

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

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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

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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

data. This will be used to scale future numerical injury models of the neck and improve body armour design with a view to prevention or mitigation of combat neck injury.

Contrast enhanced CT angiograms of 50 UK servicemen were analysed. Mean diameters and distances from the skin surface were determined for the carotid artery (CA), internal jugular vein (IJV), vertebral artery (VA) and spinal cord (SC) at the three surgical neck zones. Horizontal neck circumference at C6 and three potential vertical cervical anthropomorphic measurements were analysed for intra-variability.

The diameter of cervical vascular structures are greater and the vessels more superficial as the anatomical plane moves caudally. The SC and VA are better protected than the IJV and CA due to their greater depth and bony coverage, except for the VA in Zone 1.

Future cervical anthropomorphic assessments should use the vertical angle of mandible to mid-clavicular distance in combination with the horizontal neck circumference as these demonstrated the least variability. Cervical neurovascular structures are least vulnerable postero-superiorly and therefore extending the posterior aspect of a ballistic helmet inferiorly or adding a nape protector would appear to be less justified. Cervical vessels are most vulnerable in Zone 1 and a circumferential collar of ballistic material at least 75mm high would cover this area in 95% of this population.

P-053 **Branchial cleft anomalies: a complete guide**

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Aim/ Objectives: Branchial cleft anomalies comprise of a spectrum of congenital defects that occur in the head and neck. These can result in cyst, fistula or sinus formation. This presentation is a multi-modality demonstration of the four branchial cleft anomalies.

Content : Branchial cleft anomalies result from branchial apparatus, embryologic precursors which form arches that give rise to anomalous clefts. They typically appear as fluctuant neck masses that can become symptomatic.

Second branchial cleft anomalies are the most common by far. This presentation is a case based demonstration of the classical radiological appearances of all four branchial cleft anomalies on ultrasound, CT and MRI.

Discussion Major teaching points are;

- Branchial cleft anomalies are important entities to recognise, as surgical resection is curative.
- It is essential for radiologists to understand the embryological derivation of such anomalies and appreciate their appearances as imaging, be it ultrasound, CT or MRI, is key to diagnosis.

P-054 **An audit into the use of occipitomeatal radiographs in the diagnosis of zygomatic fractures**

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Introduction: A set of 2 occipitomeatal radiographs at 10 and 30 degrees are used to diagnose a clinically suspected fractured zygoma. The art of diagnosing a fractured zygomatic complex from radiographs is one which demands experience on behalf of the clinician. There are no current guidelines to standardise imaging requests in this field.

This audit aimed to examine requests for occipitomeatal radiographs from an Accident and Emergency department to elicit the findings upon examination which prompted imaging requests. It also measured the proportion of radiographs which proved diagnostic of a fracture.

Method: A sample of 200 notes of patients who were admitted to Dewsbury District Hospital A&E and had occipitomeatal views taken to aid diagnosis of a fractured zygoma were reviewed retrospectively.

Results: The most common mechanism of injury was alleged assault 47%. Fractures were detected in 4%. Less than 1% of patients undergoing X-ray underwent corrective surgery. A wide range of signs were recorded, however only three signs were found in fractured zygomatic complex cases: alteration in sensation in the trigeminal nerve infraorbital division, flattening to the mid face and a palpable step deformity.

Discussion: The West Yorkshire Comprehensive Local Research Network are taking the project further as a prospective study with HLA funding with the aim to elicit a link between signs significantly present in cases of fractured zygomas. If a link is found, guidelines could be devised to aid the clinician in requesting imaging in the case of a fractured zygoma.

P-055 MRI of parenchymal brain lesions in behcet's disease

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Aims/ Objectives: To present the MR imaging features of different patterns of brain tissue involvement in Behcet's disease and discuss the main differential diagnoses.

Content: We report three cases of the relatively rare Neuro-Behcet's disease affecting the brain parenchyma and discuss the temporal changes and the main differential diagnoses of MRI finding in such cases with review of related literature.

Relevance/Impact: Awareness of the key MR imaging features of such a disease will help radiologists avoid misinterpretations that alter patients' management.

Discussion: Parenchymal brain involvement in Behcet's disease is rare. Brain MRI, particularly DWI, shows the different patterns and temporal changes of brain lesions and help differentiating neuro-behcet's disease from other disease entities of similar predilection to the mesodiencephalic structures such as ischemia, carbon monoxide (CO) and methanol toxicity, infection and diabetic uraemia.

Clinical: general

P-056 Hip surveillance in cerebral palsy: what the general radiologist needs to know

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Objectives: To illustrate by way of pictorial review how to calculate hip migration percentage and acetabular index on a pelvic radiograph in patients with cerebral palsy. A knowledge of the relevant lines and angles is necessary and this poster will demonstrate these in the accompanying pelvic radiographs.

Content: As part of the hip surveillance pathway for children with cerebral palsy in our region, pelvic radiographs are performed to monitor hip deformity and subluxation, as it can have an impact on the long term management of patients.

We audited the reports of pelvic radiographs performed over a 12 month period in a multisite NHS Trust to determine whether adequate information was being provided.

Relevance: Patients with cerebral palsy are at risk of developing gradual hip deformity and subluxation as part of the natural course of their condition. Early detection can identify the need for appropriate orthopaedic intervention. The information provided in the radiology report is central to this.

Outcomes: In the cases included in our audit, we found that the majority of reports were generic. This highlights the need for further education about the adequate assessment of pelvic radiographs in children with cerebral palsy.

Discussion: Providing detailed information is relatively simple using a digital radiograph; we aim to demonstrate for the general radiologist the simplicity of measuring hip migration percentage and acetabular index. As a result, paediatricians and orthopaedic surgeons will be better equipped to manage these patients, who often have complex needs.