had purulent peritonitis (Hinchey III) and 12 patients had a contained abscess (Hinchey II). Of the Hinchey II and III patients it was found that 42% of Hinchey II patients and 32% of Hinchey III patients had purulent peritonitis (Hinchey III) and 12 patients had a contained abscess (Hinchey II). Of the Hinchey II and III patients it was found that 42% of Hinchey II patients and 32% of Hinchey III patients had purulent peritonitis (Hinchey III) and 12 patients had a contained abscess (Hinchey II).

Medical Student Prize 0042 SINGLE BUNDLE ANTERIOR CRUCIATE RECONSTRUCTION DOES NOT RESTORE NORMAL KNEE KINEMATICS AT 6 MONTHS: AN UPRIGHT MRI STUDY
Jamie Nicholson, Alasdair Sutherland, Francis Smith. University of Aberdeen, Aberdeen, UK

Introduction: Abnormal knee kinematics following ACL reconstruction may exist despite a resolution of tibial laxity and functional benefit. We performed upright, load bearing, MRI scans of both knees in the sagittal plane throughout different angles of knee flexion to determine the kinematics of patients undergoing unilateral reconstruction (n=12).

Method: Scans were performed pre-operatively and at three- and six-months post-operatively. Anterior-posterior tibial laxity was determined via arthrometer and patient function by validated questionnaires before and after reconstruction.

Results: In all ACL deficient knees, the tibial plateau was anteriorly displaced and internally rotated relative to the femur when compared to the control contralateral knee, particularly in extension and early flexion (lateral compartment displacement: extension 7.9mm, p=0.002 and 30° flexion 5.1mm, p=0.004). Reconstruction restored the subluxation of the lateral tibial plateau at three months, with a resolution of anterior displacement in early flexion, but not in extension (p=0.015). At six months the reconstructed knee again showed anterior subluxation in both the lateral (extension 4.2mm, p=0.021 and 30° flexion 3.2mm, p=0.024) and medial compartments (extension, p=0.049).

Conclusion: Knee kinematics actually deteriorate from three to six months after reconstruction, this was despite laxity improvement and functional benefit in our cohort. Persistent abnormal kinematics may cause degeneration to the knee joint.

Medical Student Prize 0093 ELECTRICAL STIMULATION ENHANCES MIGRATION AND INVASION OF BONE MARROW STEM CELLS: IMPLICATIONS FOR FRACTURE HEALING
Michelle Griffin, Amir Iqbal, Ardeshir Bayat. Plastic and Reconstructive Surgery, Manchester, UK

Introduction: Bone marrow mesenchymal stem cells (BMMSCs) are essential in fracture healing. However, the effects of various clinical electrical stimulation (ES) waveforms on BMMSCs cellular activities is unknown.

Method: We compared Direct Current (DC), Capacitive Coupling (CC), Pulsed Electromagnetic wave (PEMF) and Degenerate Wave (DW) by stimulating human-BMMSCs for 5-days for 3-hours a day. Cytotoxicity, cell proliferation, apoptosis and cellular-kinetics were evaluated after ES. Migration and invasion were assessed using fluorescence microscopy and affected gene and protein expression were quantified.

Results: DW had the greatest proliferative and least apoptotic and cyto-toxic effects compared to other waveforms and unstimulated cells (p<0.001). DC, DW and CC resulted in significantly more cells in S-and G2/M-phase (p<0.01) compared to the unstimulated BMMSCs. CC and DW caused more cells to invade collagen and showed increased MMP-2 and MT1-MMP expression (p<0.001) compared to the other waveforms and unstimulated BMMSCs. DC increased cellular migration in a scratch-wound-assay and all ES waveforms increased migration gene expression with DC having the greatest effect (p<0.001).

Conclusion: The ES waveform is vital in influencing BMMSCs cellular activities. Migration and invasion were increased by ES, which suggests that the recruitment of BMMSCs to the healing site during a fracture could be increased by ES.

Medical Student Prize 0585 DO PREVIOUS DEXTERITY SKILLS INFLUENCE PERFORMANCE IN SINGLE INCISION LAPAROSCOPIC SURGERY (SILS)? COMPARING SINGLE FORCE HARRIER PILOTS TO MEDICAL STUDENTS
Patrick Clarke 1, Hyunmi Carty 1, Peter Tsiam 2, Charles Maxwell-Armstrong 1, 1 Queens Medical Centre, Nottingham University Hospitals NHS Trust, Nottingham, UK; 1 University of Nottingham, Nottingham, UK

Aims: To demonstrate whether the dexterity levels of Harrier pilots allow the faster acquisition of the innovative and difficult to learn Single Incision Laparoscopic Surgery (SILS) technique compared to medical students.

Methods: 8 Harrier pilots and 29 medical students undertook 4 previously validated laparoscopic tasks (bean drop, block move, bile duct cannulation and appendicectomy) on SILS and 3-port laparoscopic simulator.

Results: SILS appendicectomy task mean times: Pilots 55sec vs 170sec medical students (p<0.002 CI:184.7, -46). Pilots had smaller mean times and error rates in all other tasks (not statistically significant). Total task times:SILS: Pilots 696sec vs 963sec students. Three port laparoscopy: Pilots 418s vs 497s students.

Conclusions: The pilots' high dexterity skills may explain their better performance in both simulator tests. The advantages of laparoscopic surgery over open surgery have been widely published and SILS may provide an even greater advantage than the traditional 3 port laparoscopic surgery but it is known to be very difficult to master. The selection of trainees for their hand eye coordination and special awareness as they do in the selection of military pilots in the UK may lead to faster and higher success in the acquisition of new laparoscopic surgical skills.

Medical Student Prize 0761 ENDOVASCULAR REPAIR OF ABDOMINAL AORTIC ANEURYSMS (AAA) OUTSIDE MANUFACTURERS INSTRUCTIONS FOR USE: INFRA-RENAL SEALING IS NOT A SAFE OPTION

Introduction: Current guidelines recommend EVAR use for a neck length of >15mm and angulation of <60°. We wished to assess outcome for EVAR inserted outside manufacturers ‘instructions for use’ (IFU).

Method: A large international EVAR registry database (EUROSTAR) was interrogated. Patients undergoing infrarenal EVAR outside IFU (neck>15mm or angulation >60°) were compared to those inside IFU. Primary endpoint was proximal type 1 endoleak. Secondary endpoints were all cause mortality, AAA related mortality, and secondary intervention.

Results: 11208 patients were reviewed. 2839 were undertaken outside IFU(25.3%); 672 had neck length <15mm and 2356 angulation of >60°. Patients were older(P<0.001) and had more comorbidities in the outside IFU group. Mean aneurysm diameter was 57.8mm; mean diameter for short neck aneurysms was 59.9mm and 62.6mm for angulated necks(P<0.001) compared to the unstimulated BMMSCs. CC and DW resulted in significantly more cells in S-and G2/M-phase (p<0.01) compared to the unstimulated BMMSCs. CC and DW caused more cells to invade collagen and showed increased MMP-2 and MT1-MMP expression (p<0.001) compared to the other waveforms and unstimulated BMMSCs. DC increased cellular migration in a scratch-wound-assay and all ES waveforms increased migration gene expression with DC having the greatest effect (p<0.001).

Conclusion: Endovascular repair of abdominal aortic aneurysms outside manufacturer’s instructions for use is associated with an unacceptable risk of proximal type 1 endoleak.
unknown. This study aimed to investigate their effects on duration of postoperative wound ooze.

**Method:** A prospective, multi-surgeon sample of 57 primary THR patients who were prescribed either Direct Thrombin Inhibitors (n=24, 12 males: 12 females, age 71±12) or Aspirin (n=33, 13 males: 20 females, age 68±14). Hospital stay, BMI, wound length and patient demographics were documented along with a daily assessment of wound ooze.

**Results:** Direct Thrombin Inhibitors significantly increased the mean days to dryness (6.2±2.77, Poisson exact 95% CI. 5.3-7.1) compared to those receiving Aspirin (3.0±2.44, Poisson exact 95% CI 2.3-3.7) in THR (P value <0.0001). No relationship was found between mean days to dryness and BMI, wound length or patient age.

**Conclusions:** Direct Thrombin Inhibitors significantly increase duration of wound ooze, cost over 100 times more per day than Aspirin, and potentially leads to a greater infection risk and longer hospital stays.

**Poster abstracts**

**0005 MEDIAL PATELLOFEMORAL RECONSTRUCTION BY ARTHROSCOPIC AUTOLOGOUS HAMSTRING TENDONS GRAFT – A RETROSPECTIVE CASE SERIES**

Preetham Kodumuri, Arvind Rawal, Shashi Kumar Nanjayan, Guido Geutjens. Royal Derby Hospital, Derby, Derbyshire, UK

**Methods:** We report a retrospective case series of 21 patients with recurrent patellar instability symptoms treated with arthroscopic autologous graft using hamstring muscle tendons from April 2008 to April 2010. All the operations were carried out by an experienced knee soft tissue reconstruction specialist surgeon using Gracilis or Semitendinosus muscle tendons as graft. Postoperatively, the patients were followed up at 6 weeks, 3 months, 6 months and 12 months. The primary outcome measures were Kujala score and Tegner Lysholm Activity Score and grading for Knee compared pre and post operatively. Secondary outcome measures were Visual Analogue Score (VAS) for pain and satisfaction.

**Results:** A total of 21 patients were operated. Mean age of patients was 19.1 years (14-40). Mean follow up was 11.14 months (3-24 months). The average Kujala Score improved from 48.6 to 84.8 and the Tegner Activity Score improved from 55.1 to 97.8. The Lysholm Tegner grade improved from 1.6 to 4.81. VAS pain score was 0.9 on average (0 - 7) and the VAS satisfaction was 9.57. There were no dislocations reported post operatively.

**Conclusion:** Autograft with hamstring tendons arthroscopically offer an excellent option in Medial Patellofemoral Reconstruction. There were no dislocations reported post operatively in our series.

**0014 DEATH OF THE LETTER: DELAY IN SURGICAL DIAGNOSIS OF LYMPHOMA**

Iain Parsons, Doug Bowley, Gerald Langman. Heartland of England Foundation Trust, Birmingham, UK

**Background:** Lymphoma is the commonest of haematological malignancies and biopsy of peripheral lymph nodes remains fundamental for diagnosis.

**Methods:** A retrospective review of patients diagnosed with lymphoma by peripheral lymph node biopsy between June 2003 and Sept 2008. Patients were identified from a prospectively maintained lymphoma database.

**Results:** 59 patients (M: 27, F:32); median time from referral to diagnosis was 41 days [range 10-300]. 41/59 (68%) referrals were by letter, 19/59 (32%) by direct communication [email or telephone call]. Median time to diagnosis was 53 days for letters, cf. 17 days for direct referral (p<0.001). ENT surgeons biopsied 30 patients (51%), general surgeons 27 (46%) and thoracic surgeons 2 patients (3%). Median delay to diagnosis for ENT patients was 56.5 days cf. 29 days for general surgery (p=0.0304). ENT patients attended a median 2 preoperative clinic visits cf. 1 with general surgeons (p=0.0131). 50% of ENT patients had pre-operative fine needle or core needle biopsy cf. 11% of general surgical patients (p=0.0019).

**Conclusion:** Significant delays to diagnosis is incurred when referral is by letter compared to direct contact. ENT surgeons’ patients experienced significantly more delay than general surgical.

**0016 WHAT FACTORS ARE ASSOCIATED WITH PROLONGED HOSPITAL STAY FOLLOWING PLANNED DAY-CASE LAPAROSCOPIC CHOLECYSTECTOMY?**

Jennifer Isherwood, Dominic P.J. Howard, Rebecca Saunders, Yamen Jabri, Debbie Phillips. Milton Keynes NHS Trust, Milton Keynes, UK

**Aims:** Day-case laparoscopic cholecystectomy (LC) is a NHS 2010 high volume “Best Practice” tariff. This case-controlled study investigates what factors prevent patients from achieving successful day-case discharge following LC.

**Methods:** Detailed data collection for consecutive patients undergoing planned day-case elective LC over a 3 year period (2007-2010). Two sub-groups were isolated for case-control comparison; all (62) consecutive failed day-case LC patients (FLC) admitted for > 48 hours, and 62 consecutive successful day-case LC patients (SLC) over the same time interval.

**Results:** The FLC group represented 8.0% of the total LCs performed over the 3 year period (62/776). Patient demographic comparison of the FLC and SLC groups revealed similar age, sex-mix, co-morbidity, BMI, & ASA grades (all p>0.05 Fisher’s exact/2x2 tests). Indication for surgery was more commonly cholecystitis in FLC (45.2%vs21.0%) (p<0.01). Operative duration was longer in FLC (90vs60 mins p<0.001,MWU-test). As was conversion to open (30.5%vs0%), drain placement (45.2%vs1.6%), delayed drain