## Clinical: Intervention and trauma

### P-111 A review of interventional radiology and its utilisation in trauma patients

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**Aims:** To assess the utilisation of the Interventional Radiology service at a busy Trauma Unit from 1st January 2011 to 31st August 2012 and identify the common injury patterns and mechanisms of injury that lead to its usage.

**Methods:** Retrospective case review of all trauma cases and analysis of whether the Interventional Radiology service was activated, under what circumstances this was done, and what intervention was performed. A secondary review of mechanisms of injury that led to such interventions was performed.

**Results:** From 1st January 2011 to 31st August 2012, seven patients were taken to the Interventional Radiology suite for suspected ongoing traumatic haemorrhage. Two patients (28.6%) had interventions for splenic injury, 3 patients (42.8%) had procedures for pelvic bleeding and 2 patients had no ongoing haemorrhage. One patient died on the same day as the intervention from their injuries. The commonest injury patterns were falls from height or high speed RTC, both representing high mechanisms of energy transfer.

**Discussion:** Interventional radiology offers a minimally invasive alternative to open procedures for the control of haemorrhage. With the advent of Regional Trauma Networks, (RTNs), the pre-hospital triage tools that determine whether a patient should be taken to the Major Trauma Centre (MTC), will under-triage a proportion of patients with significant injury. Having a service in a Trauma Unit that offers minimally invasive techniques to such patients, will prevent unnecessary open damage-control techniques which in themselves can aggravate the coagulopathy that occurs in severely injured patients.

### P-112 Patients' experience of anxiety and pain during interventional radiology procedures

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**Aims:** The aim was to assess the levels of anxiety and pain experienced during interventional radiology (IR) procedures. It was felt that many patients experience unreasonable levels of these but do not inform staff at the time. Pain relief at this centre is usually nurse led when an anaesthetist is not present. Pre-procedure medication with anxiolytics or analgesia is not currently given routinely.

**Methods:** Questionnaires were given to all adult patients immediately after undergoing elective IR procedures at our district general hospital over the course of three months. The questions were focused on patients' experience intra-procedure anxiety and pain as well as their overall satisfaction with the procedure.

**Results:** Data was collected from 60 patients after a wide range of IR procedures, the majority of whom received only lignocaine in the way of analgesia and no anxiolytics. Overall satisfaction was high among the patients questioned however there existed variance in levels of pain and anxiety between the types of procedures performed. Insertion and removal of nephrostomies, for example, was poorly tolerated with all patients experiencing moderate or severe anxiety and half experiencing moderate or severe pain.

**Discussion:** While patient satisfaction is high after IR procedures at our centre, some procedures are seemingly better tolerated than others and some patients are experiencing a significant amount of pain and anxiety. We suggest that it would be prudent to target anesthetic IR lists towards procedures where we have found higher levels of these in order to optimise use of analgesia and sedation.

### P-113 Inferior vena cava filters - an audit of their justification, planned longevity and retrieval

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Placement of inferior vena cava (IVC) filters can aid prevention of pulmonary thromboembolism in at risk patients. However IVC filters also carry potential complications and should be removed when no longer required in order to minimise risk. The British Society of Interventional Radiologists (BSIR) recently published the first UK IVC filter registry report in which it is recommended that all requests for filters should give appropriate justification, indicate whether the filter is to be temporary or permanent and, if temporary, to remove the filter within nine weeks. This audit examined all episodes of IVC filter insertion in a district general hospital over a five year period to determine compliance with BSIR recommendations.

A total of 47 IVC filters were placed over five years. In three cases (6%) there was documented evidence at the time of request as to whether the filter would be temporary or permanent. Of the 47 filters placed, 10 were removed in the same hospital (21%). Seven of these filters were retrieved within the recommended time frame of nine weeks. There was no evidence that the remaining 37 filters were removed, though one patient left the local area. Eighteen patients (38%) died with a filter in situ.

In this audit only a minority of requests demonstrated consideration of filter longevity. In view of these findings, an IVC filter pathway was introduced to ensure that BSIR recommendations are followed and, in addition to this, all cases should be discussed with a haematologist to minimise unnecessary IVC filter placement.

### P-114 **The role of ultrasound guided hydrodistension in adhesive capsulitis**

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**Introduction:** Adhesive capsulitis, also known as frozen shoulder, is a common condition characterized by pain and reduced range of motion in the affected shoulder. Treatment regimens for adhesive capsulitis include a trial of conservative therapy, followed by more invasive procedures for recalcitrant cases.

**Objective:** To explore the efficacy of Ultrasound guided hydrodistension in the treatment of adhesive capsulitis of the shoulder joint.

**Method:** We retrospectively evaluated 20 patients with adhesive capsulitis who had Ultrasound guided shoulder hydrodistension done between May 2012 to August 2013. All had continuous pain and significant range of motion (ROM) limitations of the shoulder joint. SPADI (Shoulder Pain And Disability Index) score was used to evaluate their symptoms before and after the procedure.

**Conclusion:** The evaluation of our data showed that out of total 20 patients, 2 patients had <40 % improvement in their symptoms, 7 patients had 40-50% improvement, 5 patients had 50-70% improvement and 6 patients had more than 70 % improvement.

**Discussion:** Ultrasound guided shoulder hydrodistension is a safe procedure which significantly improves pain and range of motion in the shoulder joint. When compared with other invasive procedures used for frozen shoulder, Ultrasound guided hydrodistension is a capsule preserving procedure which is less invasive with lesser risk of radiation exposure and fewer post procedure complications.

### P-115 **Complications of the mynx arterial closure device**

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**Purpose:** Vascular closure devices (VCD) have become very popular for the closure of common femoral arterial punctures after endovascular procedures. They decrease time to haemostasis and to ambulation and reduce patient discomfort. The Mynx VCD is one such device that was designed to leave no intravascular material but there have been reports that intravascular material is often seen post deployment and that pseudoaneurysm formation is a relatively frequent complication.

**Materials and methods:** Endovascular procedures performed in the radiology department in which the Mynx VCD was used after femoral puncture from 1/6/10 to 30/8/11 were retrospectively reviewed. The clinical records and radiology system were checked for any complications and all subsequent relevant imaging studies were reviewed for intravascular material or stenosis at the puncture site.

**Results:** One hundred and forty-nine patients' records were reviewed. Fourteen patients underwent bilateral punctures and 11 patients underwent repeat procedures (total 174 deployments). Clinical follow up ranged from 524 to 924 days (median 701 days). Relevant follow up imaging was available for 110 procedures (63%), with 357 studies showing the arterial puncture site. No intravascular material was seen and there were no instances of arterial stenosis attributable to the VCD. There were no serious complications and 13 (7%) minor complications. No blood transfusions or surgical procedures were required.

**Conclusions:** In this large series the Mynx closure device was not associated with intravascular material or arterial stenosis. The complication rate is comparable to other VCDs.

### P-116 **Retrospective analysis of diagnostic yield and complication of percutaneous CT guided needle biopsy of pulmonary lesion**

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**Background:** Introduction of Computed tomography (CT) has helped in accurate localization of lesion, needle puncture and access to any area of the body. CT guided biopsy of lung lesions has rapidly emerged as a well established, less-invasive, rapid and fairly accurate diagnostic technique. Despite being high sensitivity, specificity and relatively cost effective the diagnostic modalities have its own pitfalls and complications.

**Aim:** To assess diagnostic yield of CT-guided lung biopsy and complications.

**Method:** Retrospective audit of 100 patients over 2 years. Data obtained from PACS, CRIS and histology from ICE software.

**Results:** 100 Patient (mean age 69 years; Median 72 yrs; male/female =42/58). Commonest tumour site RUL (25%) and common approach posterior approach 40%. Histology diagnosis of malignant 63 %, benign 11 %, insufficient sampling 11% and Infective or fibrotic 13%. The overall yield of the biopsy was 91 %.

**Complicaion:** Pneumothorax 30% (Asymptomatic n=23; Symptomatic n = 7) and 10 % required chest drainage (n=3). Hemoptysis 5 % and hemorrhage 3% but no significant major bleeding complications occurred. No correlation between the needle size and complications noted.

**Conclusions:** CT-guided lung biopsies is safe, minimally invasive procedure and has an excellent diagnostic accauracy with no mortality but has a reasonable rate of complication.

These complication rates can further be minimized by focused, dedicated and supervised training of junior trainees with regular feedback and organizing simulated hands on workshops. Further Maintaining standardizing data also facilitate for auditing, research and comparing between centers.

P-117 **Review of catheter directed thrombolysis for acute limb ischaemia**

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**Aims/objectives**: A retrospective review of patients who underwent percutaneous catheter-directed thrombolysis was performed. The results were compared to the Cardiovascular and Interventional Radiological Society of Europe (CIRSE) standards published in 2011.

**Relevance**: Intra-arterial thrombolysis is an established alternative to open surgery, but is only used in severe limb ischaemia due to the potential for complications.

**Outcomes**: 11 patients underwent thrombolysis during the three year study period. The mean age of the patients was 62 years, with 10 male and 1 female. All the patients were managed in appropriate high dependency beds.

The angiographic outcomes were categorised into groups: Complete Technical Success - 6 patients, Partial Technical Success - 4 and Failure of Thrombolysis - 1 patient. There was clinical success in 9 patients, but of these 4 required bypass operations to achieve this.

Two patients underwent subsequent amputation. Complications were classified as 1 major, which was an intra-abdominal haemorrhage and one minor, which was a groin haematoma.

**Discussion:** Despite being a tertiary vascular unit, catheter directed thrombolysis for acute limb ischaemia is an uncommon procedure in our centre. This is a time consuming procedure for interventional radiology, but can be useful for assisting in limb salvage.

Major complication rate was 9%, which is within the limits set by the CIRSE standards. However, small cohort size prevents statistically significant conclusions.

Overall there was good adherence to CIRSE guidelines. Possible areas for review include the greater use of pre-procedure non-invasive imaging and monitoring of acid-base balance.

## Errors and discrepancies