

Conclusion: This study confirms that intraarticular steroid injection is highly effective therapeutic measure for hip osteoarthritis across all grades of disease severity.

P-043 Now an e-poster

P-044 Evaluation of ALVAL using US in patients with MoM

Teik Chooi Oh; Syed Ali; Simon Beardmore; George McLauchlan; Jeremy Viner; Anas Hatab; Royal Preston Hospital, Lancashire Teaching Hospitals Foundation Trust

Metal-on-metal (MoM) hip replacements are increasingly common in the past decade but up to 3% experience a complication with aseptic lymphocyte-dominated vasculitis associated lesion (ALVAL). Patients with ALVAL develop a non-specific hip pain which is difficult to diagnose clinically.

Traditionally, the imaging of choice has been Magnetic Resonance Imaging (MRI) but the local streak artefacts from metallic implants can sometimes degrade the image quality and obscure an early ALVAL. Increasingly, our Radiology department evaluates ALVAL queries initially with Ultrasound (US). We have found US to be an effective tool in excluding or confirming ALVAL. In addition, there can be features of adverse reactions to metallic debris (ARMED) such as an echogenic effusion. This along with biochemical markers can help aid in ALVAL.

We present various appearances of ALVAL and other imaging features of adverse reactions to metallic debris on US and MRI.

Accurate diagnosis of ALVAL is important because intraoperative confirmation of chronic inflammation suggestive of ALVAL will necessitate a replacement of the prosthetic component surfaces. By establishing accurate diagnosis of ALVAL using US, we can avoid the more resource-heavy MRI as well as its potential downfalls with local artefacts.

P-045 Direct GP access for soft tissue lump ultrasound imaging

Basavaraj Chari; Sylvia Connolly;

Warrington and Halton Hospitals NHS Foundation Trust; St Helens and Knowsley NHS trust; Whiston Hospital, Prescott;

Introduction: Soft tissue lumps and bumps are among the common presenting symptoms in the primary health care sector. Such lumps, bumps, nodules or masses comprise a broad and potentially bewildering array of benign and malignant processes. The origin of these lesions could be cutaneous, subcutaneous, involving muscle or bone and it is a difficult decision at the primary health care level for an appropriate hospital referral for evaluation. The management of such lesions depends upon their nature and the imaging is of paramount.

Methods: We performed a retrospective analysis through the radiology information system looking specifically for patients who were referred directly by GP for soft tissue lump ultrasound scanning. The request and report were analysed and demographics, outcome i.e. benign, malignant or inconclusive lesions which proceeded to have further imaging were tabulated.

Results: A total of 215 GP referrals were included in the study (93 males, 122 females). The age range was between 1 and 99 years (mean 47.85). Total number of normal scans - 57, benign findings - 139, obviously malignant - 2, indeterminate - 17. Further imaging included - MRI in 15, repeat US in 4, CT in 2 and Plain films in 2 patients. From further imaging, confirmed malignant lesions - 4 (1.86%), benign - 9 and normal studies - 7.

Conclusion: Ultrasound is an ideal tool for soft tissue imaging. A direct access given to the primary care sector helps early diagnosis and effective management. It helps increasing diagnostic confidence to the GP and reduces unnecessary patient anxiety.

Clinical: Neuroradiology

P-046 Imaging skull base pathology

Uma Viswanathan Nair; Kimberley Lam; R Hanlon; H Lewis-Jones;

University Hospital Aintree

Skull base pathology raises a significant challenge to the clinical Radiologist. The anatomy of the skull base is a complex area and modern imaging techniques utilising CT and MR have made the level of anatomy and detail of the skull base even more complex to interpret.

The aim of this poster is to present a rational method for interpretation of skull base pathology and to illustrate the common pathologies encountered in this area.

We present 15 illustrative cases which demonstrate the link between clinical presentation and the need to inspect the radiological course of specific cranial nerves. We also present the common coincidental findings that do not require clinical intervention and can be misinterpreted as significant pathology.

P-047 Why are we not out of our skulls?

*Stephen Lyen; Nicholas Ridley; Mark Hawkins; Ann Jones;
Great Western Hospital*

Aims/Objectives: Following the introduction of NICE head injury guidelines and increasing use of CT, the number of skull radiographs being performed has been steadily decreasing. Nonetheless, requests for skull x-rays are still made. Our aim was to audit the indications, numbers and appropriateness of skull radiographs performed in our department in recent years.

Content: We reviewed the indications for skull x-rays over the past year and the total numbers performed over the past 5 years. Accepted Indications include: 1. Craniosynostosis, 2. Skeletal dysplasia, 3. NAI, 4. Foreign body, 5. Intraventricular shunt, 6. Skeletal survey for myeloma, 7. Paget's disease.

Relevance/Impact: Despite decreasing numbers of skull radiographs, requests are still made and it is important to ensure we have an understanding of why they are required.

Outcome: Review of the past year showed that out of 117 skull radiographs, the most common indications were for Myeloma (47.9%), Craniosynostosis (23.1%), Bony scalp lumps (8.5%) and NAI (6%). Only 2 cases were considered inappropriate, 1 adult trauma and 1 suspected pituitary adenoma.

Over the past 5 years the number of skull radiographs has decreased by approximately 65% (333 to 117).

Discussion: Most requests are appropriate as per our criteria. 2 out of 117 could have been avoided. It is debatable if bony lumps are more appropriately assessed with ultrasound/CT instead of plain film. It is likely that a small number of skull radiograph requests will persist, particularly in the paediatric population and for myeloma patients. Regular audit will ensure these requests remain appropriate.

P-048 "it's all in the head!"-neuroradiological manifestations of systemic disease

Amarjot Chander; Kumar Das;

Walton Centre for Neurology and Neurosurgery; The Walton Centre NHS Foundation Trust, Liverpool,

Key Learning Objectives: To recognise the varied neuroradiological appearances of systemic diseases. To consider systemic disease in the differential diagnosis for neurological symptoms. To highlight the importance of knowing relevant past medical history when interpreting radiological investigations.

Background: Systemic diseases can manifest in many different ways. In the context of a known condition, it is always important to consider this as an underlying cause for neurological symptoms. It is essential for clinicians to provide accurate and relevant information about past medical history, to enable the correct study to be performed and allow full interpretation of neuroradiological findings.

Imaging Findings: Pictorial review illustrating 8 examples of neuroradiological manifestations of systemic disease including sarcoidosis, paraneoplastic syndromes and HIV. Clinical scenarios are given with each example.

The importance of relevant clinical history is emphasised.

Conclusion: Neuroradiological change due to systemic disease is an important differential to consider when investigating neurological symptoms and signs.

Knowledge of relevant past medical history is key to interpretation of radiological investigations.

P-049 Service evaluation of subdural electrode and grid placement

Jennifer Larsen; Thomas Manship; Ian Craven; Daniel Connolly; Dev Bhattacharyya; Ruth Batty;

Sheffield Teaching Hospitals; The Neuroradiology Department, The Royal Hallamshire Hospital, Sheffield.

Aims: Service evaluation of current practice and complication rates of subdural electrode/grid placement prior to epilepsy surgery in a single centre.

Methods: Standards were devised: Patients must have medically resistant epilepsy and be a surgical candidate (100%). There should be discrepant semiology, EEG and MR findings regarding the epileptogenic focus (100%). There should be no complications (0%). Management should be affected (100%).

All patients with electrode/grid placement prior to epilepsy surgery between 2005 and 2008 were included. Data was collected on a proforma detailing: demographics, medication, semiology, MR and EEG findings, complications and whether or not management was affected.

Results: 14 patients were identified. Data was available in 11. Median age was 46 years. 91% had drug refractory focal epilepsy. 100% had non-concordance of EEG, semiology and MR findings. 36.4% had an abnormality in an eloquent area. Placement influenced management in 91%. 5 patients had no follow up imaging. 3 had post-operative imaging but no post grid / electrode placement imaging. 3 patients had imaging pre-operatively post grid / electrode placement and 1 out of the 3 had a clinical complication with imaging changes (abscess).

Conclusions: All patients undergoing subdural grid / electrode placement should be surgical candidates and the results should directly influence management.

Magnetic resonance imaging should be performed on all patients' pre- and post- electrode/grid insertion and post surgery.

Closing the audit loop with a larger population is needed to accurately verify the complication rate.

P-050 Urgent MRI for spinal cord compression and the quality of referral at Luton and Dunstable Hospital

*Mohammed Malik; Kumar Subramanian;
Luton and Dunstable NHS Foundation Trust*

Background: Acute spinal cord compression is a neurosurgical emergency accounting for 4000 cases every year in England and Wales¹.

Gold standards: NICE guidelines suggest that any patient with a suspected metastatic cord compression should undergo MRI of the whole spine within 24 hours and the clinical indicators are¹:

- Radicular pain
- Any limb weakness
- Difficulty in walking
- Sensory loss
- Bladder or bowel dysfunction
- Neurological signs of spinal cord or cauda equine syndrome

Set standards: All the patients with suspected spinal cord compression should have their MRI scan done within 24 hours.

Methodology: A list of patients who underwent urgent MRI for suspected spinal cord compression between October 2010-March 2011 was generated. A random selection of 62 patients was done.

Results: 74% patients had their scan done within 24 hrs. However, 92% patients had their scans done within 28 hrs, with only 8% patients having their scan done after 28 hrs.

All the patients with positive scans had good referral indicators.

Seniors had higher number of negative scans with poor clinical indicator in comparison to juniors.

Comparison with set standards and Discussion: Luton and Dunstable Hospital performance is excellent. Both senior and junior staff sent in referrals which did not comply with the gold standards.

The proposed action points from the audit are:

- Patient must be reviewed by a senior doctor, documenting clearly the patient's symptoms, signs and suspected diagnosis on the request form.
- Strict adherence to the referral criteria on the part of the radiologist vetting the request for the scan.

References :

¹ Metastatic spinal cord compression. Nice Guidelines (accessed 20 Sept 2011).

<http://guidance.nice.org.uk/CG75>.

Clinical: Head and neck

P-051 Midface fractures explained

David Minks; Wendy Matthews

Leeds Radiology Academy; Leeds General Infirmary;

Introduction: Registrars beginning on-call duties may be inexperienced diagnosing and reporting craniofacial trauma. 71.5% of facial fractures affect the midface. Computed tomography is increasingly used over conventional radiographs in trauma imaging. Frequently, fractures to the midface are detected incidentally by the radiologist on a CT requested for neurological purposes. Here, prompt referral to the appropriate surgical discipline is imperative in optimising functional and aesthetic repair.

This poster explains the anatomy of the facial buttresses and describes characteristic fracture patterns affecting the midface, along with relevant management options. This will aid the radiologist in determining clinical importance during reporting or referral.

Method: The anatomy of the facial buttresses is explained diagrammatically and various imaging modalities employed to illustrate fracture patterns. This poster explains patterns and grading of the following injuries:

- Nasal and nasoethmoid fractures
- Zygomatic arch fractures
- Zygomatico-maxillary complex fractures
- Orbital floor fractures
- Le-Fort classification

Results: Imaging examples are used to explain these complex injuries, with advice on how to concisely classify them on report, avoiding common pitfalls.

Discussion: Early and accurate assessment and description of complex midface fractures can help the surgeon prevent functional impairment and cosmetic deformity. An understanding of the facial buttresses and their common fracture patterns allows the radiologist to more accurately inform the surgeon of injuries present.

P-052 Radiological anthropometric assessment of cervical neurovascular structures to explosive fragmentation

John Breeze; Andrew West; Jon Clasper;

Royal Centre for Defence Medicine

42% of explosive cervical wounds are fatal, due to either vascular or spinal cord trauma. The aim of this paper was to determine military specific cervical neurovascular and external anthropomorphic