

Aims/Objectives: In this pictorial review we will be providing an overview of orthopaedic implants used in the management of proximal femoral fractures as well as their indications. We will be presenting some of the complications associated with these implants.

Content: Around 75,00 hip fractures occur in the UK per annum with figures expecting to rise with an ageing population. Due to evolving technology, and advancements in engineering, there are an increasing number of different orthopaedic implants used in managing these fractures. There will therefore be more images that will need to be reported by Radiologists.

We will be reviewing intracapsular and extracapsular fractures in turn. We will demonstrate the various implants and fixation devices used in treating these fractures as well as their indications. We will cover some of the common recognised complications as well as a few unusual ones.

Relevance/ Impact: A broad understanding of the various orthopaedic implants used in the surgical management of proximal femoral fractures is important for a Radiologist. It can help the individual to better appreciate the biomechanics of the fracture and fixation, and it can develop an interest in musculoskeletal radiology. It can provide the trainee with knowledge to facilitate active participation in MDT meetings.

Outcomes: We believe this poster will be of educational value, especially for trainee radiologists.

Other

P-142 **MRI negative invasive breast cancers**

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Objectives: To analyse breast MRI of all patients who had histological proven invasive breast cancers and to correlate with the mammographic and ultrasonographic findings, reviewing the imaging findings in MRI negative invasive breast cancers.

Content : A retrospective analysis of the histological diagnosis of all newly diagnosed invasive breast cancers was done over a 3 year period from January 2009 to October 2011. These were then further analysed to find out the number of patients who had MRI scans as part of their investigations. Correlation of MR findings was done with the mammographic and ultrasonographic features.

Relevance: This analysis emphasises the importance of multimodality imaging in suspected breast masses. Outcome: Over a 3 year period of the total 339 patients with invasive breast cancers, 148 patients had MRI. The patient selection was based on the density of breast tissue, multifocality of cancer and histology on core biopsy. 144 (97.2 %) patients had true positive results and 4 (2.7 %) were false negative. All the false negative patients had normal mammogram. Ultrasonographic findings were benign in three patients and was normal in one patient.

Discussion: Invasive breast cancers can be mammographically occult and can present with benign features on USS. Breast MRI detects most invasive breast cancers but it is important to recognise that there are a small number of false negatives. Combination of multimodality imaging features with clinical and histological correlation to be done in all suspected breast masses.

P-143 **Radiology of the pan corpus manifestations of histiocytosis x (LCH) seen in a 15 year old boy**

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Aims/Objectives: A look at the multisystem multifocal expression of LCH

Content LCH is one of the rarer but known conditions that children can present with. Typically apart from presenting systemic feature of bone pain and fever, skeletal manifestations are seen which help in guiding biopsy to establish the diagnosis. The disease on one of a spectrum of organ infiltration with epidermal dendritic cells(Langerhans cells) and can range from a variety of presentations. Most commonly radiologists see the skeletal manifestations(monosystemic) of lytic lesions. We have here a case of a teenager presenting with multisystem LCH with typical symptoms but aggressive course of the disease.

Outcomes: Plain film, CT examination for evaluation of abdominal pain lead to the discovery of the multisystem findings: Lytic scalp lesions on plain film, Multiple cyst like lesions in the lung and liver. MRI showed expansive mastoid lesions. Histological examination, these were confirmed to be LCH.

Discussion. The range of presentation of eosinophilic granulomas are well documented in ranging from single skeletal lesions to the fatal Letterer-Siwe syndrome, but the multisystem presentation in a teenager is a rare presentation and the pathology is reviewed

P-144 **Incidental findings in low resolution visceral adipose tissue magnetic resonance imaging scans**

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Aims: To investigate the incidence of clinically significant incidental findings in a volunteer population undergoing MRI measurement of their VAT.

Content of Presentation: Forty-nine female volunteers were recruited for VAT measurement and their scans reported by a consultant radiologist.

Relevance: Visceral adipose tissue (VAT) measurements using magnetic resonance imaging (MRI) are becoming increasingly popular for quantifying the risk of diabetes and cardiac disease. Low resolution images are frequently acquired for this purpose to enable fast measurement. However, anatomical detail is still available and the presence of gross abnormalities easily detected.

Outcomes: The mean (SD) age of those with incidental findings was 51y (10.0) and 48.8y (13.2) for those without. There were 7 (14%) incidental findings of note in this volunteer population. However, because of the low resolution of the scans they could not be characterised accurately.

Whilst they were likely to be incidental findings such as simple renal or hepatic cysts, it was difficult to exclude other lesions. The patient's GP's were sent the MRI report to enable them to follow up the patients care. Other abnormalities that were not clinically significant were also noted, such as changes in the intervertebral discs, vertebral end-plates or patchy marrow signals.

Discussion: MRI-VAT measurements, which are acquired using a fast, low resolution pulse sequence yield anatomical information with the ability to identify significant clinical findings. It is recommended that such scans are reported by a radiologist or other expert in MRI image interpretation to ensure that any potential clinically significant findings are identified.

P-145 **Evaluation of CT urography as a second-line investigation in patients presenting with visible haematuria in the Highland Region**

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Background Visible haematuria is a cardinal symptom of urological malignancy, and is investigated initially with cystoscopy and ultrasonography. CT urography replaced IV urography as the second-line investigation in the Highlands in 2005 but its ability to detect significant urological pathology, not otherwise picked up by ultrasound and cystoscopy, has never been assessed.

Method Prospective observational study comparing the diagnostic yield of CT urography with first-line ultrasonography and cystoscopy.

Results The overall sensitivity of CT urography in detection of urological pathology was 94.0% vs. 61.2% of ultrasonography. Both were highly specific: 97.5% and 96.9%, respectively. Despite the good agreement between the two tests ($\kappa=0.612\pm0.059$, $p<0.001$), detectability of pathology was significantly higher on CT urography (McNemar: $p<0.001$), with 9.3% more 'abnormal' cases diagnosed, including 1 renal carcinoma, 2 benign renal masses, and 62% more calculi. Urothelial malignancy and hydronephrosis were equally well detected by both investigations. 225 'incidental' lesions were identified in 137/227 patients following CT urography.

Conclusion The management of patients with visible haematuria was not changed significantly by the use of CT urography. Therefore, ultrasonography and cystoscopy should continue to be used as the first-line tests for identifying the source of bleeding. CT urography should be reserved as a second-line investigation in older patients, those with additional risk factors, and for further evaluation of abnormalities detected on ultrasound or cystoscopy. One debatable benefit of CT urography lies in its detection of incidental asymptomatic pathology at the expense of additional radiation dose and higher cost.

P-146 **An audit of justified HSC-205 referrals in radiology**

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Introduction HSC-205 referrals are used for patients with either suspected cancer or staging of cancer before treatment and are dealt with quickly to comply with the time scale for treating cancer patients. The requests labelled inappropriately as HSC-205 would result in additional pressure on administrative and clinical staff in radiology. This instigated an audit to assess the clinical appropriateness of the requests.

Method The clinical appropriateness of all the HSC-205 requests in our department in the month of May 2011 was assessed.

Results There were 295 HSC-205 requests during the selected month. Majority (164) of them were computed tomography(CT) requests, 79 for ultrasound, 25 for MRI scans, 18 NM scans and 9 of them were for fluoroscopy. The specialty specific requests distribution were as follows: gastrointestinal(26.8%), chest(20%), gynaecology (18.6%), urology(13.6%), head and neck(11.9%), breast(6.8%), neurology(1.3%), orthopaedics(0.7%) and vascular surgery(0.3%). 90.5%(267) requests were found clinically justified to be classified as HSC-205. 10%(28) were inappropriately requested as HSC-205. Out of 267 justified HSC-205 requests, 244(91.4%) were for suspected cancers and 23(8.6%) for already diagnosed cancers. 32.8% of suspected cancers were reported as cancers.

Discussion Only 10% of all HSC-205 requests were not clinically justified. This could either because of ignorance or the requesting clinicians trying to take advantage of the quicker pathway. An addition of information bar in the electronic request system when HSC-205 is selected, a formal letter to all clinicians and informal education during multidisciplinary meetings have been undertaken in our department to improve the appropriate use of HSC-205 pathway.

P-147 **Ultrasound guided fine needle aspiration cytology of thyroid nodules - a single centres experience**

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Introduction Isolated thyroid nodules are investigated by means of Fine Needle Aspiration (FNA) Cytology. At our centre, six Radiologists undertake FNA sampling under ultrasound guidance with a non standardised approach. If FNA is deemed diagnostically appropriate, it is performed in isolation with the validity of the aspirated sample not being known until a later date. American Thyroid Association Guidelines 2009 state that non diagnostic cytology should be repeated under US Guidance; therefore patients with inadequate FNA samples require a second appointment for the procedure to be repeated. This study will identify the percentage of adequate cytology sampling across the centre and subsequent repeat procedure workload.

Method A CRIS search was performed to identify Ultrasound Neck examinations with FNA over a two year period. Each report was reviewed to determine if a Thyroid FNA had actually been performed. Each FNA event was reviewed in conjunction with the cytology results.

Results The CRIS search identified 187 events of US Neck with FNA. After exclusions were applied 144 events were eligible for review. Further results analysis is currently being undertaken.

Discussion Adequate sampling rates are expected to below recommended levels. The centre is currently undertaking a review of the service in an attempt to create a 'one stop clinic' where ENT

Surgeons, Radiologists and Cytologists all convene to aid a streamlined service. With the addition of 'instant feedback' to the FNA procedure i.e operators find out immediately if patients require a further FNA, patient diagnosis will be quicker and require less repeat appointments.

Student Radiography

P-148 Distribution of common cardiac disorders diagnosed by echocardiography in a tertiary cardiac care centre: a descriptive study

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The objective of this study was to outline common abnormalities, observed in a population of patients who came to a tertiary cardiac care centre. Moreover, to review the spectrum of these abnormalities those are encountered in a high volume.

We conducted a retrospective study in 296 consecutive patients with heart abnormalities. Of these 11.1% paediatric, 63.5% adult and 25.3% geriatric patients were identified. Both out-patients and in-patients were examined and their reports subsequently formulated. Out of these 53.0% were males and 46.6% females. Patients' age, sex and medical record number were extracted from their reports after obtaining consent from ethical review committee of the hospital. Three echo-cardiographers interchangeably performed the examinations that were enrolled in the study. Toshiba Nemio XG machine was used. Standard views were obtained depending upon clinical information; however for most of the patients the operators obtained conventional four views.

Out of 296 patients, 64.5% were normal of which 31.4% were females and 32.0% were males. Most common abnormalities identified were Myocardial Infarction (35.1%), Congenital Cardiac Disorders (5.4%), Acquired Heart Diseases (19.5%), Pulmonary Stenosis (1.0%) and Pulmonary Embolism (0.3%). Eighty two [27.2%] cases were reported as technically difficult study.

In a tertiary care centre, a wide variety of diseases with a large number of patients normally presents. It is deduced from the current study that echocardiographic information must always be correlated with clinical information. Owing to high sensitivity of echocardiography, it must be made first choice for the assessment of heart disorders along with other baseline imaging

P-149 An observational study on the outcome of the diagnostic imaging in the management of pulsatile tinnitus

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No abstract available

P-150 Paediatric extrapulmonary TB – new concepts in imaging

Ranbir Sandhu; Afshin Alavi; Joanna Danin; MaiAi Seah; Bhanu Williams; Sam Walters; Imperial College Hospitals NHS Trust

Objectives : Extrapulmonary Tuberculosis (TB) is an increasing problem accounting for more than 20% of cases. Children appear to have a higher risk of contracting extrapulmonary TB involving any organ.

TB is difficult to diagnose and the standard established diagnostic tests (including indirect signs of low epidemiological specificity, symptoms, a chest radiograph and an intracutaneous tuberculin test) are often inconclusive and microbiology tests are time consuming.

The purpose of our study is to highlight the necessity of new imaging concepts, to rule out the role of different modalities and to review the characteristic imaging findings of various forms of extrapulmonary TB.