, we treat USF by osteosynthesis with metal pin. However, these implants usually need to be removed later. Bioabsorbable implants may be a good alternative. These materials are transformed in acids metabolized by our organism. They are recognized as a safe method to fix fractures but only a few studies have been conducted on the subject. Foreign body reactions or bone lysis have been reported. In this study, we analyze bioabsorbable pin made with poly lactic-co-glycolic acid and, if needed, triangular fibrocartilage complex (TFCC) reinsertion to treat USF. **Material and Methods:** 34 patients with DRF and USF were included. All were treated with a plate for DRF and Activapin® for USF. 12 underwent TFCC reinsertion. At the final follow up, we searched for consolidation, stabilization and complication rate. We examined radiographs for each patient. **Result:** Mean follow-up : 9 months. 18 females, 16 males. Mean age : 47. On the basis of AO classification, 15 DRF were type A and 19, type C. DRF healed without complication. USF were classified according to the level of fracture: 14 base, 12 middle and 9 tip fractures. 27 patients presented a good consolidation. Complication rate was 26% : 7 nonunion, including 1 foreign body reaction. This patient had another surgery because of pain. 1 other patient underwent second surgery for TFCC repair. 2 developed algoneurodystrophy. **Conclusion:** Bioabsorbable pin shows a good consolidation of the fracture and stabilizes distal radio-ulnar joint.

913

Novel Biodegradable Magnesium Alloy Clips Compared With Titanium Clips For Hepatectomy In A Rat Model

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Background: Background: The use of surgical metal clips is crucial for ligating vessels in various operations. The currently available metal clips have several drawbacks; they are permanent and interfere with imaging techniques such as computed tomography (CT) or magnetic resonance imaging and carry the potential risk of endo-clip migration. We recently developed a novel magnesium (Mg) alloy for biodegradable clips that reduces artifacts on CT imaging. This study aimed to examine the tolerance, biodegradability, and biocompatibility of the Mg alloy clips compared with those of standard titanium (Ti) clips in hepatectomy. **Material and Methods:** Materials and Methods: Thirty Wistar rats were divided into two groups (groups A and B). The vascular pedicle including hepatic artery, portal vein, bile duct, and hepatic vein of the left lateral lobe was ligated with the Ti clip in group A or the Mg alloy clip in group B, and then the left lateral lobe was removed. The rats were sacrificed at 1, 4, 12, 24, and 36 weeks after surgery; clinical and histological evaluation was performed. Absorption rate was calculated by measuring clip volume. **Result:** Results: Mg alloy clips are safe and effective in vessel ligation for hepatectomy and advantageous in reducing artifacts in CT imaging compared with Ti clips. They show biodegradability over time. No side effects occurred. **Conclusion:** Conclusions: The new biodegradable Mg alloy clips are safe and feasible in vessel ligation for hepatectomy in a rat model and reduce artifacts in CT imaging compared with standard Ti clips.

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Doctor, Is It Really A Chest Infection? Testicular Tumour With Lung Metastases: An Unusual Presentation

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Background: Lung metastases are seen in approximate 10% of patients with testicular cancer. This is less common than other malignancy. It is because testicular cancer is most commonly picked up by patients through self-examination. However, in this case report, we described an unusual presentation of testicular tumour with non-specific respiratory symptoms which was subsequently diagnosed as lung metastases from teratoma of the right testis. **Material and Methods:** A young gentleman presented with cough with green sputum to his GP and diagnosed with left upper lobe empyema by CT after having an abnormal CXR. He was sent home with antibiotic but represented with generalised unwell and atraumatic hip pain one month after. Imaging showed osteomyelitis of left iliac bone and worsening of left lung abscess. He then underwent left upper lobectomy and histology revealed embryonal carcinoma. Subsequent ultrasound revealed right testicular masses and he underwent orchiectomy plus chemotherapy and radiotherapy. It is unusual for testicular tumour to present with respiratory symptoms instead of testicular lump. **Result:** Testicular cancer is the most cancer malignancy in man between 20-34 years old. The presence of metastases in patients with malignant tumours is a sign of advanced systemic disease. These patients, however, still experience a high survival rate after treatment of combined chemotherapy and surgery. The usual practice is to remove all residual tissue after chemotherapy of metastatic non-seminomatous tumors. **Conclusion:** Common malignancies can present with unusual clinical complaints. High degree of suspicion is needed when an apparently well young patient present with recurrent, non-specific respiratory symptoms.

916

Role Of Magnetic Resonance With Hepato-Specific Contrast In The Differentiation Of Benign Hepatic Lesions.

Lisandra Datysgeld Da Silva ^a, Natassia Alberici ^b, Joao Gabriel Quevedo ^b, Raphael Raphe ^b

^a Faceres, sao jose do rio preto, Brazil; ^b Faceres school of medicine, sao jose do rio preto, Brazil;

Background: Hepatocellular adenoma (HA) is the third most prevalent cause of benign liver neoplasia. Focal nodular hyperplasia (FNH) is the second most common benign hepatic lesion. These lesions are more prevalent in young women in the 20-40 age group. To report Magnetic Resonance (MR) for differential diagnosis between FNH and HA. **Material and Methods:** Revision of medical records, analysis of the complementary exams to which patients were submitted and literature review. **Result:** The characterization of lesions of hepatocellular nature is of great clinical importance, especially in lesions larger than 4 cm, since prognoses and conducts are different. Hepato-specific contrast MR is a valuable method for characterization, based on the different patterns of uptake and retention of gadoxetic acid (GA). FNH is an uncapsulated lesion characterized by multiple nodules composed of normal hepatocytes. **Conclusion:** The use of contrast in the hepatobiliary phase may reduce the need for invasive diagnostic procedures and complementary evaluation by other image tests and decrease the need for follow-up examinations.

920

Evaluation Of An Advanced Training Program In Laparoscopic Gynaecological Surgery

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Background: we present our experience in the design and development of a training program in advanced laparoscopic surgery for gynaecologists, as well as the results of its face validity **Material and Methods:** in a 2 days theoretical-practical course, a total of 69 participants contributed to this evaluation. Data included in the study have been obtained throughout 5 workshops held between 2016 and 2018. The courses consist of a practical session (15 hours) and a video-session (1 hour). Practical part involves hands-on box trainer tasks where attendants practice the basic dissection manoeuvres in organic tissue and hands-on live porcine model to carry out pelvic and para-aortic lymphadenectomy. At the end of the course, students subjectively evaluate different topics such as the educational aspects and the organization of the training program by means of a questionnaire. **Result:** About 80% of them were in accordance with the total duration of the course while 20% considered that, it should be of longer duration. Around 95% of the attendants consider correct the distribution theory-practice. Regarding skills self-assessment, about 98% of the participants considered that they had improved much, but only the 69% considered themselves qualified to perform trained procedures on patients. Finally, the degree of satisfaction with regards to organization of the course was 8.6 points over 10 **Conclusion:** our training program for Advanced Laparoscopic Gynaecology was very well accepted and has showed a high level of satisfaction. It allowed participants to gain knowledge and to improve skills, thus providing confidence to the application of learned techniques in the clinical practice.

921

Development And Validation Of A Laparoscopic Simulation Model For Colposacropexy

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Background: To create a novel pelvic floor surgical simulation model for training of laparoscopic suturing mesh in the colposacropexy and to present evidence regarding its validity as a training tool **Material and Methods:** This study included an assessment about utility and reproducibility of the simulator respect to women pelvic floor and the evaluation of the model as a training tool. The model was created using resin, silicone, a mesh and a pig muscle wall. The tool was used and evaluated by 32 gynaecologists during a course for the learning of laparoscopic colposacropexy. The assessment was made with a structured questionnaire about the anatomical integrity and the assessment to the most important stiches of the mesh fixation. A 5 point Likert scale was used for this evaluation **Result:** Participants considered the reproducibility of the pelvic size with $4,2 \pm 0,31$, of stiches on levator ani muscles with $4,5 \pm 0,74$ and the reproducibility of sacrospinous ligament fixation with $4,8 \pm 0,24$. Participants strongly believed that this model should be included in the laparoscopic colposacropexy training programs. Finally, overall impression of the model acquired a score of $8,1 \pm 0,41$ over 10 **Conclusion:** This novel laparoscopic surgical simulation model allows practice the stiches of mesh fixation in the laparoscopic colposacropexy to achieve the surgeon competence before of real surgery on the patient

922

Assessment Of Sheep As An Experimental Model For Cervical Surgery Training

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Background: Thyroidectomy is often accompanied by cervical lymphatic emptying as a consequence of a carcinogenic process. For this reason, an anatomical knowledge and specific skills for vascular, nervous and lymphatic dissection are required. The aim of this study is to determine the similarity between ovine model and human for these surgeries and if this model allows surgeons to improve specific surgical skills **Material and Methods:** Sixteen specialists in head and neck surgery participated in this study. Surgeons performed the thyroidectomy and cervical lymphatic emptying during an experimental training course. The evaluation was carried out using questionnaires that used 5-likert scale. This study was approved by the Institutional Ethics Committee (CEEACCMIJU) and the Government of Extremadura (Directive 2010/63 / EU) **Result:** The mean averages in terms of similarity to the human were 3.19 ± 0.83 for anatomy, 3.44 ± 0.73 for surgical approach, 4 ± 0.82 for tissue similarities, $3.81 \pm 0,75$ for surgical manoeuvres, 3.94 ± 0.68 for dissection, 3.94 ± 0.93 for bleeding. In addition, the students rated with 3.75 ± 1.24 points the use of this model for the improvement of surgical skills **Conclusion:** Although the surgical approach and anatomy of the model are not similar to humans, they can become a training model for neck surgery because it has similarity in tissues, nerves, vessels, bleeding, dissection and surgical maneuvers that present the human patient.

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Assesment Of The Sheep For Cryobiopsy And Rigid Thoracoscopy Training

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Background: Cryobiopsy and rigid thoracoscopy are less invasive compared to conventional surgery, however are advanced procedures that require specific training. Our objective was to assess the sheep for cryobiopsy and rigid thoracoscopy training **Material and Methods:** This study was approved by our Institutional Ethical Committee and the Government of Extremadura, following the guidelines of the Directive 2010/63/EU. Twenty-one pulmonologists, who attended a 2 day course on interventional pulmonology training, participated in this study. The course consisted on 6 workshops to train different procedures on animals and simulators. Cryobiopsy and rigid thoracoscopy workshops were trained on sheep. After the course, participants evaluated animal training by completing a questionnaire scored on a 5-point scale **Result:** Training on this animal model was rated as very useful for both cryobiopsy (4.86 ± 0.36) and rigid thoracoscopy. Transferability of the skills acquired to their patients obtained an average score of 4.86 ± 0.36 . Regarding the comparison of this animal model with a real patient, the anatomical structures recognition was considered the most different aspect (4.29 ± 0.99), whereas biopsy collection was considered the most similar one. Participants rated as quite indispensable to train on the ovine model before performing these techniques on a real patient (4.5 ± 0.65) **Conclusion:** The sheep was considered a very useful training model for cryobiopsy and rigid thoracoscopy, believing the participants that the skills acquired are highly transferable to their patients.

926

Femoral Artery Rupture After Hip Replacement Dislocation: A Report Of A Case And Review Of Literature.

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Background: We report on the case of a 73-year old patient with bilateral hip replacement reinforced by a Ganz ring on the left side. **Material and Methods:** The patient presented at the Geneva University Hospital emergency room (ER) after a fall. An X-ray was performed and showed a left hip dislocation complicated by a periprosthetic fracture. The haemoglobin (Hb) level at the time of presentation was 92 g/L. The patient was then transferred to the orthopaedic ward. Eight hours later, the left lower limb became ischemic, with loss of the peripheral pulses. The Hb level dropped to 72 G/L and the angio-CT scan performed showed a hematoma around the iliac muscle with signs of femoral artery compression and active bleeding. The patient was immediately treated by a multidisciplinary team. The vascular surgeons first opened the Scarpa region to stop the haemorrhage by clamping the left external iliac artery. After that, the orthopaedic surgeons removed the Ganz ring. The left common femoral artery lesion was then repaired with an ilio-femoral prosthetic bypass. Hip replacement surgery was carried out a month later. **Result:** In literature, the incidence of iatrogenic vascular injuries during hip surgery is around 0.3%. Often, there can be combined lesions of artery and vein. These usually present as acute ischaemia of the lower extremity or as acute haemorrhages. We found 9% of mortality and 17% of permanent disability rates in patients with arterial trauma following hip surgery. **Conclusion:** Femoral vessels are the most frequently affected vessels in cases of prosthetic migration or proximal femur fractures.

929

Male Breast Cancer: A Single Centre 20 Year Cohort Analysis

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Background: Breast cancer in men is uncommon and understudied. It carries an approximate 1:1000 lifetime risk for men overall. Men with breast cancer tend to demonstrate biologically different subgroups as compared with females and exhibit poorer overall survival rates. We report our single centre 20-year experience. **Material and Methods:** Single centre retrospective cohort analysis of male breast cancer patients diagnosed January 1997 - September 2018 in the Mater Misericordiae University Hospital. Patient demographics, tumour characteristics, surgical treatment, adjuvant therapy, and outcomes were analysed. **Result:** Twenty-three male patients were identified. Mean age 67years (Range: 19-90). Family history of breast cancer 7(30.4%). Mean tumour size 2.73cm(13-60). IDC 20(87%), ILC in 1(4.3%), papillary carcinoma in 1(4.3%), and 1 (4.3%) had DCIS. ER positive (20, 91%), PR positive (17, 74%), 2(9%) overexpressed HER2. 8(35%) had gross nodal disease, with 2(8.7%) finding micro axillary nodal metastases. The majority had mastectomy (21, 91%). Sentinel lymph node biopsy only was performed in 13(57%). 8 (35%) had axillary lymph node dissection at first operation. 2(9%) managed with primary endocrine therapy. Adjuvant chemotherapy 10(43%), adjuvant radiation therapy by 11(52%). Hormonal therapy 16(70%). Follow-up of at least 5 years (n=13), 5-year overall survival 62%. At 5 years 3 (23%) had recurrent disease. **Conclusion:** Male breast cancer forms a small, challenging group for discussion at the multidisciplinary conference. Our findings are consistent with previously published data, demonstrating a peak incidence in the seventh decade of life, with a predominance of ER/PR positive invasive ductal carcinomas, and inferior outcomes as compared with female breast cancer.

935

Reduction Of Cardiopulmonary Bypass-Induced Renal Complications With Methane Administration

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Background: Cardiopulmonary bypass (CPB) can activate blood-borne cellular and humoral immune reactions which may lead to systemic complications, most often to kidney dysfunction. Our previous studies have demonstrated that exogenous methane can reduce ischaemia-reperfusion injuries (Crit Care Med 2012), thus the current goal was to characterize the effects of methane administration on the potentially harmful biochemical and renal consequences induced by experimental CPB. **Material and Methods:** Two groups of anaesthetized Vietnamese minipigs were used; Group I (non-treated, n=5) served as positive control. In Group II (methane-treated, n=5) exogenous methane (2.5 v/v% methane-normoxic air mixture) was initiated through the oxygenator. Standard central cannulation was performed and extracorporeal circulation was maintained for 120 min, followed by an additional 120-min observation period. Renal arterial blood flow (RAF) and hour diuresis were continuously detected; blood and tissue samples were taken at the endpoint to measure whole blood superoxide production and xanthine oxidoreductase (XOR) enzyme activity. **Result:** In the non-treated group RAF and hour diuresis decreased significantly during the CPB and post-CPB periods as well, the whole blood superoxide content and renal XOR activity was elevated. Methane treatment resulted in significantly higher RAF and hour diuresis during the observation period in contrast to the non-treated group and these changes were accompanied by reduced superoxide level and renal XOR activity. **Conclusion:** Our results demonstrate that the exogenous methane given through the oxygenator may be a novel, suitable strategy to decrease the CPB-induced renal injury and oxidative stress, possibly via reduced XOR activity.

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Diagnostic Significance Of Exhaled Methane Detection During Experimental Hemorrhagic Shock

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Background: Severe hemorrhage is accompanied by reduced gastrointestinal perfusion and the loss of mucosal barrier function, therefore early and specific recognition is of importance. Methane is present in the luminal atmosphere, thus we hypothesized that detection of exhaled methane levels could track the intestinal microcirculatory changes non-invasively. Our goal was to validate and compare the sensitivity of this method with an established sublingual microcirculatory monitoring technique in a large animal model of controlled, graded hemorrhage. **Material and Methods:** The experiments were performed on anesthetized, ventilated Vietnamese minipigs (n=6). The animals were gradually bled by 5-5% of the estimated blood volume, 7 times, consecutively, after each step macrohemodynamic parameters (PiCCO) were registered, the exhaled methane level was monitored continuously with photoacoustic laser spectroscopy. The microcirculation of the ileal serosa and the sublingual area were examined by intravital videomicroscopy (Cytocam-IDF, Braedius). **Result:** Statistically significant correlation was found between exhaled methane levels and the superior mesenteric artery flow ($r=0.87$) and the ileal microcirculatory changes ($r=0.64$) as well; these values were significantly reduced by 5% blood loss. Correlation was present between ileal and sublingual microcirculatory parameters as well ($r=0.57$), but the microperfusion in the oral cavity deteriorated only after 10 % blood loss. **Conclusion:** Exhaled methane levels will change in association with intestinal perfusion alterations, and breath methane output reflects the flow conditions of the mesenteric microcirculation. Detection of exhaled methane levels are of diagnostic significance during experimental hemorrhage and indicates blood loss earlier than sublingual microcirculatory changes.

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The Surgical Outcomes Of Laparoscopic Rectopexy For Recurrent Rectal Prolapse.

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Background: Laparoscopic rectopexy (LR) has been increasingly applied for rectal prolapse (RP) since it is safely feasible as a minimally-invasive treatment with lower recurrence rate. However, there are some concerns that the patients with recurrent RP after failed prior treatments may deteriorate surgical outcomes of LR due to post-procedural perirectal inflammatory response. The aim of this study was to evaluate the efficacy of LR for recurrent RP. **Material and Methods:** Clinical records of 75 patients who underwent LR for recurrent RP from May 2006 to August 2018 were reviewed to obtain the following data: 1) patient's demographics; age, gender, length of prolapsed rectum, prior treatments, etc. 2) operative findings; surgical procedure, operating time, blood loss, intraoperative complications etc. 3) post-operative outcomes; postoperative complications, re-recurrence rate, etc. **Result:** 1) The median (range) age of patients was 74 (42-93) years and there were 66 females and 8 males. The median length of prolapsed rectum was 6 (3-20) cm. Prior treatments were perineal procedures in 74 cases and abdominal procedures in 5 cases (including some duplications). 2) Laparoscopic posterior rectopexy and ventral rectopexy were performed in 38 and 37 cases, respectively. Operating time was 204 (106-363) min and blood loss was 23 (5-150) ml. LR was successfully completed in all cases without open conversion, and intraoperative complications were not encountered. 3) Postoperative course was uneventful, but only 3 cases of re-recurrence (4%) were encountered. **Conclusion:** LR is thought to be a suitable treatment even in patients with recurrent RP due to low morbidity and acceptable rate of re-recurrence.

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Treatment Of Acute And Chronic Liver Failure By Using Implanted Cell Engineering Constructions (Cecs)

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Background: Treatment of acute(ALF) and chronic(CLF) liver failure(LF) is the important problem in surgery and using of new biotechnologies(cell implantation) at LF-treatment is the actual aim. **Material and Methods:** LF was modeled on Wistar rats: ALF-by resection of 75% of liver, CLF-by means of CCl₄. Isolated liver cells(LC) and multipotent mesenchymal stromal cells(MMSC) were obtained by standard procedure. Suspension of allogeneic LC(2,5-4,0x10⁶cells/cm³) and MMSC(0,5-0,8x10⁶cells/cm³), immobilized on biodegradable matrixes «Sphero®GEL» were used as CECs. The animals were divided into 4 groups: 2 controls without treatment: gr.1(ALF,n=25)-injected saline into mesentery; gr.2(CLF,n=25) injected saline into damaged liver. And with treatment: gr.3(CLF,n=25)-CECs into mesentery of the animals; gr.4(CLF,n=25)-CECs into damaged liver. Dynamics reduction of LF indices; liver and CECs morphology were investigated within 90 days after CECs implantation. **Result:** Lethality in the gr.1 was 66,6%, in 2gr.-39,5%, in 3 and 4gr.-0%. In gr.3 all biochemical indices returned to normal levels on the 5-7th day, in gr.4-within 30-60 days after CECs implantation. In gr.1 only after 18-20 days, in gr.2 without recovery of biochemical indices. In gr.3 were detected cell proliferation of liver parenchyma. In gr.4 was shown restoration of a hepatic lobe structure and liver architectonics. CECs with viable hepatocytes were fully integrated into liver structures. In CECs: hepatocyte proliferation, neogenic plethoric vessels growing through matrixes and neogenic bile ducts were detected. **Conclusion:** By our studies it has been shown that the proposed method is effective for correction and treatment LF and can be used in clinical practice.

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Augmented Reality Assisted Extraction Of Mastoid-Trapped Bullet Residues: A Technical Report

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Background: Augmented reality (AR) has been reported for various neurosurgical subspecialties but has never been described in skull base surgery for neurotrauma. We report the case of a patient who presented recurrent mastoiditis related to infected bullet fragments. Our aim of this report is to describe the surgery of millimetric metal fragment removal using AR with provided detailed imaging illustrations. **Material and Methods:** A young woman suffered from a headshot with a bullet stuck in the left mastoid bone. An AR setup was used to effectively remove the bullet remnants. Preoperative 3-dimensional image data sets (MRI and CT) were selected to create virtual segmented objects (head, bone, metal fragments and vessels) and injected into the microscope's eyepiece for precise intraoperative image guidance. **Result:** The patient was injured in 2010, the bullet went through the occipital bone to the mastoid. Immediate surgical exploration of the retromastoid region was done with removal of the major fragments. In 2014, the patient underwent a petrosectomy for persistent mastoiditis and a redo surgery the same year for the same symptoms. The patient didn't heal, probably because some bullet fragments remained, that were difficult to precisely localize during surgical extraction. In 2015, still presenting mastoid infection, she benefited a final surgical exploration with AR setup. The patient has no longer showed new infection symptoms to date and we consider her definitively healed. **Conclusion:** AR is a fundamental neurosurgical tool to make the surgery less invasive and safer. In this case, AR helped to easily and precisely detect the remaining metal bullet parts.

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Treatment Of Acute And Chronic Liver Failure By Using Implanted Cell Engineering Constructions (Cecs)

Murat Shagidulin ^a, Nina Onishchenko ^b, Mikhail Krashennnikov ^c, Igor Iljinsky ^b, Nataliya Mogeiko ^b, Alla Nicolskya ^b, Elena Volkova ^b, Victor Sevastjanov ^b, Sergei Gautier ^d

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Background: Treatment of acute(ALF) and chronic(CLF) liver failure(LF) is the important problem in surgery and using of new biotechnologies(cell implantation) at LF-treatment is the actual aim. **Material and Methods:** LF was modeled on Wistar rats: ALF-by resection of 75% of liver, CLF-by means of CCl₄. Isolated liver cells(LC) and multipotent mesenchymal stromal cells(MMSC) were obtained by standard procedure. Suspension of allogeneic LC(2,5-4,0x10⁶cells/cm³) and MMSC(0,5-0,8x10⁶cells/cm³), immobilized on biodegradable matrixes «Sphero@GEL» were used as CECs. The animals were divided into 4 groups: 2 controls without treatment: gr.1(ALF,n=25)-injected saline into mesentery; gr.2(CLF,n=25) injected saline into damaged liver. And with treatment: gr.3(CLF,n=25)-CECs into mesentery of the animals; gr.4(CLF,n=25)-CECs into damaged liver. Dynamics reduction of LF indices; liver and CECs morphology were investigated within 90 days after CECs implantation. **Result:** Lethality in the gr.1 was 66,6%, in 2gr.-39,5%, in 3 and 4gr.-0%. In gr.3 all biochemical indices returned to normal levels on the 5-7th day, in gr.4-within 30-60 days after CECs implantation. In gr.1 only after 18-20 days, in gr.2 without recovery of biochemical indices. In gr.3 were detected cell proliferation of liver parenchyma. In gr.4 was shown restoration of a hepatic lobe structure and liver architectonics. CECs with viable hepatocytes were fully integrated into liver structures. In CECs: hepatocyte proliferation, neogenic plethoric vessels growing through matrixes and neogenic bile ducts were detected. **Conclusion:** By our studies it has been shown

that the proposed method is effective for correction and treatment LF and can be used in clinical practice.

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Surgical Treatment Of Late Pulmonary Arteries Stenosis In A 13-Old Patient After Pda Closure With Vsd-Occluder Implantation

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Background: Transcatheter closure of patent ductus arteriosus (PDA) is an established, efficient and safe procedure with high success. However, complications like embolization or migration of the device, pulmonary artery stenosis or coarctation of the aorta may occur. We report on a case of surgical treatment of pulmonary arteries stenosis after PDA closure with ventricular septal defect (VSD) occluder. **Material and Methods:** A 3-years-old patient with large-sized patent ductus arteriosus underwent uncomplicated PDA closure with the VSD occluder application. Mild pulmonary arteries stenosis was discovered after 12 months after occluder implantation with progress in following examinations. The patient underwent failed pulmonary balloonoplasty at the age of 12. For this reason, the patient was qualified for cardiosurgical treatment. After 6 months the patient underwent successful surgical removal of the occluder with direct defect closure and pulmonary artery plasty. **Result:** Perioperative and postoperative periods were uneventful. The patient was discharged from the hospital on the 5th postoperative day. Postoperative transthoracic echocardiography revealed mild left pulmonary artery stenosis with reduction in following examinations. No aortic stenosis was revealed postoperatively. The patient is asymptomatic. **Conclusion:** Careful indications should be given to surgical or transcatheter closure of PDA. Although VSD occluder may be used with success to close large PDA, some major complications requiring surgical intervention may occur.

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Appendicular Mucocele : Report Of A Case In A Women With Oncological Co-Morbidity , A Systematic Review

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Background: Appendicular mucinous neoplasms are rare conditions due to obstructive dilatation of the appendix filled by mucoid material. Its incidence is estimated to be around 0.2%–0.3% of appendectomy specimens. **Material and Methods:** We report the case of a 57-years-old woman with history of Peutz-Jeghers syndrome. Her symptoms included jaundice, aggravated pain in the right lower abdominal region and itch in a context of antibiotic-induced hepatitis. Imaging investigations incidentally showed appendicitis associated to some suspect cystic lesions in right iliac fossa, therefore, investigation by surgery was performed. We chose a laparoscopic approach, which revealed cystic masses of the inflammatory appendix carrying out an appendectomy without cystic masses rupture. The postoperative time was uneventful. Histopathology reported an appendicular mucinous neoplasm (pT4a) with seeding of mucinous matrix in abdominal cavity. **Result:** Appendicular mucinous neoplasms are rare and often asymptomatic (in some cases mimicking acute appendicitis symptoms). They must be considered in patients with long-term pain in right lower abdominal region, especially if older than 50 years old or with suspected lesion incidentally discovered during imaging investigations. Ultrasound and Scanner Tomography are useful for such a diagnosis. Diagnosis is often made by histological findings, then, laparoscopic procedure is performed in most of the cases to remove the suspected appendicular lesion. **Conclusion:** Appendicular mucocele is a rare disease often miming an acute abdomen. Modern imaging is useful as a preoperative indicator for appendicular mucocele. Treatment is tailored for each single case, depends on disease spreading, however, surgery is always the recommended therapy combined to medical therapy if indication.

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Single Nucleotide Polymorphism Genotyping In East-European Patients With Colorectal Cancer

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Background: Colorectal cancer (CRC) is the third most common type of cancer and the fourth leading cause of cancer related deaths worldwide. The last decades have seen it rise as a major public health issue. Management is difficult, especially in elderly patients and efforts for an individualized treatment are necessary in order to improve early diagnosis and disease free survival. **Material and Methods:** A case-control genotyping molecular study was performed on 32 patients diagnosed with CRC (median age - 67.5 years) that underwent elective surgery and on 32 patients without CRC (median age 66 - years). Genotyping for rs6983267 rs4779584 and 719725 was performed on DNA extracted from peripheral venous blood. **Result:** 25 patients were diagnosed with colonic cancer with different localizations, whereas 7 had rectal cancers. Genotyping for rs6983267 revealed no heterozygous (G/T) individuals within the control group, with all patients showing homozygous profiles (76.67% G/G, and 23.33% T/T), but the heterozygous (G/T) genotype was present in 59.38% of the patients in the study group (with 21.88% G/G and 18.75% T/T genotypes). For rs4779584 and 719725 our results were similar with those in the HapMap database. **Conclusion:** A higher percentage of CRC patients had at least one G allele (81.21%) when compared to controls (76.57%), although the G allele frequency was higher in the control group due to increased percentage of G/G homozygosity. Further research is still necessary to accurately calculate a CRC risk associated with the presence of these SNP, but in future may lead to a lowering of CRC screening age.

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The Inferior Vena Cava Prosthesis With An Isolated Enteral Segment. Original Canine Experimental Model.

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Background: All current substitute of vascular structures have considerable risks of thrombosis, infection and bio degradation. The aim of the experiment is to find a new method of vasculoplasty. **Material and Methods:** The supporting element of the experiment is the morphofunctional similarity between the peritoneal mesothelium and the vascular endothelium. The enteral wall offers three structures similar to the vascular wall: peritoneal serosa, muscular layer and submucosa, but in an inverted order regarding the lumen. The single different structure is the mucosa layer, which can be removed. We use an isolated pediculated ileal segment, tubularized with the peritoneal serosa regarding inside the lumen and with the mucosa layer removed by simple curettage, as a real prosthesis to replace a segment of the inferior vena cava at infrarenal level. **Result:** Eight experiments on mongrel dogs were performed. No morbidity or mortality was recorded postoperative. The cavographies at 1 and 3 months postoperative showed the permeability of the enteral prosthesis. The histological and ultrastructural study of the prosthesis removed after 3 and 6 months (with subrenal ligatura of the inferior vena cava) showed a good preservation of its structures, with a perfect integration of the peritoneal serosa as vascular endothelium. **Conclusion:** The enterovascular prosthesis, being an autologous and vascularised prosthesis has no risk of thrombosis, infection or biodegradation. It can be useful in case of traumatic vascular lesions, especially in septic conditions (associated colonic lesions), when oncological reason demands vascular sacrifices and if septic complications of prosthetic vascular surgery occur. The prosthetic material is autologous, safe and cost-free.

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Appendicular Mucocele : Report Of A Case In A Women With Oncological Co-Morbidity , A Systematic Review

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^a Sion hospital, Sion, Switzerland;

Background: Appendicular mucinous neoplasms are rare conditions due to obstructive dilatation of the appendix filled by mucoid material. Its incidence is estimated to be around 0.2%–0.3% of appendectomy specimens. **Material and Methods:** We report the case of a 57-years-old woman with history of Peutz-Jeghers syndrome. Her symptoms included jaundice, aggravated pain in the right lower abdominal region and itch in a context of antibiotic-induced hepatitis. Imaging investigations incidentally showed appendicitis associated to some suspect cystic lesions in right iliac fossa, therefore, investigation by surgery was performed. We chose a laparoscopic approach, which revealed cystic masses of the inflammatory appendix carrying out an appendectomy without cystic masses rupture. The postoperative time was uneventful. Histopathology reported an appendicular mucinous neoplasm (pT4a) with seeding of mucinous matrix in abdominal cavity. **Result:** Appendicular mucinous neoplasms are rare and often asymptomatic (in some cases mimicking acute appendicitis symptoms). They must be considered in patients with long-term pain in right lower abdominal region, especially if older than 50 years old or with suspected lesion incidentally discovered during imaging investigations. Diagnosis is often made by histological findings, then, laparoscopic procedure is performed in most of the cases to remove the suspected appendicular lesion. When diagnosis of appendicular mucinous neoplasms is suspected, laparoscopic approach is debatable, but it is still recommended by some authors in selected patients only. **Conclusion:** Appendicular mucocele is a rare disease often miming an acute abdomen. Treatment is tailored for each single case, depends on disease spreading, however, surgery is always the recommended therapy combined to medical therapy if indication.

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Analysis Of Outcomes Of Percutaneous Cholecystectomy In Barnsley District General Hospital

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Background: Percutaneous cholecystostomy (PC) is indicated in acute cholecystitis for poor surgical candidates or high risks patients. **Material and Methods:** This is a retrospective analysis of patients who have received PC for treatment of acute cholecystitis between October 2012 and October 2017. 22 patients were identified. The severity of the disease was measured using the "The Tokyo Guidelines 2013 (TG13) for acute cholecystitis", and The suitability for surgical intervention using ASA grading and P-POSSUM scoring. In addition the study looks at complications of PC, re-admission, and mortality. **Result:** The average age of our sample was 65.8 years (34 - 81). The average time for insertion of PC since admission was 5.05 days. 46.6% of patients had grade 3 cholecystitis on admission to hospital. 50% of patients had ASA grade of 3 or more. The average mortality was 10.1% (3.4% - 36.8%) and the average morbidity was 41% (19% - 88.1%) on P-POSSUM scoring. 9.1% of the sample had a drain related complication, and another 9.1% deteriorated clinically despite PC insertion. 31.25% of patients were re-admitted with recurrent cholecystitis after PC treatment. 1 month mortality post insertion of PC was 13.6%, however, all remaining 86.4% of patients survived more than 1 year. 56.3% of patients received a cholecystectomy after the end of the acute episode. **Conclusion:** Early intervention with PC in grade 3 cholecystitis is recommended by the TG13. The high average time to insertion and the subsequent high drain complication, failure of treatment, and mortality reflects this when compared with other publications.

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Robotic-Assisted Gastric Gist Resection: A Single Center Experience

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Background: Gastrointestinal stromal tumors (GIST) are the most common mesenchymal tumors, representing 1-3% of all gastrointestinal cancer. Surgical resection is the only curative treatment. Minimally invasive approaches such as laparoscopic and robotic-assisted resections for gastric GIST have proved to be oncologically and surgically safe. We report here a case series of robot-assisted gastric GIST resections in our center. **Material and Methods:** We performed a retrospective analysis of all gastric GIST resected between 2007 and 2018 at the Geneva University Hospital, Switzerland. **Result:** 19 patients underwent robot-assisted gastric resection for GIST, 12 females and 7 males. Median age was 59 years (range 38-79) and median BMI was 27.5kg/m² (range, 18.6-41.3). Median tumor size was of 5 cm (range, 1.8-9). 13 cases were localized at the posterior wall and 7 were proximal (near the cardia). All tumors were completely resected (R0). We noted one conversion to open resection because of a positive margin requiring a subtotal gastrectomy. Median operative time was 157 minutes (range, 90-436). We reported no postoperative complications and no mortality within 90 days after surgery. The median follow-up was 8 months (range, 1-115) without tumor recurrency. **Conclusion:** Our case series confirm that robotic-assisted resection is safe and offers the same oncological results as others approaches (open and laparoscopically) for gastric GIST.

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Generation Of Reliable Patient-Derived Orthotopic Cancer Xenografts Utilizing Ultrasound

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Background: New advances in cancer therapy depend on reproducible translational oncology model systems. Compared to subcutaneous tumors, orthotopic sites are more likely to recapitulate tumor microenvironment and form vascularized xenografts that spontaneously metastasize. The development of biologically relevant orthotopic xenografts has been limited by complexity and morbidity of open surgery. To develop reliable cancer xenografts, ultrasound was utilized for tissue-directed implantation of patient-derived tumors (neuroblastoma). This technique was optimized without open surgery or prolonged murine recovery times. **Material and Methods:** Patient-derived xenografts were established by direct adrenal gland injection of luciferase-transfected patient-derived neuroblastoma tumor cells. Progression was monitored by in vivo imaging with bioluminescence and ultrasound. **Result:** Tumors engrafted and progressed to local disease with metastasis evident by 35 days. Metastatic sites included cortical bone, lung, liver, and lymph nodes. Xenografted tumors retained immunochemical features of the original cancer. **Conclusion:** Patient-derived orthotopic adrenal xenografts were consistently established by ultrasound without open surgery. This model of tissue-directed implantation is a safe and effective technique for developing reliable metastatic preclinical surgical models.

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Heterogeneity Of Pax7 Expression In Human Myogenic Reserve Cells: Identification Of A Subpopulation With Possible Therapeutic Application

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Background: Severe skeletal muscle injuries typically result in the formation of fibrotic tissue that impairs muscle function. Cell therapy is considered as a promising approach for improving skeletal muscle regeneration. We recently demonstrated that human myogenic reserve cells (RC) have the properties required for their use in cell therapy. The purpose of this study is to further characterize human RC by evaluating Pax7 expression, a critical transcription factor for the normal function of myogenic stem cells. **Material and Methods:** Procedures undertaken with human tissue were following national and international guidelines. Primary human myoblasts were switched to differentiation conditions (DM) for 48h, 96h and 144h. For immunofluorescence, myogenic cultures were fixed, permeabilized and stained for Pax7 and MyoD. For flow cytometry, RC were separated from myotubes using a short trypsinization, fixed, permeabilized and stained for Pax7 and MyoD. **Result:** Examination of Pax7 expression by immunofluorescence showed substantial heterogeneity in Pax7 levels in human RC_48h. This heterogeneity was also detected by flow cytometry with a Pax7Hi population of 23.52 ± 6.10% in RC_48h, of 43.82 ± 7.68% in RC_96h, and of 54.18 ± 6.39% in RC_144h (n=6). These flow cytometry experiments also revealed substantial heterogeneity within individual donors. **Conclusion:** Our preliminary data demonstrated that human RC are a heterogeneous population for Pax7 expression. We are now isolating Pax7Hi and Pax7Lo populations by cell sorting for qRT-PCR experiments. These experiments will help us to determine if the Pax7Hi human RC may constitute an appropriate source of muscle stem cells more directly pertinent to clinical application.

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A New Percutaneous Approach To Treat Combined Right Ventricular Failure (Rvf) And Respiratory Failure (Rf): The "Aachen-Cannula"

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Background: RVF on its own is always a life-threatening condition. Moreover RVF is often the final phase in RF (two organ failure). We aimed to develop a new simplified cannula approach to treat both RVF and RF. **Material and Methods:** Previous investigations demonstrated beneficial effects of active oxygenated right-to-left shunting (or-ls) in RVF and RF. We invented a dual lumen cannula to allow or-ls at an atrial level by a transseptal execution. The intended insertion was transjugular to allow an ambulatory approach. In an iterative prototyping and fitting process such a cannula was generated and finally investigated regarding anatomical fitting in a cadaver study. Fluid dynamic investigations were performed in an in-vitro circulatory mock-loop (water). **Result:** A 27 french, 255 mm long double lumen cannula with an inner cannula of 18 french resulted. In our fitting studies the "Aachen-cannula" allowed an easy transjugular introduction and advancement in a seldingers's technique. Transseptal placement was possible after transseptal puncture (brockenbrough needle) in a seldinger's technique. Due to a blocking balloon mounted at the (left atrial) tip even under slight tension the cannula stayed in correct transseptal position. The cannula enabled a flow of 2-4 l/min, at which common pressures and gradients were observed with and without oxygenator (Quadrox). **Conclusion:** In this design, prototyping, cadaveric and in-vitro study we could demonstrate the feasibility of a single double lumen cannula based or-ls at an atrial level. This approach enables combined RVF and RF treatment. Moreover this approach avoids recirculation and central hypoxemia.

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Animal Model Of Limb Ischemia And Ischemic Wounds

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Background: Lower limb ischemia and diabetic ulcers represent a serious condition. Stem cell therapy seems to be a method of choice in no-option patients with risk of limb amputation. There is a need to find an appropriate model of chronic ischemia to explore the processes of wound healing. The aim was to find a model of chronic ischemia in non-diabetic and diabetic pigs. **Material and Methods:** Diabetes was created using streptozocin. Twelve pigs, divided into 4 groups were used for each experiment. We created a model of limb ischemia using three types of ligation of iliac arteries in first two groups of non-diabetic and diabetic pigs. The remaining two groups were used for creation of full thickness dorsal skin lobes. As a control we used contralateral limb in first and nonischemic dorsal tissue in second group. Transcutaneous oxygen tension was used to investigate the depth of tissue ischemia. Pictures and biopsy were taken every seventh day. **Result:** Ischemia was achieved in both models. The results for both models were the same for the first 14 days. After this time ischemia persisted longer in dorsal flaps: oxygen tension 13.2 ± 11.9 mmHg versus 32.8 ± 13.5 mmHg in limbs, $p < 0.001$. There was no significant difference between non-diabetic and diabetic group. **Conclusion:** Finding a suitable animal model that could imitate signs of chronic and not just acute limb ischemia would help resolve the mechanism of wound healing using stem cells. Pig model of dorsal ischemic wound seems to be as eligible pattern.

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Primary Pulmonary Epithelioid Hemangioendothelioma: A Case Report And Literature Review

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Background: Introduction: Pulmonary epithelioid hemangioendothelioma (P-EHE) is a rare vascular tumour of borderline malignancy with a clinical course that lies between a benign hemangioma and an angiosarcoma. The aetiology of P-EHE is still unknown. **Material and Methods:** We report a case of an incidental diagnosis of P-EHE in a 54-year-old female with multiple bilateral nodules discovered after a routine chest x-ray following a 1 month history of cough, dyspnea and persistent fatigue diagnosed with a left right wedge resection. **Result:** Clinical presentation is heterogeneous, with the majority of patients being asymptomatic at the time of diagnosis. A diagnosis is usually made after the discovery of abnormal findings in chest x-rays during routine health examinations. To this day, there is no approved standardised treatment protocol for P-EHE. Therapeutic options range from regular follow-ups with no active therapy in asymptomatic patients, to surgical resections, corticosteroids, azathioprine and combination chemotherapy in symptomatic persons. Reports on survival vary greatly. Three separate studies have shown a mean survival of 4.6 years with a range of 6 months to 24 years. **Conclusion:** P-EHE is a rare tumour that requires further research to correlate its radiological findings to its molecular and genetic characteristics in order to assess their prognostic value and devise standardised treatment protocols.

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Effects Of Peg And Fk-506 Treatment In A Rat Sciatic Nerve Injury Model.

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Background: Polyethylene glycol (PEG) is one of the fusogens-substances mediating cell membrane fusion. Therefore, it's potential application in nerve injury treatment is being explored. After axolemma disruption, distal axon parts undergo Wallerian degeneration. PEG treatment restores axonal continuity and inhibits degeneration. However, the effects of PEG therapy in nerve injuries has not been compared with any other confirmed pro-neuroregenerative treatment. FK-506 is an immunosuppressive substance with proven pro-neuroregenerative impact in nerve injury treatment models. The aim of this study is to compare the PEG therapy and FK-506 application in rat sciatic nerve transection injury model. **Material and Methods:** 28 Sprague-Dawley rats, divided in 4 groups underwent sciatic nerve transection with primary repair. Groups received as follows: A: placebo injections, B: placebo injections and PEG treatment, C: FK-506 injections, D: FK-506 injections and PEG treatment. Results were evaluated using the Sciatic functional Index, skin prick test, and nerve histological assessment. **Result:** Histological analysis suggested improved neuroregeneration in all groups receiving treatment (higher mean axon area) compared with the control ($p < 0.001$). Group D (PEG + FK-506) had better results: higher mean axon area ($p < 0.001$), perimeter and axon count ($p > 0.05$) than other groups. PEG treatment (groups B and D) lead to better Sciatic Functional Index in the first postoperative week. However, results did not reach statistical significance. At the end of the study, every treated

group had superior mean skin prick test scores than the control group ($p > 0.05$). **Conclusion:** Simultaneous PEG

and FK-506 therapy effects in superior neuroregeneration when compared with simple suture-based repair and PEG or FK-506 independently.

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Risk Factors Of Lower Limb Amputation In Adult Diabetic Patients Attending To Jaber Aboeliz Specialist Hospital For Diabetes. March-April 2018

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Background: Diabetes mellitus is a group of metabolic disorders sharing the common underlying feature of hyperglycemia, caused by defect in insulin secretion, insulin action or both. Among its complications is: The Diabetic Foot Amputation. **Material and Methods:** This study is Descriptive Cross –Sectional hospital-based study that was carried out among diabetic patients at Jaber Aboeliz Specialist hospital for diabetes in Al-Khartoum from March to April 2018. The sample size was 180 patients, selected via non-probability convenience sampling method. The data was collected using interviewed questionnaires. **Result:** The study showed that among 180 diabetic patients: 44 (24.4%) were amputated and 136 (75.6%) were non-amputated. Regarding the risk factors, We found that (40.9%) of the amputated cases had poor compliance to treatment, (52.2%) of them were smokers, (56.8%) of them had a family history of amputation, and (29.5%) had a history of vascular disease. The predominant complications following the amputation were psychological (70.4%), DVT (31.8%), surgical site infection (36.3%). Preventive practices: Those who trimmed their nails carefully were 102 of all the taken cases (56.6%), and those who wore suitable shoes were 123 of all the taken cases (68.3%), **Conclusion:** We conclude that the proportion of amputation was relatively high. Poor treatment compliance, smoking, family history of amputation and coming late to hospital after injury are the commonest risk factors. The dominant complication among the study group was of psychological nature. Finally, the level of awareness of preventive practices is inadequate and needs more attention.

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The Animal Model Of Pre-Incisional N-Acetylcysteine Injection On Surgical Wound Healing – Molecular And Macroscopic Assessment.

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Background: N-Acetylcysteine (NAC) decreases cellular oxidative stress. Extended inflammation impairs wound healing. The study aim was to evaluate the efficiency of NAC additive in a local anesthesia administered before surgical incision. **Material and Methods:** The study was approved ethically (Resolution no. 304/2017). Each of 24 Sprague-Dawley rats had 6 incisions planned on the dorsal side (3 on each). Sides were randomly selected for agents' injections before incision – one received lidocaine with epinephrine solution, contralateral was treated with 3 concentrations of NAC in lidocaine with epinephrine. Photographic documentation of wound was performed. Rats were sacrificed in 3rd, 7th, 14th and 60th day after the operation (6/timepoint). Wounds were excised and preserved for histological (ongoing study) and gene expression analyses. qPCR included 94 targets related to wound healing process. Photographic documentation underwent planimetric measurements (wound area, length, width) with ImageJ 1.48v. Data were verified in terms of its distribution, Mann-Whitney U and ANOVA Kruskal-Wallis tests were used. **Result:** Any concentration of NAC produced higher expression of growth factors (FGF2, FGF10, IGF1, IGF2), selected cytokines (TNF, VEGFB, TGF- α , TGF- β 2, IL-10, ELANE), cell adhesion molecules (CDH1, ITA5) and remodeling factors (MMP2, CSK) ($p < 0.05$). Wound area in NAC-treated groups was smaller starting from the 28th day after incision ($p < 0.01$). A shorter length of NAC-treated wound/scar appeared at the 14th day ($p < 0.01$). Optimal results occurred with 0,030% NAC solution. **Conclusion:** NAC in pre-incisional anesthetic solution decreases wound size. NAC acts through activation of growth factors and cytokines involved in wound healing. Our separate study is verifying molecular and macroscopic findings.

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Concurrence Of Acute Appendicitis And Clostridial Colitis In Noncompliant Female With Transplanted Uterus: A Case Report Of A Diagnostic Conundrum

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Background: Immunosuppression being an indispensable element of care of transplanted organs may also pose a downside in case an intraabdominal infection develops due to the fact that the immunosuppression may alter the clinical finding. Uterus transplant has been recently accepted as a treatment option for uterine factor infertility. Experience with acute abdomen in a patient with transplanted uterus is fairly rare. **Material and Methods:** This poster presents a case report of a 26-year-old woman 1.5 years after uterus transplantation who experienced nausea, diarrhoea and abdominal discomfort shortly after her return from previously discouraged vacation in Egypt. Due to severe dehydration and use of immunosuppression she was hospitalized. Shortly, Clostridial Colitis was diagnosed and it was treated with course of perorally administered Vancomycin. In further course, a pain in right lower quadrant developed; an ultrasound scan expressed a suspicion of appendicitis. The patient underwent a converted laparoscopic appendectomy. **Result:** The immunosuppressed patient suffered from concurrence of Clostridial Colitis and appendicitis. No parasites or CMV infection were determined. In further course, the patient suffered from long lasting diarrhoea and pancytopenia of parainfectious and medical etiology; both revealed a gradual tendency to regression. The uterus graft suffered no damage whatsoever. **Conclusion:** A coexistence of several concurrent pathological findings should always be suspected. Immunosuppression may substantially alter the clinical finding in acute abdomen. In case a severe dehydration develops, the risk of arterial and/or venous thrombosis of the graft increases substantially.

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Superficial Sternal Wound Infections And Postthorax Vest In High Risk Patients Post Cardiac Surgery

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Background: Postoperative infective complications represent a major cause of morbidity and mortality in high risk patients undergoing cardiac surgery. Their consequence is a high treatment costs - prolonged hospital stay, greater consumption of antibiotics, revision surgery, community care of the wound. Based on clinical studies with over 10,000 patients Postthorax Vest showed a reduction in sternal wound infection, improved mobility, faster recuperation, better pain control. Postthorax vest produces anteroposterior pressure and prevents separation of the fractured bone, stopping over-extension of the thorax. The aim of the study is to determine the incidence of sternal wound infections in high risk patients having Postthorax vest administered post cardiac surgery. **Material and Methods:** This is a retrospective analysis of patients who underwent CABG mainly between January 2016 - August 2018. Local electronic records were used to collect the data. The primary variables analysed: BMI>30, DM, redo-sternotomy, frailty, administration of the Postthorax Vest on D1 postoperatively, and the incidence of SWI. A secondary variable was pain control post administration. **Result:** There were 22 patients identified who had the Postthorax vest administered mainly within the first days postoperatively. There was only one superficial wound infection identified and the pain was better controlled within our cohort. 45% of the patients had a BMI >30, 59% had DM, 14% being smokers. **Conclusion:** We recommend the prescription and administration of Postthorax Vests within the first 24 post surgery with an increased education on the Postthorax Vest amongst ITU, physiotherapists, junior doctors, and larger sample of patients to be re-audited in the next 6/12.

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Intraneural Ganglion; Is It Possible For Clinical Symptoms To Completely Resolve Without Surgical Intervention?

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Background: We describe a case where a 66-year-old patient presented following an episode of trauma with a palpable soft tissue swelling in the antecubital fossa of the right leg which was clinically and radiologically diagnosed as a right common peroneal nerve intraneural ganglion. Following a period of intense exercise (cycling) there was no clinical evidence of a palpable lump or any abnormality. Radiological studies and Electromyography supported these findings. **Material and Methods:** 'case study' **Result:** The patient who was previously an elite runner) resorted to using an exercise bike to keep fit as he was unable to run due to extensive foot drop. Following a period of intensive exercise over a four-month time period, mainly using a bike his symptoms improved and there was no evidence of foot drop and on attending clinic he was wearing normal shoes. Clinical examination confirmed these findings and there was no palpable ganglion. Positive Tinnels was noted over the lateral leg correlating with reinnervation. Initial MRI showed an intraneural ganglion within the common peroneal nerve. Follow up MRI demonstrated complete resolution of the nerve, with normal common peroneal nerve anatomy and only some mild oedema localised to the soft tissues. **Conclusion:** Due to the severity of his symptoms this patient was initially planned for surgery to remove the ganglion. Surgery may have caused significant morbidity and potentially no resolution in symptoms due to the location of the ganglion. Clinical symptoms resolved, and the patient has had a complete resolution which is clearly demonstrated on MRI and nerve conduction studies.

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Brushing Method In The Surgical Treatment Of Pilonidal Sinus

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Background: The aim of study is to assess to examine postoperative complications and recurrences and to aim to determine the efficacy of Povidone-iodine soap brushing on surgical treatment of pilonidal sinus. Although pilonidal sinus seems like a simple lesion, its treatment may be very difficult because of high postoperative complication and recurrence rates. **Material and Methods:** Four hundred and fifty patients who were operated for pilonidal sinus between 1997 and 2012 were included in the study. Excision + Povidone-iodine brushing + primary repair in 230 (51%) cases (Brushing group), excision + primary repair in 220 (49%) cases (Surgery group) were applied. **Result:** There were 418 (93%) male and 32 (7%) female patients. The mean age was 21.88±3.05 years (range: 16-32 years old). While four recurrence (1.8%) was detected in polyvidon iodine brushing technique, fifty recurrences (22.7%) were detected in surgery group ($p<0.0001$). Postoperative complication rates were also lower in brushing technique group than surgery group ($p<0.0001$). The wound infection rate was higher in surgery group (27%; 59 cases), than the brushing group (0.4% 2 cases), ($p<0.0001$). **Conclusion:** As a result, according to the data we gained during our study, we observed that brushing methods are more preferable. It is concluded that excision + Povidone-iodine brushing + primary repair in the treatment of pilonidal sinus may be a preferable method because of lower complication and recurrence rates.

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Developing The Surgical Education At Uskudar Medical Faculty

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Background: Surgical education is a kind of art. But it contains wide spectrum of all detail knowledge about the health sciences. During the Surgical education period, the surgical procedures that apply on patients can be dangerous. Also there are many anatomical variations in each patient and it is a challenge to perform a surgery. We have decreased the risk of malpractices and unnecessary harm on surgical patients by using Virtual Reality (VR). **Material and Methods:** Our department has begun the surgical education this year. Our university has a VR Simulation Center for the medical school students and all health personals. **Result:** Virtual Reality is not only useful method to teach the medical school students but also for surgical assistants. All kinds of surgical procedures can be learned without any risk on patient's health status. It is easier to learn many anatomical variations by observing each of them virtually and by this may for assistants can be prepared for different anatomical variations. All professors of surgery write the scenery for all kind of surgical disease, variety clinical cases, surgical examination principles, and surgical procedures. These programs are produced by our university and because of that, the price of the programs are very cost effective to compare to buy them. **Conclusion:** It is concluded that the VR on Surgical education is an effective method. If you write the all knowledge on surgical scenery, the price of the programs may be reduced. So surgical assistants can persuade their surgical practices without any surgical malpractices by using VR.

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Surgical And Early Oncological Outcomes Of Laparoscopic Versus Open Rectal Surgery: A Comparative Study

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Background: As in many surgical fields, minimally invasive surgery which has been widely used in cancer surgery has become increasingly adopted by many surgeons in the practice of colorectal surgery owing to less tissue trauma and favorable outcomes although oncological outcomes of technique in rectal cancer surgery are still debated. In this study, we aimed to evaluate short-term clinicopathological outcomes of laparoscopic versus open surgery in patients undergoing rectal cancer surgery. **Material and Methods:** 46 patients who underwent curative surgery for rectal cancer were retrospectively analyzed. All patients were divided into two groups as open surgery (Group 1, n=21) and laparoscopic surgery (Group 2, n=25). Data including demographic characteristics, type of surgery, postoperative complications, duration of surgery, length of hospital stay, the amount of intraoperative bleeding, and short-term oncological outcomes were recorded. **Result:** Of the patients, 34 were males and 14 were females. The median age was 55 (range, 28 to 82) years. The median follow-up was 20 months in Group 1 and 19 months in Group 2. The median length of hospital stay was six days and the median duration of surgery was 202.5 min. The recurrence rate was 13% and mortality rate was 6.5%. The rate of conversion surgery was 21.8%. The complication rate was 54.3%. Anastomotic leak was detected in two patients (4%). The amount of intraoperative bleeding was statistically significantly higher and the length of proximal surgical margin was statistically significantly longer in the open surgery group. **Conclusion:** Our study results suggest comparable surgical and short term oncological outcomes with both laparoscopic and open rectal surgery.

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The Knowledge Of Breast Self-Examination In Our Patients

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Background: Breast cancer is the most common cancer type and unfortunately the cause of death among women. For Breast cancer diagnosis, breast self-examination is effective method. This study aimed to determine the rates, and the knowledge level of breast self-examination among female patients who applied to a private medical center (LIFEMED) in Istanbul between 2010 and 2017. **Material and Methods:** A cross-sectional study was conducted among 290 women. We used a snowball-sampling method, which used personal contacts when they came to us for their routine annual breast examination. All data were gained through designed closed-ended questions. **Result:** 290 women were selected using a convenience sampling method. Women had not had breast cancer. Also they were not currently pregnant or breast-feeding. The mean age of participants was 44.61 years (range = 18–72). 75% of the patients had sufficient knowledge about breast self-examination. 39% of the patients reported regular practice of monthly breast self-examination. However 15% of the women reported no practice of breast self-examination. **Conclusion:** Although our patients' practice level and knowledge of self-examination are higher than similar international studies, it is not adequate considering the importance of early diagnosis of female breast cancer.

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Analysis Of Microsatellite Instability Status And Mismatch Repair Gene Mutations In Turkish Patients With Lynch Syndrome

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Background: Lynch syndrome (LS) is the most common cause of inherited colorectal cancer (CRC). Microsatellite instability (MSI) and DNA sequencing analysis are effective molecular tests for detecting LS. In this study, we investigated the frequency LS in Turkish population. We also aimed to investigate types and frequencies of MSI status and mismatch repair (MMR) gene mutations in Turkish patients with LS and to identify specific biomarkers for early diagnosis of their non-symptomatic kindred's. **Material and Methods:** Between 1990-2017, 34 families with LS and 22 non-symptomatic kindred were evaluated. 34 tumor DNA and respective normal tissue DNA samples were used study MSI status using five microsatellite markers (BAT25, BAT26, D2S123, D5S346, and D17S250, the Bethesda panel). Forward primers were dye labeled for automated high-throughput multiplex detection using capillary array electrophoresis. Subsequently, MMR gene mutations in MSI positive families were investigated by DNA sequence analysis. **Result:** Among 34 patients, 18 cases (52.9%) were classified as MSI-positive. 12 patients and 10 non-symptomatic kindred's showed pathogenic mutation in MLH1 (c.1843dupC and MLH1 c.1743delG, c.293G>C, c.954.955delinsTA) and 4 patients and 6 kindred had pathogenic mutation in MSH2 (c.1384A>T, c.2210G>A). Furthermore, we also detected c.2210G>A (MSH2) in 2 patients that identified a specific mutation for Turkish population in our previous studies. **Conclusion:** The present studies demonstrates that early detection of LS may possible using analysis of MSI and MMR gene mutation.

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Can Closed-Incision Negative Pressure Therapy (Cinpt) Help Prevent Wound Infections In High Risk Patients Undergoing Laparotomy?

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Background: Surgical site infections are a potentially avoidable surgical complication. An evidence-based way to achieve a reduction of this complication is imperative in 2019. Closed-incision negative pressure therapy (CiNPT) device Prevena has been used successfully to diminish SSIs. It is supposed to enhance healing process by wound cleansing and subcutaneous tissue immobilization. No prospective trial in high-risk patients undergoing laparotomy is known. **Material and Methods:** Single center prospective study comparing CiNPT vs standard wound dressing, from January 2018 in General Surgery HVR, Sion, with one-month follow-up. Prevena was placed for 7 days on patients undergoing urgent laparotomic procedure or two criteria placing them at high risk for wound infection. Primary endpoint: Incisional SSI at discharge. Secondary endpoints: Incisional SSI at 30 days, all-cause mortality. **Result:** We installed 39 Prevena onto 23 non peritonitic patients and 16 patients having Inflammatory (12.5%), purulent (62.5%) or stercoral peritonitis (25%). In non peritonitic patients we had a total of 5 (21%) early infections with only one needing a redo procedure. None of them had an infected wound at one-month follow-up. In this group only 3 patients arrived at one-month control with an infected wound. In the peritonitis group we counted 6 (37.5) wound infections before discharge, half of which with a concomitant deep tissue infection. None of those patients got to follow-up with a wound infection (3 reoperations). Only 2 (12.5) other patients got to our control with a S-SSI. **Conclusion:** This is an interesting therapy device with mixed results in General Surgery. CiNPT demonstrated his efficacy in orthopaedic, cardiothoracic and vascular surgery settings with fewer early and late incisional infections. Those surgical branches are less subject to contamination than GI surgery. Our results are a good starting point to enlarge our study to a non-randomized clinical trial comparing Prevena to standard wound care, acting as a matched control group.

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An Unusual Case Of Jejunal Diverticulae With Band Adhesions Causing Acute Abdominal Pain And Sepsis.

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Background: Jejunal diverticular disease is a rare phenomenon, usually incidentally found and often asymptomatic, with an incidence of 0.3-4.5% reported in the literature. Even when it does cause symptoms, it is often misdiagnosed, or there is a delay in diagnosis. **Material and Methods:** Case Presentation please see results section **Result:** Case Presentation We present a case of a 79 year old gentleman who was admitted into hospital with a 4 day history of abdominal pain, loose stools and vomiting. He underwent a CT scan of his abdomen and pelvis which suggested mid small bowel thickening, with localised collection and possible contained perforation. As he was well in himself with antibiotic treatment, he was initially treated conservatively for suspected small localised perforation of his jejunum. He subsequently underwent an elective laparoscopy for ongoing abdominal symptoms, which surprisingly revealed an unusual case of jejunal diverticulae trapped by congenital band adhesions. Resection of the affected part of the jejunum with side to side anastomosis was performed to treat the patient's symptoms. **Conclusion:** While diverticular disease of the small bowel is rare, it must be remembered that these can cause acute complications, and require surgical management. Current opinion for treating complicated jejunal diverticulosis advises resecting the affected segment with primary anastomosis.

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A Simple, Elliptical Incision For Use In Brachioplasty

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Background: Brachioplasty is a widely popular procedure, and numbers performed per year have increased exponentially since the turn of the century. Despite this there is no universally agreed surgical approach. This impacts on the choice of surgical incision, liposuction method and wound closure. Current literature also suggests that although brachioplasty is generally safe it is not without complication, and further surgery is required in up to 21% of cases. We propose a skin only superficial elliptical incision in the brachioplasty procedure. **Material and Methods:** A review of the literature using PubMed database was performed. The search term 'brachioplasty' in isolation yielded 112 papers. Those focussing on liposuction and specific pathology were excluded. Papers included were manually screened for documented incision shape and depth. **Result:** Elliptical incisions in brachioplasty have been used since its inception and continue to be used today, however our proposed superficial approach is novel. Posterior and medial incisions are made according to pre-operative marking. Care is taken not to breach the underlying fascia, excising only skin and a varying amount of adipose tissue. The medial brachial and antebrachial cutaneous nerves run superior to the deep fascial layer, as does the lymphatic drainage of the upper limb. This superficial incision aims to minimise exposure and therefore damage to these structures, thereby reducing the risk of nerve damage and seroma, respectively. **Conclusion:** An elliptical incision that does not breach the fascia aims to simplify and reduce the invasiveness of the procedure, thereby reducing complication rates and increasing patient satisfaction.

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Circulating Mir-10B Is Associated With Overall Survival In Pancreatic Ductal Adenocarcinoma

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Background: Despite development of scientific, Pancreatic ductal adenocarcinoma (PDAC) remains lethal disease. Recently, miRNAs of cancer that often are resistant to treatment have been identified. Present study aims to investigate the existence and prognostic value of miRNAs in PDAC patients. **Material and Methods:** 71 hematoxylin and eosin-stained slides cut from formalin-fixed, paraffin-embedded (FFPE) PDAC tissues were evaluated by a pathologist, and the areas of the slide representing tumor and normal were identified. Subsequently, blood samples were prospectively collected from preoperative and postoperative PDAC and disease free controls. The samples were analyzed for the presence and differential expression of 21 different miRNAs using RT2 Profiler PCR Array Data Analysis. **Result:** Of the 71 patients, 32 were men and 39 were women. All patients underwent pancreaticoduodenectomy. miR-451, miR143 expression level was significantly lower, miR-181a, miR-148 and miR-10b in tumors than in corresponding normal tissues (P= 0.023, P= 0.045, P=0.0476, P= 0.0411, P= 0.001 respectively). Furthermore, circulating levels of miR-181a and miR-10b were significantly increased in post-operative blood samples with short overall survival (OS) compared with patients with long OS (p=0.01 and <0.001). Moreover, multivariate analysis showed that high miR-10b (cutoff value= 4.71) expression was an unfavorable prognostic factor for OS in blood samples. **Conclusion:** Our results suggest that these molecules may serve as a candidate prognostic blood biomarker and target for new therapies in PDAC.

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Surgical Resection Of A Chronic Abdominal Haematoma Following A Diep Flap - A Case Report

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Background: We present a 59-year-old woman who was referred via the Leeds sarcoma MDT referral pathway for review of a long standing abdominal swelling. A left-sided mastectomy and immediate DIEP flap were performed nine years previously in a different centre, to treat breast cancer and reconstruct the breast. The patient reported a progressively enlarging abdominal swelling initially attributed to weight gain but of considerable concern to the patient. **Material and Methods:** MRI showed a 31 cm x 24 cm swelling in the anterior abdominal wall. Ultrasound-guided biopsy confirmed sterile haematoma. Surgery was performed via the previous abdominoplasty incision. **Result:** The volume of haematoma drained came to over five litres. There were no post-operative complications and the patient has since made an excellent recovery. **Conclusion:** To our knowledge, this is the largest abdominal haematoma following a DIEP flap described in the literature. This case is also unusual as the haematoma did not occur in the immediate post-operative period. Although a rare example, this case illustrates complications such as haematoma can be longstanding, with implications to the patient.

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Intussusception In An Immuno-Compromised Patient: Case Report And Review Of The Literature

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Background: Adult intussusception (AI) represents 1% of all bowel obstruction. While children intussusception is well known and almost always idiopathic, an underlying cause in adult is found most of the time. The management of AI can be controversy regarding the indication of surgical resection and the necessity or feasibility to reduce the intussusception before a resection. We present here an uncommon case about an immune-compromised patient who presented four intussusceptions. **Material and Methods:** A 59-year-old female known for type 1 diabetes with end-stage renal failure who required a combined kidney-pancreas transplantation was transferred to our intensive care unit because of a septic shock with suspicion of a pulmonary origin. A thoraco-abdominal CT scan demonstrated signs of bilateral pneumonia and multiple abdominal intussusceptions for which she was taken in surgery. **Result:** Four intestinal intussusceptions were founded. Desinvagination was performed although no bowel resection was done. In post-operative, patient presented a new bowel obstruction. A new operation was performed showing a recurrence of intussusception. A segmental resection was indicated but because of a septic shock and high-dose of noradrenalin, no resection was performed. Patient continued to decline on the pulmonary level and died a few days after. **Conclusion:** We reported a case of multiple intussusceptions in an immunocompromised patient with diagnosis at the autopsy of multiple adenomas responsible for the intussusceptions. This case confirms that AI is rarely a spontaneous disease and therapeutic strategy should be thinking accordingly. There is actually no systemic approach of AI and further studies are needed in order to improve the treatment.

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Review Of Operative Management Of Clavicle Fractures In A Scunthorpe District General Hospital

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Background: Clavicle fractures are very common injuries in adults and children with the primary cause typically due to trauma. This systematic review looks at the current suggested guidelines for management of clavicle, conservative vs operative, and reviews the management of these fractures in a district general hospital in Northern Lincolnshire based on the literature review. **Material and Methods:** Further to a literature review on guidelines for the management of these fractures, a retrospective review was conducted at a DGH from July 2016 to June 2017, of 10 patients who underwent surgery out of the total 53 patients with fractures of clavicle referred from A & E to Orthopaedic unit. **Result:** 81% managed conservatively and 19% managed operatively. 100 % of operations done by a senior surgeon & assistant with no complications reported and none of the patients needed revision surgery. 100% of patients followed up & returned to regular activities after 4-6 weeks. **Conclusion:** The management of clavicular fractures on our data set shows operation is favoured on displaced midshaft and lateral 1/3 fractures. Ideally further study is needed to compare surgical versus conservative treatment outcomes and also to report on patient satisfaction and outcome.

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Management Of Patients Admitted With Head Injuries- Re-Audit

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Background: Head injury is the commonest cause of death and disability in people aged 1–40 years in the UK. Every year 1.4 million people attend emergency departments in England and Wales with a recent head injury, of which 200,000 are admitted. Appropriate guidance can enable early detection and treatment of life-threatening brain injury, where present, but also early discharge of patients with negligible risk of brain injury. **Material and Methods:** Data from Scunthorpe General Hospital with daily trauma meeting handover sheets to identify all head injury patients admitted for observations. 1st cycle was measured as a 12 month time period between June 2015 to May 2016 while the 2nd cycle reviewed July 2016 to July 2017. 'WebV' clinical system for healthcare used to determine admission and discharge details & PACS imaging & reports used to determine nature of injury. 3 primary standards were adhered to from the NICE guidelines to audit the current practice. **Result:** Improvement in the number of patients admitted that fulfilled the criteria for admission from cycle 1 to cycle 2 (15% improvement) further to recommendations. Nearly every patient admitted for observation following head injury has had a CT scan performed. Greater than 95% of patients who had a CT met the criteria for one. Only 1 patient underwent a CT when where they had not met the criteria. **Conclusion:** Further robust audit looking at all the NICE Guideline recommendations rather than just: Investigating clinically important brain injuries. Admission and observation + Discharge and follow up.