

SRT ANNUAL CONFERENCE 2012

APEX INTERNATIONAL HOTEL,
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ABSTRACT BOOKLET

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RESEARCH ABSTRACT – R1

An analysis into the referrals for joint injection in a district general hospital: A double-edged needle?

O. Hulson, N. Larkman, Leeds and Bradford Training Scheme

Aim

To retrospectively analyse referrals for joint injection to musculoskeletal radiology for a busy district general hospital, in an attempt to ascertain where these referrals were arriving from, and comparing directly with the same period one year previously.

Method

Referrals for steroid injection or dry needling/barbottage were retrieved for a 3 month period in 2011, and for the same period one year previously. This data was analysed for referring specialty, whether they had previous injections (and at what interval) and how this compared to one year previously. The data was further analysed to see whether previous imaging had been performed or whether referrals were received straight for ultrasound-guided injection based on clinical signs and symptoms.

Results

The data showed a significant increase in referrals for ultrasound-guided joint injection compared to one year previously, predominantly from primary care (from 58 patients to 96 patients). Referrals had also increased from other secondary care specialties including rheumatology and orthopaedics (from 75 to 99). A large proportion of patients were referred directly for joint injection with no previous radiographic or ultrasound proven joint disease.

Conclusion

Referrals for ultrasound-guided joint injection have increased significantly, this despite research showing that 'blind' injection is no worse in terms of patient outcomes compared to image-guided therapy. Learning and discussion points have been suggested in order to provide an evidence-based protocol for referral, in order to ease the burden on swamped ultrasound waiting lists.

RESEARCH ABSTRACT – R2

Service availability of out-of-hours interventional radiology in Scotland.

T. J. Gordon, University of Dundee

I. A. Zealley, Ninewells Hospital & Medical School, Dundee

I. Robertson, Glasgow University Hospitals, Glasgow

I. N. Gillespie, Edinburgh Royal Infirmary, Edinburgh

Background:

Interventional radiology (IR) is increasingly recognised as an important component of emergency medical care. In 2008 the Royal College of Radiologists published a standards document stating that Health Boards should develop robust arrangements to ensure round-the-clock emergency IR services are available.

Standard:

To evaluate the availability of out-of-hours (OOH) IR services in Scotland and discuss the implications for service redesign.

Results:

Three of the 14 geographical Health Boards provided a prospectively planned OOH IR service in at least one hospital. Nineteen of the 38 acute hospitals provided an in-hours IR service which includes endovascular haemorrhage-control. Eight of the 38 acute hospitals have prospectively planned on-call IR arrangements which include an endovascular haemorrhage-control service. Twelve of the 38 have an ad-hoc service, and 20 have a pre-planned transfer agreement with a designated facility. Thirty-eight of the 223 consultant radiologists in Scotland can perform endovascular haemorrhage-control procedures: 18 of which are included in prospectively planned rotas. A further 42 radiologists can insert a nephrostomy and a further 61 can insert an abscess drain. Eighty-two radiologists do not perform interventional procedures.

Action Plan:

These data will be used to inform the process of OOH IR service redesign in Scotland. Where feasible, accommodating financial and geographical constraints, this process aims to improve the operation, structuring and delivery of these services across Scotland in order to extend coverage to greatest number of patients.

RESEARCH ABSTRACT – R3*

Accuracy of Carotid Intima Media Thickness as a surrogate marker for whole body atherosclerosis

J. Weir-McCall, P. Guntur, NHS Tayside
C. Adamson, G. Houston, University of Dundee

Purpose:

Carotid intima media thickness (cIMT) has been suggested as a surrogate marker for atheroma burden within the body, and as a technique for assessing response to treatments. Our study compared cIMT with total atheroma burden as measured by whole body magnetic resonance angiography (WB-MRA). As atherosclerosis is a bodywide disease analysis of a multiple arterial segments by WB-MRA was used to calculate a score reflecting atheroma burden.

Method:

50 patients with symptomatic peripheral arterial disease were enrolled for the study over a 6 month period. All participants underwent both carotid ultrasound and WB-MRA on 2 occasions at 6 month intervals. Calculating the total body atheroma score involved contrast enhanced MRI of the arterial tree and standardised analysis of multiple segments for extent of stenosis. The total score calculated by summing scores of all segments. The normalised value was calculated by dividing this by the number of assessable segments. Results were analysed with Stata statistical analysis software.

Results:

The atherosclerotic burden in the assessed population was high with a mean TBA score of 34.6 s.d 13.7 (minimum possible score 0, maximum possible score 155). In the studied population the mean cIMT was 0.13 (right) and 0.13 (left). Right and left cIMT correlated highly with one another (correlation coefficient 0.78; $p < 0.001$) however cIMT thickness was not found to correlate with WB-MRA total body atheroma score (correlation coefficient 0.14; $p = 0.247$ right and 0.155; $p = 0.187$ left).

Conclusion:

cIMT was not found to accurately predict total atheroma burden as measured by WB-MRA.

RESEARCH ABSTRACT –R4*

Predictive value of serum biomarkers in assessing systemic atherosclerotic burden

J. Weir-McCall, P. Guntur, NHS Tayside
C. Adamson, G. Houston, University of Dundee

Purpose:

Serum levels of brain natriuretic peptide (BNP), C-reactive protein (CRP), Endothelin-1, Thrombomodulin and e-Selectin are all biomarkers which would be expected to be raised in patients with atherosclerotic disease. Our study compared levels of each of these biomarkers with atherosclerotic burden score determined by whole body magnetic resonance angiography (WB-MRA) to determine whether there is a link between levels of biomarkers and extent of bodywide atherosclerotic disease. As atherosclerosis is a systemic disease, analysis of multiple arterial segments by WB-MRA was used to calculate a score reflecting total atherosclerotic burden.

Method:

50 patients with symptomatic peripheral arterial disease were enrolled for the study over a 6 month period. All participants underwent WB-MRA and had blood samples taken for analysis of biomarker levels on 2 occasions at 6 month intervals. Calculating the total body atherosclerotic score involves contrast enhanced MRI of the arterial tree and standardised scoring of multiple segments for extent of stenosis. The total score calculated by summing scores of all segments. Results were analysed with Stata statistical analysis software.

Results:

The atherosclerotic burden in the assessed population was high with a mean TBA score of 34.6 s.d 13.7 (minimum possible score 0, maximum possible score 155). Levels of all biomarkers were also raised in this population. Serum BNP was the only marker found to correlate with the TBA score (correlation coefficient for proBNP at visit 2: 0.40 $p=0.028$).

Conclusion:

BNP, already used to aid the diagnosis of left ventricular dysfunction, may be useful to determine extent of atherosclerosis in the absence of heart failure.

RESEARCH ABSTRACT –R5*

Introducing MR proctography-managing the change from fluoroscopy

S. Chawla, University Hospital Aintree

J. Hannah, G. Fitzgerald, C.J. Garvey, Royal Liverpool University Hospital

Purpose:

In 2011, in our institution we introduced MR proctography alongside fluoroscopic proctography. MR proctography increases pressure on MR and is more expensive than fluoroscopy. The advantages of each technique will be emphasized, some relating to patient acceptance.

Methods:

Patients attend with an empty bladder without bowel preparation. A detailed explanation is given. 120mls of ultrasound gel is introduced into the rectum and the patient turns supine remaining in this position throughout the test. The patient is sequentially asked to tighten the pelvic floor, bear down and evacuate. The 20 minute protocol includes axial and coronal T2 followed by sagittal dynamic gradient echo scans while the patient contracts the pelvic floor, bears down and evacuates.

Results:

MR proctography provides a safe non-invasive evaluation of rectal defecatory problems. An advantage includes showing associated problems in the anterior and middle pelvic compartments. It has been well received by staff, patients and referrers. A skilled and sympathetic technician is essential for a good quality examination. Fluoroscopic and MR proctography showing normal anatomy and pathology will be illustrated.

Conclusions:

MR proctography works well in most patients but some patients continue to require fluoroscopic proctography. These include patients unsuitable for MR and some patients with suspected intussusception where MR proves insufficient to confidently exclude this possibility.

RESEARCH ABSTRACT –R6

Workstation assessment of digital images among junior doctors.

A. Sinha, F. Perks, Royal infirmary Edinburgh

Background:

Accurate image interpretation with the dedicated PACS viewing stations and use of ambient light are important requirements for implementing a PACS. It is not only important for a radiologist but also for other PACS users.

Aim

To understand the general awareness of importance of ambient light and use of dedicated PACS station amongst the junior doctors.

Method

Cross sectional study of 25 junior doctors across different specialities in form of five questionnaires about use of dedicated PACS workstation and importance of ambient light during their clinical work.

Results

The response for the use of dedicated workstation for their clinical work was only 4% as most of them used the standard computer screen. The light was variable in 44% (11/25) and bright in 56 % (11/25)

The response about importance of minimising the ambient light level when reading the images was only 28% (7/25). However 64% (16/25) were aware of importance of ambient (surrounding) lighting level while reading images on PACS.

Conclusion:

There is still lack of awareness among junior doctors about the use of dedicated workstation and use of ambient light while provisionally reporting or reviewing the images. This can be improved by highlighting the importance during their teaching or during their induction. It can be reinforced by inclusion in the junior doctor's handbook and hospital intranet.

More PACS workstations need to be available in the ward specific for this purpose.

RESEARCH ABSTRACT –R7

Indications and outcomes for a biodegradable oesophageal stent (BDOS).

R. Dhandapani, G. Abbott, Countess of Chester Hospital, Chester

Purpose:

Biodegradable oesophageal stents made of Polydioxanone (PDS) have significant advantages in comparison with multiple oesophageal dilatations particularly in the treatment of benign oesophageal conditions. Guidelines are still developing regarding their role in an IR setting. The aim of this study was to assess the placement of a BDOS in a DGH in IR.

Methods:

Patients who had a BDOS inserted over the past three years (2009-2011) were identified on PACS. Indications and outcomes for stent insertion were studied using the Hospital Information System.

Results:

10 (71%) of the 14 total patients had BDOS inserted for a benign oesophageal stricture. 90% of them had improvement of symptoms. Two patients with benign strictures had previous failed balloon dilatations leading to BDOS insertion with good symptom relief. Other indications were a Crohn's stricture of the proximal oesophagus which resulted in pain and odynophagia and a failed attempt at removal but subsequent symptom relief. Another stent was placed at a previous gastro jejunostomy anastomotic stricture but the stent migrated. 1/14 patients with paraspinal lymphoma causing oesophageal stricture had improvement of symptoms but had persistent chest pain. A patient with upper mediastinal lung cancer treated with previous balloon dilatations had a BDOS inserted three months later due to tumour regrowth with good symptom relief.

Conclusion:

BDOS are useful in patients with benign strictures to prevent the need for recurrent balloon dilatation. The complication rate is low and they provide effective symptom relief.

AUDIT ABSTRACT –A1

An Audit of MRCP Practice in Our Hospital

D. Weller, Mersey Deanery Radiology
S. Connolly, K. Slaven, Whiston Hospital, Liverpool

Background:

Following the purchase of a new MRI scanner, it was decided to introduce a number of extra sequences to the MRCP protocol, with the aim of increasing the sensitivity of the investigation and the likelihood of detecting extra-biliary pathology. However, whereas the previous sequences took 15-20 minutes, the new sequences took 25-30 minutes, meaning that fewer scans could be performed in a session.

Standard:

The findings of the MRCPs performed using the old sequences were compared with those using the new sequences. Have the new sequences lead to increased detection rate of biliary ductal stones or extra-biliary pathology?

Results:

50 patients scanned using the old sequences were compared with 50 patients scanned using the new sequences. Under the old sequences, 9 patients were found to have stones, compared with 17 patients under the new sequences. Of these, 13 were confirmed to have ductal stones on ERCP. It was found that in every one of these 13 cases, the stones were visible on all of the sequences performed. i.e. the new extra sequences had not lead to an increased ability to detect biliary ductal stones.

The new sequences also did not lead to an increase in the amount of extra-biliary pathology detected. Under the old sequences, 14 patients had positive findings, compared with 12 patients under the new sequences.

Changes Implemented:

The number of sequences used for MRCP has been reduced, enabling faster scans and increased patient throughput.

AUDIT ABSTRACT –A2

The effectiveness of consultant led Radiology ward rounds in ICU

H. Al-Hasani, T. Ninan, P. Suresh, Derriford Hospital

Background:

Portable chest radiographs are used in the intensive care unit (ICU) to aid patient management in a variety of scenarios. They are used for confirmation of lines and tubes and to diagnose causes of respiratory and cardiac instability. In our trust regular ICU radiology ward rounds are conducted by consultants. We aim to assess the punctuality and experience, determined by radiologist grade, of formal reporting by radiologists and to compare these reports with interpretations by ICU staff.

Standard:

No similar audit in literature. We set a target that 80% of radiographs should be formally reported by radiology consultant ward rounds within 5 days and that at least 80% of radiographs should have ICU staff documentation.

Results:

Analysis of ICU chest radiograph requests over a 4 week period in summer 2011 showed 108 x-rays were performed, 106 were reported by radiologists, of these 61% were reported before 5 days with almost all the remaining following 20 days mostly by registrars. Only 68 (64%) of radiographs had ICU documentation which were more punctual in comparison to the bimodal distribution in seen with radiology reports. ICU radiology ward rounds were found to be useful in flagging up important findings. A handful of discrepancies were found between reports from radiologists and ICU staff, in a couple of scenarios this had the potential to cause adverse effects although no actual harm was caused to the patient. We conclude that a systematic approach which includes more regular radiology ward rounds and accurate documentation will go a long way to improve the value of this investigation.

Changes Implemented:

More frequent and regular radiology consultant led ICU ward rounds suggested.

Re-Audit:

Plan to re-audit in 1 year.

EDUCATIONAL ABSTRACT –E1

Intravenous Contrast - What you need to know (and the questions you were too embarrassed to ask...)

J. Barber, L. Ramsay, St. George's Hospital, London

Learning Objectives:

By the end of this poster, the reader should:

Be able to assess a patient's risk of anaphylactoid intravenous contrast reaction, and know how to avoid and manage reactions.

Know when a patient with renal impairment is most at risk of an adverse outcome due to contrast, and how to minimise this.

Be able to assess and manage contrast extravasation.

Description:

From the first day junior radiologists are expected to be able to answer queries on the use of intravenous contrast, and manage adverse reactions to it. In our experience the practical aspects of contrast safety are often poorly taught and understood - with potentially serious implications for patient safety.

In this poster, we will cover the most common and important topics in contrast safety, with an emphasis on very practical day-to-day questions and occurrences including intravenous contrast use in both CT and MRI.

We will discuss:

- the nature of contrast reactions;
- how to risk stratify patients - and what to do with this information;
- evidence-based recommendations for responding to contrast reactions;
- renal impairment scenarios with iodinated CT contrast and Gadolinium;
- contrast extravasation.

Conclusion:

The administration of intravenous contrast is a daily occurrence in Radiology departments and one which junior radiologists often take responsibility for.

We have covered the practicalities of managing contrast reactions, including those associated with renal impairment and contrast extravasation in the setting of CT and MRI.

EDUCATIONAL ABSTRACT –E2*

Emergency imaging in craniofacial trauma: what every radiology trainee should know

M. J. Szewczyk-Bieda, M. J. Budak, R. D. White
Ninewells Hospital and Medical School, Dundee , UK

Learning Objectives:

- Highlight important review areas for craniofacial trauma on plain film (facial views, skull radiographs and orthopantomograms)
- Demonstrate important (and often subtle) findings in craniofacial trauma on plain radiographs and computed tomography (CT)

Description:

Using cases from our centre, we depict review areas on plain film for craniofacial trauma. We present a pictorial synopsis highlighting a spectrum of radiographic appearances, subtle and otherwise, of significant craniofacial trauma including blunt (e.g. blow-out orbital fractures, Le Fort fractures) and penetrating injuries. We provide an overview of CT appearances of craniofacial trauma (including base of skull and calvarial fractures and intra- and extra-axial haemorrhage) and highlight important review areas

Conclusion:

Craniofacial trauma is frequently encountered by radiology trainees, especially in out-of-hours provision. The ability to recognise various manifestations of craniofacial trauma - often subtle, yet with significant associated morbidity and mortality and sometimes requiring urgent surgical intervention - is vital to ensure safe radiological practice. Review of this exhibit would serve to raise awareness of key review areas along with subtle findings in acute craniofacial trauma, which can easily be overlooked unless specifically sought out

EDUCATIONAL ABSTRACT –E3

Radiation Protection in Paediatrics

O. Shaw, D. Unnithan, S. Pennington
North Cumbria University Hospitals NHS Trust

Learning Objectives:

Increase awareness among referring clinicians regarding

1. the importance to minimise radiation dose to children,
2. the opportunities to minimise the radiation dose in diagnostic imaging of children.

Description:

This is an educational poster, aimed at the referring clinicians. The poster is intended for display and use on Paediatric wards and clinics, and at GP practices. This project has developed out of a well-received Paediatric departmental teaching presentation.

The poster provides explanations of what ionising radiation is, biological effects of ionising radiation and how they are affected by various factors with relevance to children. The poster displays a guide to the effective doses of most common modern radiological examinations. The poster focuses on the recommendations on how to reduce the radiation dose to children, based on the current Radiation Protection legislation in the UK and new referral guidelines iRefer from the Royal College of Radiologists.

Conclusion:

Demand for diagnostic imaging with use of ionising radiation is growing. This may have a negative impact on children's health. This poster helps raise awareness among the referring clinicians of the importance of Radiation Protection in Paediatrics. Also, the poster gives recommendations on how to reduce radiation risks and dose in practice.

EDUCATIONAL ABSTRACT –E4

"Mediastinal Lines and Stripes" - are they a concept of the past?

N. Schembri, R. Cameron, T. Taylor
Ninewells Hospital & Medical School, Dundee

Learning Objectives:

The aims of this educational poster are:

1. To enhance awareness of the invaluable role that the "lines and stripes" concept plays in establishing a diagnosis and that failing to recognise this potential may lead to failure in requesting valuable further evaluation with CT examination.
2. To act as a refresher to radiology trainees and consultants alike by reinforcing their anatomical knowledge on mediastinal lines and stripes, in being able to recognize their normal and abnormal appearances.
3. To understand this concept in the setting of chest radiography as transposed to chest CT now that this is being utilised more frequently as an adjunct to chest radiography in the evaluation of lung parenchymal and mediastinal disease.

Description:

The chest radiograph is a rich two-dimensional depiction of contrasting interfaces seen that are important in the evaluation of mediastinal disease. This educational poster will outline the junctional lines most relevant to clinical practice, emphasising their impact on clinical management planning. This will be illustrated by various examples encountered in a busy clinical radiology department as depicted on chest radiograph correlated to subsequent CT imaging.

Conclusion:

Although CT has revolutionised clinical radiology practice and plain radiography seems to be fading in the background, the chest radiograph still remains an invaluable tool and radiologists must be confident in the appearances of the interfaces made between mediastinal, pleural and lung parenchymal structures in order to formulate a suitable differential diagnosis prior to embarking on more elaborate evaluation with CT of the chest.

EDUCATIONAL ABSTRACT –E5

A Pain in the neck: an audit of C-spine imaging in trauma

M. Rodrigues, Western General Hospital, Edinburgh
F. Perks, Royal Infirmary of Edinburgh

Background:

Cervical spine (c-spine) trauma requires accurate assessment. The RCR and NICE advocate clinical assessment plus imaging only when indicated.

Standard:

Standard: An adequate c-spine 3-view series must include 1. Lateral view showing C1/C2 and C7/T1 clearly. 2. Open mouth AP view showing C1/C2. 3. AP view showing C1-C7.

If the 3-view series is inadequate, additional views +/- CT imaging should be performed

Indicator: Retrospective review of notes from patients who had c-spine x-rays performed for trauma in the Royal Infirmary of Edinburgh's A&E department between 01/05/11-31/07/11 was conducted, assessing adequacy of radiographs, further imaging performed, plus A&E and radiology interpretations.

Target: 1. All patients with c-spine trauma who require imaging should have adequate imaging.
2. The radiology report should highlight inadequate imaging and recommend additional imaging if necessary.

Results:

99 patients assessed. 52 had adequate radiographs (mean 3.36 films/patient).

25/47 with inadequate radiographs were recognised by A&E, compared with 35/47 by radiology. Further imaging was suggested in only 17 radiology reports.

27/47 with inadequate radiographs proceeded to CT, 10/47 were "cleared clinically" and 3/47 self-discharged. 7/47 had neither CT performed nor advised.

Overall 80% of patients had adequate c-spine imaging (radiographs+/-CT).

Interestingly 21% of patients with inadequate radiographs were "cleared clinically" and therefore potentially undergoing unnecessary x-ray exposure.

Changes Implemented:

1. Importance of adequate radiographs emphasised to A&E staff.
2. A&E staff will document assessment of radiograph adequacy and reasons for not requesting further imaging if radiographs are inadequate.
3. Radiologists reminded to document adequacy in reports and advise further imaging if required.

EDUCATIONAL ABSTRACT –E6*

Demystifying Adrenal Masses: What every Radiology trainee should know about lesion characterisation and differentiation.

S. Eljamel, M. Budak, M. J. Szewczyk-Bieda, R. D. White
University of Dundee

Learning Objectives:

To illustrate the anatomy of the adrenal glands on cross-sectional imaging.

To demonstrate the imaging appearances and differential diagnoses of a range of common and rare processes involving the adrenal glands.

To highlight cross-sectional imaging techniques used to characterise various adrenal lesions and provide systematic ways of differentiating between benign and malignant adrenal masses on MR and CT imaging that should prove useful in clinical practice.

Description:

We present a pictorial synopsis of both normal anatomy and a spectrum of pathologies affecting the adrenal gland. These range from benign lesions (e.g. phaeochromocytoma, myelolipoma) to malignant (e.g. metastases, neuroblastoma) and miscellaneous pathologies (e.g. haematoma, Waterhouse-Friderichson syndrome). We describe, with examples, means of differentiating between benign and malignant adrenal masses on cross-sectional imaging.

Conclusion:

Adrenal masses are common in everyday practice with 9% of the population having adrenal adenomas. Despite the adrenal glands being a frequent site of metastasis, even in primary lung cancer a significant proportion of adrenal masses are actually adenomas rather than metastases. Consequently it is critical that Radiology trainees can adequately characterise adrenal masses due to the significant implications for management.

This educational exhibit aims to demystify adrenal masses by exemplification and characterisation, allowing the Radiology trainee to approach these lesions with confidence and reach a diagnosis to more accurately guide management, potentially avoiding unnecessary invasive procedures.

EDUCATIONAL ABSTRACT –E7

Peri-orbital cellulitis in Children: Radiological features and protocol for appropriate imaging

C. Mortensen, K. Klimczak, J. Rowlands, M. Thyagarajan, Bristol Royal Hospital for Children

Learning Objectives:

To understand indications for imaging, and radiological features of peri-orbital cellulitis on CT and MRI, using a variety of clinical cases encountered at our institution.

Description:

Peri-orbital cellulitis or abscess can occur as a complication of acute sinusitis and upper respiratory tract infection in children. When it is post-septal, patients are at risk of developing blindness, intracranial infection, or death. Traditionally, emergency evaluation has been performed using CT due to the ability to assess both collection size and bone involvement pre-operatively. However, this is not without a significant dose (typically effective dose 1.5-2.5mSv) and potential risk of cataract formation and thyroid malignancy. Our experience has shown that MRI can be used as the first line investigation instead of CT as it can accurately diagnose peri-orbital cellulitis and identify all surgical candidates without exposure to ionizing radiation. Only those children with MRI features of a drainable collection will then proceed to CT for surgical planning. We have since changed our imaging protocol in children with clinically suspected peri-orbital cellulitis as will be described in the poster.

Conclusion:

Using case examples, the radiological features of peri-orbital cellulitis on CT and MRI will be reviewed, as well as complications such as subdural and peri-orbital collections. We will include indications for imaging, and describe a new protocol recently adopted in our institution. This recommends the use of MRI as a first line investigation where possible, thereby reducing significant radiation dose to the paediatric population.

EDUCATIONAL ABSTRACT –E8

Spectrum of Abdominal Gas Patterns: A Pictorial Review and Clinical Implications

K Ojha, S Siddhi, A Gatt, R D White,
East of Scotland Radiology Training Scheme (NHS Tayside)

Learning Objectives:

Demonstrate radiological appearances of abdominal gas patterns across different imaging modalities, with reference to clinical presentation and management.

Description:

We present a range of both common and esoteric abdominal gas patterns encountered in our centre, including pneumoperitoneum, retroperitoneum, biliary and portal venous gas, necrotising fasciitis, renal tract gas and pneumatosis intestinalis. We highlight useful means of differentiating between these patterns.

Conclusion:

A range of abdominal gas patterns are encountered by the radiologist as part of day-to-day practice. However, the knowledge of imaging appearances of different pathologies can delineate and determine optimal clinical management.

The spectrum of presentations can vary enormously. Review of this pictorial synopsis should stimulate the practising radiologist to combine the clinical history, associated pathology, current clinical state and the magnitude of findings on imaging to aid decisions such as if urgent surgical exploration is required.

EDUCATIONAL ABSTRACT –E9*

A spectrum of non-Crohn's disease findings at small bowel magnetic resonance imaging (MRI): a pictorial review

P. M. Yeap, M. J. Szewczyk-Bieda, I. Zeally
Ninewells Hospital, Dundee

Learning Objectives:

To describe the diagnostic features in non-Crohn's diseases, and to highlight the MRI features on representative images.

Description:

Over recent years small bowel imaging has evolved dramatically. Cross-sectional imaging techniques, particularly ultrasound and MRI, have largely replaced conventional barium studies in many centres.

The commonest indications for small bowel imaging in the United Kingdom are for the diagnosis of suspected Crohn's disease, and for the determining the extent of small bowel involvement in patients with an established diagnosis of Crohn's disease. However other more esoteric diagnoses may be sought, and occasionally non-Crohn's pathologies are identified when Crohn's disease has been suspected.

Over the past nine years we have performed over 500 MRI small bowel examinations, including numerous non-Crohn's pathologies. We will present a range of cases of non-Crohn's pathologies identified on MR small bowel imaging examinations including active Coeliac disease, herniation of small bowels, adhesion, small bowels obstruction, intussusceptions, infection, radiation enteritis, and a few other interesting cases.

Conclusion:

MRI can provide exquisite anatomic, functional, and real-time information without the need for ionising radiation, making it well suited for the evaluation of small bowel disorders. It is increasing use in the assessment of small bowel pathologies. This pictorial review will serve to raise the awareness of MRI features in non-Crohn's diseases which are important in making an accurate diagnosis.

EDUCATIONAL ABSTRACT –E10

Intussusception; radiological diagnosis and management

R. Williams, St. George's Hospital, London

Learning Objectives:

- * Outline and demonstrate image-guided diagnosis
- * Explain the process, apparatus and method for radiologically guided reduction of intussusception
- * Aid discussion to compare practice between centres

Description:

Intussusception is a paediatric surgical emergency. Successful image guided reduction will stop the need for emergency abdominal surgery. Radiological diagnosis and management is carried out in many centres however methods and apparatus differ greatly. Ultrasound is the modality of choice in diagnosis. Our centre operates a 24 hour, senior radiology registrar led service alongside a paediatric surgical registrar. Apparatus used have been developed by in-house medical physics and use the method of air enema. Local guidelines have been developed including parameters of number of attempts and air pressures. Only recently, in 2011, have the British Society of Paediatric Radiology (BSPR) agreed guidelines to standardise radiological management of intussusception.

Conclusion:

Radiology registrars need to be aware of the appearances of intussusception on ultrasound and the approach using air enema method of reduction. Trainees should be responsible to audit their own practice with regards to management of a paediatric surgical emergency. National retrospective audit will formally evaluate differing practice between centres. Prospective audit, due to launch in November 2012 will help with standardising and improving practice.

EDUCATIONAL ABSTRACT –E11

A rare case of two distinct adrenal adenomas in the same adrenal gland

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Learning Objectives:

- To highlight the characteristic features of adrenal adenomas on CT and MRI
- To illustrate a rare form of dual unilateral adrenal adenomas exhibiting atypical radiological and pathological features.

Description:

Characterization of adrenal masses continues to be an important clinical problem as they are relatively frequent incidental finding on abdominal CT scans. We present a case of a 59 year old lady who presented with subclinical Cushing's syndrome and subsequently underwent a right laparoscopic adrenalectomy for two right sided adrenal cortical adenomas.

An initial unenhanced CT scan showed two indeterminate oval lesions arising from the right adrenal gland with atypical CT features. In and out-of phase MRI adrenal scans were also performed but unable to further characterise the mass. Subsequent CT adrenal washout studies identified both the smaller and larger nodules as having a percentage washout typical of adrenal adenomas.

Following the operation, histology revealed the rare pathology of two distinct benign cortical adenomas in the right adrenal gland.

Conclusion:

This case highlights the atypical nature of adrenal adenomas and that multiple features on CT or MRI imaging modalities are needed to confirm diagnosis.

Classifying adrenal masses in primary Cushing's syndrome can be difficult but there are several CT and MRI findings that contribute to the diagnosis. By utilising these modalities appropriately, nearly all adrenal masses can be diagnosed with a high sensitivity and specificity.

EDUCATIONAL ABSTRACT –E12*

Musculoskeletal Manifestations in HIV: An Imaging Review

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Learning Objectives:

Review the imaging findings encountered in musculoskeletal pathologies in HIV infection. These can be divided into four broad categories:

- 1) Myopathies
- 2) Arthropathies
- 3) Infectious Aetiologies
- 4) Neoplastic

Description:

Brighton has one of the largest populations of HIV positive individuals in the country and the HIV department based within Brighton and Sussex Universities hospital trust is one of the largest in the UK.

349 HIV positive patients seen in the rheumatology clinic between 4/2/2004 to 21/12/2011 with various diagnoses including avascular necrosis, osteomyelitis, septic arthritis, adult onset Still's disease, psoriatic arthritis, symmetric polyarthritis, Reiter Syndrome, HIV associated arthritis. We present imaging findings from these cases and other musculoskeletal manifestations of HIV, for example, pyomyositis, lymphoma, Kaposi's sarcoma and bacillary angiomatosis.

Conclusion:

HIV positive patients often present with musculoskeletal complaints and these can produce diagnostic challenges given the range of different possible diagnoses and considerable overlap between them. Knowledge of the imaging findings associated with these conditions can provide a useful tool in guiding diagnosis and management in this patient group.