Results: MRI identified 23 desmoids in 9 patients – 9 intra-abdominal desmoids (iAD), 10 abdominal wall desmoids (AWD) and four extra-abdominal desmoids (EAD). CT only identified 21 desmoids – one EAD and one AWD were not identified. The two modalities were equivalent in terms of defining local extent of desmoid. There was no difference in median desmoid size – 56.7 (range 2-215) cm² on MDCT and 56.3(3-215) cm² on MRI (p=0.985). The mean MRI-ER – 1.12 (standard deviation 0.43) – was greater than CT-ER – 0.48(0.16) (p=0.0001). High signal intensity on T2-MRI was associated with increased MR-ER (p=0.006).

Conclusions: MRI is superior to MDCT for the detection of desmoids in FAP. Coupled with the advantage of avoiding radiation, it should be considered as the primary imaging modality for young FAP patients.

ASIT MEDAL 0853: A RANDOMIZED CONTROLLED TRIAL EVALUATING ENDOSCOPIC AND LAPAROSCOPIC TRAINING IN SKILLS TRANSFER FOR NOVICES PERFORMING A SIMULATED NOTES TASK

Background: The NOCSAR white paper lists training as an important step to the safe clinical application of NOTES. The aim of this randomized-controlled-trial was to evaluate whether training novices in a laparoscopic or endoscopic simulator-curriculum would affect performance in a NOTES simulator-task.

Methods: Thirty novices were randomized to three groups: no-training (n=10), endoscopy-training (n=10), and laparoscopy-training (n=10). All participants completed a simulated-NOTES-task on the ELITE (Endoscopic-Laparoscopic Interdisciplinary Training Entity) model. Performance was assessed as time taken to complete individual-steps, overall-task time and number of errors.

Results: The endoscopy-group was significantly faster than the control-group at accessing the peritoneal cavity (median 27 versus 78 sec; p=0.015), applying diathermy to the appendix (median 103.5 versus 173 sec; p=0.014), and navigating to the gallbladder (median 76 versus 169.5 sec; p=0.049). Endoscopy participants completed the full NOTES procedure in a shorter time than the laparoscopy group (median 863 versus 2074 sec; p=0.001).

Conclusion: This highlights the importance of endoscopic-training for a simulated NOTES task that involves both navigation and resection with operative maneuvers. Although laparoscopic training confers some benefit for operative steps such as applying diathermy to the gallbladder fossa, this was not as beneficial as training in endoscopy.

ASIT MEDAL 0858: THE DEVELOPMENT OF A NOVEL TENDON AUGMENTATION GRAFT
Zafar Ahmad, John Wardale, Roger Brookes, Neil Rushton. University of Cambridge, Cambridge, UK

Introduction: Rotator cuff tears remain a problem, with massive rotator cuff tears having a failure rate of repair of up to 90%, despite new surgical techniques. Tissue engineering techniques offer the possibility of generating pre-injury tendon tissue. We present the development of a novel tendon augmentation graft made of extruded collagen graft used with tissue engineering techniques to overcome this challenge.

Methods: In-vitro: Sheep tenocytes were placed on the augmentation graft and with and without Platelet Rich Plasma (PRP). An evaluation of collagen production, cell proliferation, and cell adherence of the material was done over a 3 week period.

In-vivo: 24 sheep were operated on with the detachment and reattachment of the infraspinatus of the sheep. The repair groups were divided as follow: (1) Control (2) Extruded collagen graft (3) Biphasic collagen scaffold (4) Biphasic collagen scaffold with platelet rich plasma. The sheep were harvested at 12 weeks.

Results: In-vitro: The sheep tenocytes are indeed able to adhere, proliferate on the novel material. However the use of platelet rich plasma has lead to an even higher level of cell proliferation and collagen production

In-vivo: The outcomes show that the material integrated and enhanced the tendon repair. Immunohistochemistry will be presented.

ASIT MEDAL 1122: EXPRESSION OF TOTAL VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) AND INHIBITORY ISOFORMS OF VEGF IN HEAD AND NECK SQUAMOUS CELL CARCINOMA
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Aims: Angiogenesis is an absolute requirement for tumour survival and progression, of which vascular endothelial growth factor-A (VEGF-A) is a potent stimulator. Alternative splicing, however, results in a family of highly anti-angiogenic endogenous sister isoforms (VEGFxxxb), not yet investigated in head and neck squamous cell carcinoma (HNSCC). We investigated whether VEGF isoform expression was altered in HNSCC and compared this with clinicopathological outcomes.

Methods: Ninety-three HNSCCs (29 larynx, 38 oropharynx, 26 hypopharynx) were studied. Tumour sections were assessed by immunohistochemistry with total VEGF (panVEGF) and VEGFxxxb-specific antibodies, and analysed by 2 assessors (blinded).

Results: PanVEGF expression was significantly reduced in hypopharyngeal tumours (ANOVA p=0.01) and was significantly associated with increasing T stage in laryngeal tumours but not for other sites (p<0.05). Significant correlations were demonstrated for panVEGF and VEGFxxxb:panVEGF expressions and length of overall survival (p<0.05 and p<0.0001, Pearson).

Conclusions: Total VEGF expression appears upregulated in HNSCC, particularly in advanced laryngeal tumours. Increased relative expression of inhibitory VEGF isoforms may be a biological marker of enhanced survival and merits further large-scale investigation.

ASIT MEDICAL STUDENT PRIZE: 0220 WINNER OF ASIT MEDICAL STUDENT PRIZE: ASSESSMENT OF PERIOSTIN AND TRANSGLUTAMINASE 2 AS POTENTIAL BIOMARKERS IN OESOPHAGEAL ADENOCARCINOMA
Chukwudi Trevor Uzoho, Fergus Noble, Andrew Bateman, Matthieu Derouet, Tim Underwood. University of Southampton, Southampton, UK

Aim: To model biomarker identification, we evaluated POSTN and TG2 as they have been shown in various cancers to correlate with cell survival, invasion, and resistance to chemotherapy.

Methods: Using primary OAC tissue (chemotherapy responders ((TRG 1-3), n=30), non-responders ((TRG 4-5) n=30), and chemonaive (n=30; 8 matched normal oesophagus, 6 metastatic lymph nodes) protein expression of TG2 and POSTN was assessed by immunohistochemistry (weakly positive (0-5%), positive (5-50%) and strongly positive (50-100%) and correlated to clinicopathological data.

Results: POSTN and TG2 was positive or strongly positive in 90% and 76% of OAC tumour compared to only 13% and 13% being positive in matched normal oesophagus (p<0.001, Pearson). POSTN is expressed at a higher level in non-responders compared to responders (p=0.014) as well as TRG (p<0.040). Low levels of POSTN expression (0-5%) correlates with improved survival.

Conclusion: The positive expression of POSTN and TG2 in oesophageal cancer with limited expression in normal oesophageal tissue suggests a functional role in OAC and provides biomarker potential. The significant correlation of POSTN with TRG suggests POSTN may be clinically useful in predicting response to neoadjuvant chemotherapy.

ASIT MEDICAL STUDENT PRIZE: 0226: A GENERATION OF LAPAROSCOPIC NEPHRECTOMY: STAGE SPECIFIC SURGICAL AND ONCOLOGICAL OUTCOMES FOR LAPAROSCOPIC NEPHRECTOMY IN A SINGLE CENTRE

Introduction/Aims: To determine the stage-specific operative, post-operative and oncological outcomes, for patients undergoing
laparoscopic radical nephrectomy (LRN) for renal cell cancer (RCC) in a single centre.

Methods: From December 1997 to July 2011, data was collected prospectively for 397 consecutive patients undergoing LRN for pathologically confirmed RCC. Follow-up data was completed retrospectively. Patients were listed chronologically and split into 3 equal groups.

Results: There was no difference in age and gender between the 3 groups. The number of LRNs conducted for locally advanced (T3/4) disease (37, 27, 62, p-value: <0.001) was significantly increased (P < 0.001) but remained similar for localised (T1/2) disease (95, 106, 76). Surgical outcomes (operation time, blood loss etc) improved for localised disease (P < 0.05) and remain unchanged for locally advanced disease. There was a significant difference in overall survival (80.7%, 52.7%, 50.7%), cancer-specific survival (96.8%, 77.4% and 52.7%) and progression free survival (83.5%, 56.4%, 39.8%) between patients with T1, T2 and T3 disease (p < 0.001).  

Conclusion: Operative outcomes following LRN for localised RCC have improved over time. LRN is increasingly undertaken for locally advanced disease which is acceptable from operative, post-operative and oncological standpoints. This is likely due to increased experience and operative ability to tackle more complex cases.

ASIT MEDICAL STUDENT PRIZE: 0286: HARMONIC SCALPEL VS. ELECTROCAUTERY DISSECTION IN MODIFIED RADICAL MASTECTOMY: RANDOMIZED CONTROLLED TRIAL

Salma Khan, Shaista Khan, Ghulam Murtaza, Naveed Haroon, Tabish Chawla. Aga Khan University Hospital, Karachi, Pakistan

Aim: To compare outcomes between harmonic and Electrocautery dissection in adult female patients underwent modified radical mastectomy (MRM).

Method: All adult females who underwent MRM during May 2010 to July 2011 were randomized to either intervention A harmonic scalpel or B electrocautery. The outcomes were estimated blood loss, operating time, drain volume, seroma, surgical site infection and postoperative pain. Comparison of groups were done with T-test for continuous and chi-square for categorical variables. Multiple linear regression was done to control the effect of age, BMI, breast volume, tumor size and neoadjuvant chemo radiotherapy.

Results: In each group, 75 patients were recruited. Both the groups were comparable for baseline variables with age of 48.5±14.5 and 49.5±12.2 years, respectively. Harmonic dissection yielded better outcomes as compared to electrocautery with lower EBL (182±92 vs. 100±62, p-value: 0.00), operative time (187±36 vs. 191±44, p-value: 0.49), drain volume (1035±413 vs.631±275, p-value: 0.00), drain days (17±4 vs. 12±3 p-value: 0.00), seroma formation (21.3% vs. 33.3%, p-value: 0.071), surgical site infection (5.3% vs. 23%, p-value: 0.006) and postoperative pain (3.4±1 vs. 1.8±0.6, p-value: 0.00).

Conclusions: Although the harmonic didn’t reduce the operative time, however, it significantly reduced post-operative discomfort and morbidity to the patient.

ASIT MEDICAL STUDENT PRIZE: 0361: PENOSCROTAL MEDIAN RAPHE DEVIATION MAY BE A NEW CLINICAL SIGN IN HYPOSPADIAS

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Hypospadias congenital anomaly is defined by a dystopic urethral meatus with/without chordee and prepuceal hooing. We have additionally observed abnormal deviation of the penoscrotal median raphe (PMR) amongst hypospadics.  

Aim: To investigate the potential significance of the previously unreported association between hypospadias and PMR deviation.

Methods: Prospectively, 30 healthy male infant controls were examined for PMR deviation. Preoperative photographs of 46 hypospadics were assessed retrospectively for the same. These groups were statistically compared.

Results: PMR deviation was, significantly (p<0.001), twice as common in hypospadics (38/46; 83%) than controls (13/30; 43%). Incidence of PMR deviation was not affected by Duckett/Hadidi severity of hypospadias.

Conclusion: PMR deviation appears to be a significant clinical sign in hypospadias. Importantly, it is easily discernable even in the mildest forms of hypospadias (that are often diagnosed late) without requiring prepucial retraction. Thus, it could increase sensitivity of hypospadias detection by paediatricians during neonatal checks. Whether PMR deviation should be acknowledged as part of hypospadias spectrum requires further large-scale research (currently underway), but would have important implications for hypospadias epidemiologic, etiologic and pathogenesis studies as well as for further aesthetic refinement of hypospadias reconstruction by correcting abnormal PMR deviation.

SARS ACADEMIC AND RESEARCH PRIZE: 0126: MAGNESIUM SULFATE ATTENUATES LOCAL ANAESTHETIC INDUCED CHONDROTOXICITY

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Purpose: Local anaesthetic has been reported to have a potentially detrimental effect on human chondrocytes. Magnesium may be an alternative analgesic agent following arthroscopy. We aimed to report on the effect of chondrocyte viability of adding magnesium to commonly used local anaesthetic agents.

Methods: Human chondrocytes were grown under standard culture conditions. Cells were exposed to either bupivacaine (0.125, 0.25, 0.5%) or ropivacaine (0.1875, 0.375, 0.75%) for 15 minutes with or without the addition of magnesium (10, 20, or 50%). Untreated cells served as controls. The MTS assay was used to assess for cell viability 24 hours after exposure. One-way ANOVA were used to test for statistical significance.

Results: Magnesium alone was no more toxic than normal saline (P>0.3) compared to untreated cells. The addition of magnesium to the local anaesthetic agents resulted in greater cell viability than when cells were treated with local anaesthetic alone (bupivacaine (P<0.001), ropivacaine (P=0.001)).

Conclusion: We have showed that cell viability is improved with the addition of magnesium to local anaesthetic compared to local anaesthetic alone. These findings offer support to an alternative analgesia following arthroscopy although the optimum doses and combinations of local anaesthetic and magnesium are yet to be shown.