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SIEMENS Healthineers
Dear Friends,

The very warmest of welcomes to the BSPR annual scientific meeting in Glasgow. Dr Ruth Allen has organised an excellent program for us in an amazing venue. I should mention that Ruth has managed all this in a much-reduced timescale, and on behalf of the BSPR I thank her for all her hard work.

Glasgow has its own place in the history of Radiology. Following Röntgen’s discovery of X Rays on 8th November 1895, Dr John MacIntyre set up the world’s first clinical X Ray department at Glasgow Royal Infirmary in 1896. Predictably, one of the first X Rays was of a boy who had swallowed a coin. No change there then. 60 years later, a landmark paper ‘Investigation of Abdominal Masses by Pulsed Ultrasound’ was published in the Lancet by a Glaswegian team using a modified shipyard industrial scanner. Original equipment from each of these teams is on display in the Hunterian Museum in Glasgow University, along with Lister’s original carbolic spray.

The Hunterian is Scotland’s oldest public museum, and only a third of a mile from the venue for our conference dinner at The Ubiquitous Chip, another Glasgow institution. The ‘Chip’ comprises the courtyard and stable buildings of a former funeral parlour on Ashton Lane, ironically now repurposed as the liveliest part of town. Even if not attending the dinner, Ashton Lane is recommended for a guaranteed good night, housing a great range of bars, restaurants and a fully licensed cinema.

The BSPR is surely the friendliest of societies, and I hope that over the next two days everyone will enjoy socialising, networking and a perhaps even a smidge of education.

Greg Irwin, Chair BSPR

This Conference provides 11 CPD points in accordance with the CPD scheme of the Royal College of Radiologists.
Thursday 8th and Friday 9th of November

Thursday 8th November  Parallel sessions in red are in the Boardroom
08:30  Registration and coffee

09:00  Session 1

10:30  Coffee, posters and exhibition

11:00  Session 2: Outreach Radiology / MRI Group

12:30  Lunch / Outreach group meeting (12:45 – 13:30)

13:30  Session 3: Oncology Update
14:00  Trainee Group: Preparing for the consultant Interview

15:00  Coffee, posters and exhibition / Scottish Paediatric Radiology Group

15:30  Session 4: Child Protection and Trainee Forum

17:00  Meeting closes

Conference Dinner (7:30 pm, Ubiquitous Chip, Ashton Lane Glasgow)

Friday 9th November
08:30  Registration and coffee

09:00  Session 1

10:30  Coffee, posters and exhibition

11:00  Session 2 and Helen Carty lecture / Intussusception working group

12:30  Lunch

13:30  BSPR AGM/Approaches to the child and young person in the radiology department

14:45  Coffee, posters and exhibition

15:15  Session 4

16:15  Meeting closes
Scientific Programme

Thursday 8th November

08:30  Registration and coffee

09:00  Welcome and Introduction
       Dr Ruth Allen and Dr Greg Irwin

09:10  Session 1: - Chair: Dr Ruth Allen
       • 09:10  Update on MRI contrast agents – what does the paediatric radiologist need to know? Dr Giles Roditi
       • 09:40  Advanced MRI imaging and the neurosurgeon – do all these extra sequences and scans really make a difference? Mr Roddy O’Kane
       • 10:10  Imaging in ventricular shunt dysfunction: room for improvement? Mr Niall Burke
       • 10:20  Impact of cardiac CT scans on use of invasive cardiac catheterisation. Mrs Claire Griffiths

10:30  Coffee, posters and exhibition in atrium

11:00  Outreach Radiology: - Chair: Dr Susan Shelmerdine
       • 11:00  Kubwerera kuzikolo Outreach experience in Malawi – Trainee perspective Dr John Adu
       • 11:30  Outreach Experience in Laos and the Global effort – Consultant perspective Dr Ramdas Senasi
       • 12:00  Managing volunteers and personal perspectives Ms Tiffani Walker

11:00  Parallel Session: MRI Group; Dr Jo Kasznia Brown
       Neonatal brain MRI - when to image and which sequences to choose - Neil Stoodley
       Hepatobiliary and liver MRI - update on new protocols - Helen Woodley
       Whole body MRI - do we finally have a consensus? - Joanna Kasznia-Brown

12:30  Lunch, posters and exhibition in atrium

13:30  Oncology Update:
       • 13:30  The value of the radiologist in paediatric oncology advances Dr Dermot Murphy
       • 14:00  Neuroblastoma – a heterogeneous approach to imaging Mr Hugh Wallace
Scientific Programme

Thursday 8\textsuperscript{th} November

- 14:30 Abdominal wall injuries with intact skin \textit{Mr Hetal Patel}
- 14:40 Chest radiographs versus computed tomography for the Detection of Rib Fractures in children (DRIFT Study) \textit{Dr Susan Shelmerdine}
- 14:50 Spontaneous humeral fractures in infant while rolling, a CT based finite element study \textit{Dr Zainab Altai}

14:00 \textbf{Parallel Session: Trainees session; Preparing for the consultant interview: Organiser Dr S Brown}

15:00 \textbf{Coffee, posters and exhibition in atrium}

15:30 Child protection from the perspective of a Scottish Lead Paediatrician \textit{Dr Kate McKay}

16:00 \textbf{Trainee update: Chair Dr Sharon Brown}

- 16:00 Introduction and welcome \textit{Dr Sharon Brown}
- 16:10 Trainee survey 2018 \textit{Dr Kirsten Kind}
- 16:30 \textbf{Guest lecture: - Expert witness survival guide} \textit{Dr Neil Stoodley}

15:30 \textbf{Parallel Session: Scottish Imaging Group}

17:00 \textbf{Meeting Closes}

\textbf{Conference Dinner: 7:30 pm}

\textbf{The Ubiquitous Chip, 12 Ashton Lane, Glasgow G12 8SJ}
Scientific Programme

Friday 9th November

08:30 Registration and coffee

09:00 Session 1:
  • 09:00 Magnetic resonance imaging – new frontiers in speed and precision
    Professor David Porter
  • 09:30 Wean’s world
    Mr Norry Wilson
  • 10:00 Review of single vs. multi-voxel spectroscopy in the paediatric MRI clinical service Dr Pauline Hall-Barrientos
  • 10:10 Expanding and improving Core and specialty paediatric Radiology training with a novel online system linked to National PACS Dr Jeremy Jones
  • 10:20 Intussusception: a 14 year single centre experience defining clinical outcomes versus national metrics Dr Meraj Ondhia

10:30 Coffee, posters and exhibition in atrium

11:00 Session 2:
  • 11:00 Bone age assessments: a comparison of two standards at a District General Hospital Dr Nicholas Chua
  • 11:10 The role of ultrasound in diagnosing acute appendicitis: a review of local practice Dr Jie-Ying Kowa
  • 11:20 US & MRI concordance renal transplant workup Dr Noor Jawad
  • 11:30 Impact of a high profile medical misconduct case on orbital imaging requests Dr Chris Cadman
  • 11:40 NF1 phenotypes and genotypes Dr Linda Stephens

11:50 The Helen Carty Lecture
Dr Laurence Abernethy
Paediatric Radiology; past, present and future

11:00 Parallel session: Intussusception workshop Chair: Mr Basil Bekdash

12:30 Lunch, posters and exhibition in atrium
Scientific Programme

Friday 9th November

13:30  ANNUAL GENERAL MEETING OF THE BSPR

14:40  Invitation to the BSPR 2019 in Leeds

13:30  Parallel Session: Approaches to the child and young person in the radiology department: - Chairs: Mrs Mary Pirie and Dr Andrew McLaughlin

• 13:30  Bedtime scans: achieving imaging during natural sleep
          Mrs Mary Pirie

• 14:00  Virtual Reality in the MRI suite
          Dr Andrew McLaughlin

• 14:30  Video resources – What?Why?ChildreninHospital
          Dr Marit Boot

14:45  Coffee, posters and exhibition in atrium

15:15  Session 4

• 15:15  Learning from excellence; the other side of the coin
          Dr Aly Walker

• 15:45  Success rate of paediatric MR examinations following the introduction of play club
          Dr Rachael Gelder

• 15:55  Shall I Start Signing These Off Myself? Dr Andrew Kirby

16:15  Meeting closes
Dr Giles Roditi  
Consultant Radiologist Glasgow Royal Infirmary, Honorary Associate Professor, University of Glasgow, President BSCI/BSCCT

Mr Roddy O’Kane  
Consultant Paediatric Neurosurgeon, Royal Hospital for Children Glasgow

Dr Ramdas Senasi  
Consultant Paediatric Radiologist for Sunderland City Hospital and the Training Lead for Paediatric Radiology for the Northern Deanery School of Radiology. An active member of the World Federation of Paediatric Radiology and the incoming Co-Chair for the WFPI Outreach Committee. Today he will be sharing with us some of his recent experiences with outreach work in Laos and the WFPI effort in Paediatric Radiology globally.”

Dr John Adu  
Post-CCT paediatric interventional radiology fellow GOSH. Consultant at King’s College Hospital from October 2019. A handful of radiologists to cover the largest hospital in Malawi (>1000 beds). No fluoroscopy. No CT. No MRI. Limited x-ray availability. Nuclear medicine? No. Right then, ultrasound it is. My two week outreach trip in Queen Elizabeth Central Hospital (Blantyre, Malawi), gave a me brief insight into how challenging it is to provide high quality healthcare in a resource-poor setting. You have to think on your think feet and learn how to improvise. Challenge accepted!

Ms Tiffani Walker  
Director for Imaging Volunteers - RAD-AID International Charity

Dr Dermot Murphy  
Consultant Paediatric Oncologist, Royal Hospital for Children, Glasgow

Mr Hugh Wallace  
Clinical Scientist, Clinical Physics, Greater Glasgow and Clyde

Dr Kate McKay  
Consultant Paediatrician and Lead Paediatrician for Child protection NHS Greater Glasgow and Clyde

Dr Neil Stoodley  
Consultant Paediatric Neuroradiologist, Bristol

Professor David Porter  
David Porter is a physicist, originally from London, specialising in magnetic resonance imaging (MRI). He holds a B.Sc. degree in physics from Sheffield University and a Ph.D. from King’s College London for work on magnetic resonance spectroscopy of human tumours in vivo. He worked as a post-doctoral scientist at Great Ormond Street Hospital in London, developing MRI methods for the study of epilepsy and acute stroke in children. He had a long career in industry working for Siemens Healthcare in the UK and Germany, where he supported research collaborations with universities around the world and developed novel techniques for Siemens MRI scanners. During his time at Siemens, he focused on neurology topics and, in particular on diffusion-weighted imaging (DWI). More recently, David has been working on motion correction and fast scanning methods at The Fraunhofer MEVIS Institute for Medical Image Computing in Bremen. He joined The University of Glasgow in July 2017 as a professor in magnetic resonance imaging, where he is working on clinical MRI at 7 Tesla in the Imaging Centre of Excellence (ICE), sited on the Queen Elizabeth University Hospital campus. Abstract for Lecture: Since the invention of Magnetic Resonance Imaging in the 1970s, there has been a continuous development of the methodology, enabling improved image quality, shorter scan times and higher spatial resolutions. Although, MRI is now a mature medical-imaging technology, the rapid pace of innovation persists and recent years have seen the introduction a number of new techniques, which are having a substantial impact in a range of applications. This lecture will review some of these developments with a particular focus on diffusion-weighted imaging. Examples will be presented that show how scan-acceleration methods are dramatically reducing scan times and how real-time correction algorithms are improving data quality and precision in quantitative imaging studies.

Mr Norry Wilson  
Glasgow born journalist and historian, Norry Wilson has had a life long love affair with his home city: its history, its buildings, its people and their stories. Since launching the lost Glasgow facebook page, he has built a 190k strong global community of like minded Glaswegians and ex-pats, each keen to hear his tales of the city, look to the past and imagine what tomorrow’s Glasgow might be like

Dr Laurence Abernethy  
Consultant Paediatric Radiologist, Alder Hey Hospital, Liverpool

Dr Aly Walker  
Consultant Paediatric Cardiac Anaesthetist, Royal Hospital for Children, Glasgow

Breakout Speakers

Dr John Adu, Post-CCT paediatric interventional radiology fellow GOSH
Dr Jo Kasznia-Brown, Consultant Radiologist, Musgrove Park Hospital Taunton
Dr Helen Woodley, Consultant Paediatric Radiologist, Leeds Teaching Hospital Trust
Dr Neil Stoodley, Consultant Paediatric Neuroradiologist, Frenchay Hospital, Bristol
Dr Tom Savage, Consultant Paediatric Radiologist, Royal Hospital for Children, Glasgow
MRS Mary Pirie, Superintendent Radiographer, Children’s Imaging, Royal Hospital for Children, Glasgow
Dr Andrew McAulhain Consultant Paediatric Radiologist, Christchurch, New Zealand
Oral Presentations

Thursday
Presentation 1a
Imaging in ventricular shunt dysfunction: Room for improvement? Mr Niall Burke, 4th year medical student at University of Edinburgh, qualified as a Diagnostic Radiographer

Presentation 2a
Impact of cardiac CT scans on use of invasive diagnostic catheterisation; Mrs Claire Griffiths, Paediatric Radiographer, Royal Hospital for Children Glasgow

Presentation 3d
Abdominal Wall Defects with intact skin; Mr Hetal Patel, Paediatric Surgery Trainee, Glasgow

Presentation 2b
Chest radiographs versus computed tomography for the Detection of Rib Fractures in children (DRIFT Study); Dr Susan Shelmerdine, paediatric radiology research fellow, funded jointly by the MRC and RCR, completing a PhD in postmortem imaging at Great Ormond Street Hospital.

Presentation 7a
Spontaneous Humeral Fractures in Infant while rolling: A CT based Finite Element Study; Dr Zainab Altai – Researcher in Musculoskeletal biomechanics

Friday
Presentation 5b
Review of Single vs. Multi-Voxel Spectroscopy in the Paediatric MRI Clinical Service; Dr Pauline Hall Barrientos, Clinical Scientist in MRI physics ICE, Glasgow

Presentation 4a
Expanding and Improving Core and Specialty Paediatric Radiology Training with a Novel Online System Linked to National PACS; Dr Jeremy Jones, Consultant Paediatric Radiologist, Royal Hospital for Sick Children Edinburgh and Honorary Senior Clinical Lecturer at the University of Edinburgh

Presentation 3b
Intussusception - A 14 Year Single Centre Experience Defining Clinical Outcomes Versus Nationwide Metrics; Dr Meraj Ondhia, Academic foundation doctor in the East Midlands. Research project as a student, investigating outcomes in intussusception at Alder Hey Children's Hospital.

Presentation 1b
Impact of a high profile medical misconduct case on orbital imaging requests; Dr Chris Cadman, ST Radiology, West of Scotland Training Scheme

Presentation 3c
US & MRI concordance renal transplant workup; Dr Noor Jawad, Radiology Fellow, Great Ormond Street Hospital

Presentation 3a
The role of ultrasound in diagnosing acute appendicitis: a review of local practice; Dr Jie-Ying Kowa, Radiology ST, St Georges Training scheme

Presentation 5a
Bone Age Assessment – A comparison of the two standards at a district general hospital; Dr Nicholas Chua, ST4 radiology registrar Basildon Hospital

Presentation 8a
NF1 phenotypes and genotypes Dr Linda Stephens, Paediatric Radiologist Royal Manchester Children's Hospital

Presentation 4b
Shall I Start Signing These Off Myself? Dr Andrew Kirby, final year registrar at the Royal Hospital for Sick Children in Edinburgh.

Presentation 6a
Success rate of paediatric MR examinations following the introduction of Play Club; Dr Rachael Gelder, fifth year radiology registrar in the West Midlands Deanery at University Hospitals of North Midlands.
Poster Abstracts

Poster 1a
Teratoma-Associated Encephalitis Dr BM Davies, Dr A Tamimi, Dr J Danin, Dr W Jan, Dr S Beri
Background Anti-NMDAR is the most common cause of paediatric autoimmune encephalitis. This occurs as a paraneoplastic syndrome from ovarian teratoma in 30% of girls. However, 15% of teratoma-associated encephalitis is antibody negative.
Objective To present a young teenager with anti-NMDAR negative teratoma-associated encephalitis. We discuss typical features found on multimodality neuraxial imaging. We highlight the importance of screening for occult ovarian teratoma and the diagnostic features on pelvic imaging.
Methodology A previously well 14 year old girl presented in status epilepticus. The seizures were refractory to treatment and she was maintained in an induced coma for three weeks. Serial CSF and blood tests were negative. Autoimmune profile showed mildly elevated anti-TPO, but serially negative anti-NMDAR. Recovery was gradual after immune modulation. Results We review the history of the acute admission with serial multimodality neuroimaging and EEG. The features are non-specific; our case shows the development of florid symmetrical signal abnormality throughout the hippocampi. Screening sonography suggested an ovarian cyst; further characterisation with dedicated pelvic MRI demonstrated a mature teratoma. Laparoscopic cystectomy was performed after neurological recovery. Histopathological slides confirm the diagnosis. The patient was recovering well at the time of writing.
Conclusions Ovarian teratoma is an important cause of autoimmune encephalitis in young women. Teratoma can be confirmed in antibody-negative encephalitis. The radiologist should suggest pelvic imaging in all young women presenting with autoimmune encephalitis. Pelvic MR is the gold-standard investigation.

Poster 1b
Traumatic Pseudoaneurysm of the Superficial Temporal Artery in the Paediatric Patient Dr BM Davies, W Hhang, Dr J Ekpe, Dr R Flora, Mr N Alexander
Background Pseudoaneurysm of the superficial temporal artery (STA) is a rare vascular lesion which typically occurs after blunt trauma. Such lesions are most commonly seen in men. We present a case of a young girl referred from General Practice with a facial mass.
Objective We review the unusual case of a young child with a traumatic STA pseudoaneurysm. We aim to educate the reader with the specific diagnostic features found on multimodality imaging correlated with a review of current literature.
Methodology We present the case of a 7 year old girl with a painless pulsatile mass in the left temporal region which had arisen six weeks after minor trauma. Results We illustrate the history and examination findings with clinical photography (consent obtained). Greyscale and Doppler images from the initial ultrasonographic examination are discussed with selected images from the pre-operative MRI and MRA showing the lesion extent. Surgical ligation of the pseudoaneurysm was performed under general anaesthesia; the operative findings are illustrated with clinical photography. Histopathological slides confirm the diagnosis. The patient recovered uneventfully. Conclusions Post-traumatic pseudoaneurysm of the superficial temporal artery is a rare cause of a head and neck mass in the paediatric population. Knowledge of this clinical phenomenon can guide proper diagnosis for planning safe, effective treatment. We present the unusual case of a young girl with clinical photography, multimodality imaging and direct histopathological correlation. Diagnostic imaging was critical for the prompt diagnosis of a superficial temporal artery pseudoaneurysm in this case.

Poster 1c
Vigabatrin-associated brain abnormalities on magnetic resonance imaging (VABAM) in patients of infantile spasms: a useful insight. Dr C Chatur, Dr R Allen, Dr S Abernethy
Background Vigabatrin, an irreversible inhibitor of gamma-aminobutyric acid transaminase, is used for treatment of infantile spasms. It is the treatment of choice for infantile spasms in tuberous sclerosis and the second-line therapy for other etiologies. Apart from its documented side effects which include permanent peripheral visual field defects, headache, drowsiness, fatigue and dizziness, Vigabatrin has recently been known to cause reversible MRI signal changes in the brain.
Objective Aim of our study is to highlight the Vigabatrin-associated brain abnormalities on magnetic resonance imaging (MRI) (VABAM), which occur secondary to treatment with Vigabatrin.
Methodology MRI brain images of two paediatric patients who were diagnosed with infantile spasms and being treated with Vigabatrin were carefully assessed. Comparison was made to the relevant prior scans in both the cases. Results MRI brain in each of the cases revealed areas of T2-hyperintensity and diffusion restriction on diffusion-weighted imaging (DWI) in globi pallidi, dentate nuclei, thalami, corpus callosum, midbrain and brainstem. Follow-up scans revealed that these changes were reversible upon withdrawal of the medication. Conclusion Vigabatrin causes reversible abnormal MRI signal changes (VABAM) in the paediatric population treated with it for infantile spasms.
**Poster 1d**

MRI findings in children presenting to a District General Hospital with suspected congenital brain malformations  
A Ashan, M Bishay, E Smith, V Bhalla

**Background** Congenital brain malformations are a significant cause of morbidity in children, but are relatively uncommonly seen in imaging in District General Hospital (DGH) practice as primary presentation. **Objective** To review some of our cases of imaging children presenting with neurological deficits to our DGH and salient imaging findings. **Methodology** Retrospective review of recent cases of children referred for imaging due to neurological deficits in the period from April to August 2018. **Results** Cases included: A 17 month old boy referred with delayed motor development, left hypertonia and weakness. MRI scan of the brain demonstrated features of chronic compensated obstructive hydrocephalus with no compressive lesion, suggestive of congenital aqueductal stenosis. A 3 year old girl presented with global developmental delay and seizures. Brain MRI showed colpocephaly and classic features of dysgenesis of the corpus callosum and Dandy-Walker malformation. A 6 year old boy was referred for imaging due to congenital left hemiplegia (parents had declined imaging earlier in childhood). MRI showed atrophy of the right cerebral hemisphere. It was felt this may be a consequence of maternal peripartum sickle cell crisis. **Conclusions** Magnetic resonance is the imaging modality of choice for children with suspected brain malformations. Such malformations are occasionally encountered in DGH practice.

**Poster 1e**

Enterovirus D68–associated acute flaccid myelitis: MRI findings of an emerging infection  
Dr S Choi, Dr. A Quigley, Dr. J Shetty, Dr. J Jones

**Background** Enterovirus D68 is an emerging infection associated with acute flaccid myelitis (AFM). Cases of AFM associated with Enterovirus D68 infection have increased in recent years and the South East of Scotland recently experienced the largest reported paediatric cluster of cases in Europe. All presented with flaccid asymmetrical limb weakness with prodromal symptoms including coryza, malaise and pyrexia. Some had bulbar involvement affecting speech and swallow. All had significant pain in the affected limbs. **Objective** All children had imaging of the brain and spinal cord. We present the MRI findings of five EV-D68 confirmed patients presenting with AFM. **Results** MRI showed abnormal increased T2 signal in the dorsal pons and medulla. **Conclusions** Enterovirus D68 cases have increased in recent years. We present a radiological summary of the common MRI findings seen in brain and spinal cord. This will hopefully alert radiologists to the characteristic imaging pattern and aid them in making the diagnosis in those patients presenting with AFM.

**Poster 2a**

Sonographic and Clinical Correlation in the Diagnosis of Pyloric Stenosis: A Retrospective Study (2011-2016)  
Dr A Fitzhugh, Dr K Wessely, Dr R Pope

**Introduction** Hypertrophic pyloric stenosis (HPS) is an idiopathic condition affecting infants, mainly males aged 2-12 weeks presenting with non-bilious vomiting, resulting in progressive gastric outlet obstruction. As a tertiary paediatric surgical centre, Chelsea and Westminster receives HPS referrals from across London and its periphery. Clinical assessment often involves ultrasound, useful in providing a dynamic non-invasive and objective measure of the pylorus. **Objectives:** Primarily to determine if sonographic diagnosis of HPS was adequate to support paediatric surgery’s decision making, and secondarily gathering patient demographics and correlating ultrasound with final diagnosis (including intraoperative findings where available). **Methodology:** A search was made of patient episodes on Chelsea and Westminster’s radiology information system (RadCentre) from 2011-2016 looking for relevant request phrases (e.g. pyloric stenosis). This identified 167 patients for inclusion, corresponding to 181 individual ultrasounds. Data was analysed, looking at ultrasound reports, final diagnosis (by discharge summary review using LastWord software), and if the patient went to theatre. **Results:** Of 167 patient referrals, 75.5% were male (average age 47.7 days). 12 patients required 2 scans and 1 underwent 3 scans. 64 patients proceeded to theatre, of which 59 were confirmed HPS (93.2% male, average age 36.5 days). The remaining 5 cases included 2 false positives (pyloric web, viral illness) and 3 true negatives (malrotation, 2 duodenal atresias). Maximum sensitivity was 98.3% and specificity 95.4%. The remaining final diagnoses and pyloric measurements are discussed. **Conclusions:** Ultrasound is a reliable adjunct in HPS diagnosis, although repeat studies may be required to reach a consensus.

**Poster 2b**

Distal Loopogram for identification of fistula to the urinary tract in children with Anorectal Malformations: Are we getting enough pressure?  

**Background** Anorectal Malformations (ARM) are a complex spectrum of congenital abnormalities of the rectum that include malformations with perineal fistulas, fistulas to the lower urinary tract, and rectal atresia. If no perineal fistula is seen, a divided colostomy is fashioned and the patient undergoes a distal colostogram once they have recovered from the initial surgery. However, perception among surgeons is that colostogram findings are often disappointing when compared to the operative findings and that inadequate pressure is been used during the procedure to distend the pouch and
identify a fistula if present. Objective To assess the performance of the distal colostogram. Methods Performance of the distal colostogram was assessed by correlating colostogram findings with intraoperative findings and identifying any discrepancies. An assessment of adequacy of the examination was also performed by a radiologist blinded to the operative findings. Results Concordance: 71% Discrepant: 29% Imaging deemed inadequate: 29% Conclusion We achieved a concordance rate of 71%, which is suboptimal. Inadequate distention was apparent in 29% of cases. It was also noted that the buttocks and perineum were not always included in the images. Including this region allows an estimation of the distance of the rectal pouch to the skin. The sacrum was included in all studies. We discuss the factors that have contributed to the discordance and strategies to improve.

Poster 2c
Paediatric ingestion of >40 magnets. Dr R Dunn, Dr B Dreyer, Dr R West Case Presentation This case study presents a 2 year old who ingested > 40 spherical children’s magnets. She was brought to AE shortly afterwards and had an abdominal film which revealed 3 magnets in the upper throat around the level of the hyoid bone and approx. 40 magnets in the upper abdomen. The patient was systemically well with no concerning features on examination. ENT performed laryngoscopy and removal of magnets under GA and found one magnet on lingual surface of the epiglottis and two on the laryngeal surface of the epiglottis. The ingested magnets were followed through the GI tract radiographically and the patient was managed conservatively with oral laxatives to promote GI transit. It took approximately 3 days for the magnets to reach the rectum and start passing in stool. She was brought to A&E shortly afterwards and had an abdominal film which revealed 3 magnets in the upper throat around the level of the hyoid bone and approx. 40 magnets in the upper abdomen. The patient was systemically well with no concerning features on examination. ENT performed laryngoscopy and removal of magnets under GA and found one magnet on lingual surface of the epiglottis and two on the laryngeal surface of the epiglottis. The ingested magnets were followed through the GI tract radiographically and the patient was managed conservatively with oral laxatives to promote GI transit. It took approximately 3 days for the magnets to reach the rectum and start passing in stool. The patient was systemically well with no concerning features on examination. ENT performed laryngoscopy and removal of magnets under GA and found one magnet on lingual surface of the epiglottis and two on the laryngeal surface of the epiglottis. The ingested magnets were followed through the GI tract radiographically and the patient was managed conservatively with oral laxatives to promote GI transit. It took approximately 3 days for the magnets to reach the rectum and start passing in stool.

Poster 2d
Hydrocolpos and vesico-vaginal reflux: what the radiologist needs to know Dr S Zafar, Dr K Wesseley Background Hydrocolpos describes a fluid filled vaginal cavity. When associated with concurrent distension of the of uterine cavity, the term hydrometrocolpos is utilized. A key objective for the radiologist in to determine a likely cause of the vaginal distension and differentiate functional voiding disorders such as vesico-vaginal reflux (VVR) from obstructive causes of hydrocolpos, such as an imperforate hymen, vaginal agenesis or stenosis. These may be isolated anomalies or occur in the context of a syndrome e.g. McKusiek Kaufman. Objectives - Review common causes of hydrocolpos. - Recognize clinical and imaging findings of VVR. - Utilise illustrative case examples to demonstrate imaging features, which may serve as differentiators in evaluating patients with hydrocolpos. Methodology The first line imaging modality is usually ultrasound, which characteristically demonstrates a retro-vesicle anechoic lesion, which represents urinary distension of the vaginal cavity. Complete resolution of hydrocolpos is demonstrated on the post-micturition bladder scan, and may be diagnostic of VVR. A micturating cysto-urethrogram may demonstrate real-time, retrograde filling of the vaginal cavity during micturition. During fluoroscopy, associated anomalies of the proximal urethra or bladder neck may be simultaneously detected. Magnetic resonance imaging should routinely be undertaken to exclude associated anomalies of the genitourinary tract such as renal agenesis and uterus didelphys. Conclusions VVR may produce imaging findings that may mimic obstructive hydrocolpos. Awareness amongst radiologists of this functional entity and confidently differentiating it from obstructive causes of hydrocolpos is vital, as the treatment and prognosis in these cases is entirely different.

Poster 3a
An Audit of Imaging in Cervical Spine and Thoracic Trauma at The Royal Hospital for Children (RHC), Glasgow. Dr C Pollard, Dr G Irwin, Dr M Spiers Background Children suffer different injury patterns from adults, resulting in a lower incidence of spinal and thoracic injuries. Recent guidelines1,2 have taken a more selective approach to Paediatric trauma imaging compared to adults, replacing cervico-thoracic CT with radiographs and MRI, in an effort to limit exposure to ionising radiation. Objective Retrospective audit of trauma imaging in RHC Glasgow. We assessed the use of radiographs as first line imaging. The audit standard was 100% of all patients who underwent CT should have had preceding radiography. A secondary aim was to assess what additional yield was gained from CT. Methodology Cervico-thoracic trauma CT scans, from the Emergency Department, were identified over 2 years. The use of preceding radiographs, including those performed elsewhere, was assessed and the additional yield of CT analysed. Results 56 patients were scanned over 2 years; producing 17 thoracic and 52 cervical spine examinations. 13 (76%) patients had a chest radiograph before CT. 18 (35%) patients had cervical spine radiographs prior to CT. CT did not detect any abnormalities over radiography that required active treatment. The additional findings were a trace pneumothorax and a tiny traumatic pneumatocele. Two cervical spine CTs were equivocal; one patient was cleared clinically and the other had a normal MRI. Conclusions Many patients proceeded straight to CT for cervico-thoracic trauma. New guidance favours a more selective and multi-modality approach in Paediatric trauma. Retrospective analysis of our data supports this approach, and a new imaging guideline flowchart is presented.
**Poster 3b**

**Chronic Recurrent Multifocal Osteomyelitis – From Head to Toe** Dr J Hare, Dr A Harbison, Dr L McCann, Dr K Mahmood, Dr C Landes, **Background** Chronic recurrent multifocal osteomyelitis (CRMO) is an uncommon inflammatory condition which presents with insidious bone pain and swelling. Commonly affected sites include the clavicle, tibia and femur. Over the past decade, Whole Body MRI (WB-MRI) has become a key investigation in the diagnosis of CRMO, although bone biopsy remains the gold standard. Recent research suggests that with greater awareness and better diagnostic imaging techniques, more cases of CRMO are being detected. Furthermore, our institution has diagnosed CRMO in a number of cases where the presenting symptoms and imaging findings do not fit the classic description of the disease. **Objective** To describe the trends in diagnosis of CRMO at our institution and demonstrate cases of biopsy-proven CRMO where the imaging findings were atypical. **Methodology** A prospectively-collected database of patients with CRMO was obtained from the Rheumatology Department. Summary analysis was performed, particularly looking for trends in the diagnostic pathway. Atypical cases were identified for their educational value. **Results** At our institution, over 30 children were diagnosed with CRMO from 2007-2017. We will show what proportion of these children underwent WB-MRI as part of their work-up and how many required a bone biopsy to confirm the diagnosis. More specifically, we will present cases of confirmed CRMO, where the imaging appearances were more typical of other diagnoses, e.g. haematological malignancy. **Conclusions** CRMO is an important diagnosis not to overlook. Our institution has experienced increased detection of the disease in recent years, including a number of atypical cases, with the use of WB-MRI.

**Poster 3c**

**An Audit of Paediatric GP Pelvis X-ray Examinations,** Mr E Fan, Dr J Kraft, Dr M Shahid, Ms E Keyte **Background** Current procedure at LTHT: Radiographers have Paediatric GP X-rays checked by a Radiologist before the patient leaves department to assess image quality and if immediate management is required. **Objective** “Do all GP pelvis X-rays need showing to a Radiologist?” This audit aims to assess two aspects of the pelvis X-ray examination: 1) Image quality 2) Patient management 3) Is either of these being compromised by not getting X-rays checked? **Methodology** A 50 image review over a 4 month period in 2016. Image criteria were a collaboration of local protocol, European Imaging Guidelines and a radiographic positioning textbook. Patient management was split into acute pathologies and timeliness of reports. The results were compared between a Radiographer and Radiology Registrar. **Results** Overall results demonstrate over 90% compliance in 7/10 image criteria, as well as good adherence to protocol. Areas to improve are collimation, centring and application of gonad shielding. Reports are produced within a week of imaging, with no immediate departmental action required. **Actions** Delivery of a teaching presentation to the Radiographers with specific focus on areas to improve. Poster production to include imaging protocols, with gold standard positioning and lead application. This will be displayed in departments to help improve image quality. A film review test for Radiographers to assess if they can identify pathologies and good image quality. Re-audit in 6 months.

**Poster 3d**

**From Hips to Toes: a review of the range of causes of paediatric limp and their imaging findings** Dr J Bretherton, Dr J Maclachlan, Dr I Beal **Background** - Limp is a common and challenging paediatric presenting complaint with a wide differential diagnosis - We present a comprehensive pictorial review of common and uncommon causes of the limping child using cases from our institution, presented using the “surgical sieve” format in addition to joint-specific pathologies. **Proposed Content** 1. What, when and how: Imaging the limping child 2. Causes of limp: Surgical sieve - Trauma: our tertiary paediatric hospital, CRMO in children make identification of injuries, as well as benign and aggressive lesions, more challenging. Certain benign lesions, such as non-ossifying fibroma, can be confidently diagnosed on plain radiographs thereby preventing unnecessary investigation and follow up. Although a final diagnosis may not be possible in other cases on plain film alone, familiarity with the...
Poster 3f
CRITOL – not for girls? Mr L Irwin, Dr S Goodwin, Dr G Irwin

Background The predictable order of appearance of elbow secondary ossification centres in children is important in interpreting elbow radiographs, usually in the context of trauma. The usual sequence of appearance of these ossification centres is given by the acronym CRITOL, but exceptions have been described and are recognised as normal variants.

Objective To Investigate the incidence of variation to the usual CRITOL order of appearance of secondary ossification centres at the elbow.

Methodology Retrospective review of 421 elbow radiographs in children at our centre by the three authors. Statistical analysis of results.

Results In boys the majority of radiographs remained consistent with the described CRITOL sequence. Girls were more likely to have a variant pattern than the normal pattern at both the two and the four ossification centre stages. CI was more common than CR, and CRIO was more common than CRIT. The gender difference in ossification pattern reached statistical significance.

Conclusions CRITOL can be confidently used in assessing the x-rays of boys’ elbows. In girls, knowledge of the significant variation at both the two and four ossification centre stage is required to prevent x-ray misinterpretation.

Poster 3g
Snapshots, over a 6 year period, of Emergency CT in paediatric trauma at a district general hospital (DGH) Dr K Sabarwal, Dr A Kapoor, Dr S Negus

Background/ Objective There are well recognised guidelines in place to assist healthcare professionals in the assessment of suspected non-accidental injury (NAI). The objective of the audit was to assess departmental practice compared to the pre-existing and up-dated guidelines and instigate change if needed.

Methodology 40 patients undergoing skeletal survey for suspected NAI were retrospectively analysed.

Results/ Conclusions A high proportion of examinations (36/40) are performed within the recommended 24 hours of referral. 24/40 reports were issued within 24 hours. Of those reported after 24 hours, 9/16 were performed on a Friday potentially causing delay pending a second reviewing radiologist. In these instances it is suggested a report could be issued by a single consultant and an addendum added by a second reviewing consultant when available. A consensus report was issued for 35/40 patients. Previous practice has been to add the second reviewers initials to the report. It is not clear whether a second opinion had been obtained in the remaining 5 cases but not documented. To address this, policy has changed in that the second radiologist will verify the report rather that just give an opinion. 20/40 patients had follow-up imaging performed within the recommended 14 days. It is observed that the referral for follow-up examination is frequently not submitted. A new policy was introduced whereby the initial referral is used to book the the follow- up examination. Limited re-audit suggests that these policy changes are working well.

Poster 4a
Audit of skeletal surveys in suspected non-accidental injury Dr R Spencer, Dr K Duncan

Background/ Objective There are well recognised guidelines in place to assist healthcare professionals in the assessment of suspected non-accidental injury (NAI). The objective of the audit was to assess departmental practice compared to the pre-existing and up-dated guidelines and instigate change if needed.

Methodology 40 patients undergoing skeletal survey for suspected NAI were retrospectively analysed.

Results/ Conclusions A high proportion of examinations (36/40) are performed within the recommended 24 hours of referral. 24/40 reports were issued within 24 hours. Of those reported after 24 hours, 9/16 were performed on a Friday potentially causing delay pending a second reviewing radiologist. In these instances it is suggested a report could be issued by a single consultant and an addendum added by a second reviewing consultant when available. A consensus report was issued for 35/40 patients. Previous practice has been to add the second reviewers initials to the report. It is not clear whether a second opinion had been obtained in the remaining 5 cases but not documented. To address this, policy has changed in that the second radiologist will verify the report rather that just give an opinion. 20/40 patients had follow-up imaging performed within the recommended 14 days. It is observed that the referral for follow-up examination is frequently not submitted. A new policy was introduced whereby the initial referral is used to book the the follow- up examination. Limited re-audit suggests that these policy changes are working well.

Poster 4b
Multi-Centre Audit of Adherence to the RCR/RCPCH Imaging Guidelines for Suspected Non-Accidental Injury Dr B Davies, Dr S Alwan, Dr S Haydar, Dr J Danin, Dr W Jain

Background The Royal College of Radiologists (RCR) and Royal College of Paediatrics and Child Health (RCPCH) published an update on the guidance for imaging in suspected child abuse titled “Standards for Radiological Investigations of Suspected Non-Accidental Injury (NAI)”[1] in September 2017. Objective To ensure that NAI imaging adheres to the national guidelines. To identify areas of weakness and review if similar problems are recurrent across centres. To assess the knowledge of local clinicians/radiologists responsible for the application of the guidance.

Methodology An audit period of January - August 2018 was defined. Patients were identified from RIS databases. The low caseload necessitated a multi-centre approach. The RCR’s audit proforma was adapted to focus on the adequacy of the initial skeletal survey, completion of neuroimaging, return for follow-up imaging and appropriate investigation of cohabitant children. A questionnaire was devised to assess knowledge of, and attitudes toward, the new guidance which was distributed to local
Paediatricians and Paediatric Radiologists. Results Audit standards were set at 100% for all domains. The results of the audit are presented with focus on the domains with suboptimal performance, where problems were recurrent cross-site and where there are significant differences between sites. Conclusions We present the results of the first multi-centre audit into the application of the RCR/RCPCH NAI guidance 2017. We focus on the domains where performance fell below the standard. We discuss possible reasons for poor performance in light of the knowledge of those responsible for the service.

Poster 5a
Comparison of MR Techniques for Liver Iron Concentration Measurements for Paediatric Patients Williams, S, Dr Hall-Barrientos, P, Dr Foster, J Background. Excess iron in the body is typically deposited in the liver which can have an impact on liver function can also affect the function of the spleen, pancreas and normal cardiac function. FerriScan is an MRI procedure that provides accurate and calibrated measures of liver iron concentrations (LIC) non-invasively. This procedure can be repeated over time to track disease progression. As the results of FerriScan are obtained externally then other methods have been explored for use in Royal Hospital for Children in Glasgow. These alternative methods include a single slice Gandon signal intensity ratio (SIR) method, a multi-slice multi-echo GandonSIR method and a T2* method using conversion algorithms from Henninger, Wood and Garbowski. Aim The aim of this project was to determine if the LIC methods were statistically significantly different and to compare the conversion algorithms when using the T2* method. Methodology An evaluation of LIC techniques were carried on fourteen patients. For each patient all LIC methods were performed. Each LIC method required regions of interest (ROIs) to be drawn within the liver, muscle, spleen and background. Using Gandon’s SIR algorithm or MRQuan software, ROIs were used to obtain SIR ratios or measures of T2*. Results The results indicate the two SIR methods were not statistically significantly different. This suggests that the single slice SIR method could be removed from the protocol, reducing the scan time and the number of breath holds required. These comparisons also found that the FerriScan results and the Garbowski T2* method results were not statistically significantly different.

Poster 5b
Exploring The Feasibility Of A Clinical Service For MRI-Based Investigation Of Osteoporosis In The Young Hall Barrientos P, McComb C, Wong J, Foster J, Ahmed SF Background. For patients with osteoporosis there are many causes for fracture occurrence. There is strong evidence that bone microarchitecture plays an important role in osteoporosis. Current assessment of bone health includes; clinical presentation, x-rays, DXA and laboratory studies of bone turnover markers. MRI can assess bone microarchitecture and bone marrow adiposity and provides a virtual bone biopsy. This project will translate current research methods to a 1.5 T (Aera, Siemens) and develop a clinical service at the Royal Hospital for Children in Glasgow. Methods The 3 T protocol was optimised for 1.5 T using an in-house knee phantom and 3 adult knees. The starting parameters were: TRUEFISP pulse sequence, TE=4.39 ms, TR=10.19 ms, FOV=100 mm, resolution 0.2x0.2x0.4 mm, 30 slices, using a Transmit/receive 15 channel knee coil. Results. The 1.5 T protocol was successfully optimised and images were analysed with in-house built software. There are several anticipated benefits of micro MRI: a more comprehensive evaluation than otherwise possible for patients on BPT, improved level of discrimination leading to more cases being discharged, and finally, avoiding the need for bone biopsy.

Poster 5c
Initial experiences of using a MRI kitten scanner at the Royal Hospital for Children, Glasgow Mrs L McKendrick Background A MRI kitten scanner was installed in October 2017 at the Royal Hospital for Children, Glasgow. It was installed to help reduce our patients fear and anxiety before a scan. Methodology It works by the patient picking from selection of toys that come with the scanner. The patients place a toy on to the scanner bed and push it in to the gantry. Once the toy is in the gantry a voice and display explains how the scanner works and why the exam is required. The toys anatomy is then shown on the screen, clarifying the scanner’s purpose. The voice coming from the scanner also explains that patient must stay very still and at this point the radiographer/play specialist/HCSW will reiterate how important it is for the patient to stay still when it is their turn for the scan. The kitten scan is fun and entertaining but is also an educational experience for the patient. Results Feedback from patients and their families have been extremely positive. The patients usually play with multiple toys, watch and listen to all the stories. They are usually very engaged with the scanner and enjoy “playing radiographer”. The parents and families are also very positive about the scanner and it is a good tool to lighten the mood if the parents are also anxious about the scan. This is especially the case when the pts are transitioning from GA scans to non GA.

Poster 6a
Reducing lens exposure in paediatric head CT: Chin down and look down Dr H Hameed, Dr L Lam, Dr G Irwin Background Irradiation of the lenses in CT examinations has a deterministic effect and can lead to cataract formation, with threshold in paediatric population reported to be almost half of adults. Children
who have repeated CT head scans are at particular risk. The most effective method at reducing this is to exclude the lenses from the primary X-ray beam. Multiple studies have reported that scans angled to the supraorbital mental (SOM) line are most effective at decreasing lens dose. In scanners without gantry-tilting, this may be accomplished by head flexion (tilting patient’s chin towards chest) 3. In addition, we hypothesise that by encouraging the patient to look down, the lenses can be further moved away from the scan field.

**Methodology** Local departmental policy states that the acquisition volume for CT head should exclude the eye lenses. Standard of 100% CT scans following this without compromising the diagnostic outcome was locally agreed upon. Retrospective review of 50 consecutive CT head scans performed at RHC was performed, with exclusion criteria being any patient requiring extended field of view (avoidance of lenses impossible) for pre-operative planning, dedicated CT of the orbits/mastoids/sinuses and suspected/known cervical spine injury. Data was accessed from radiographer logbook, CRIS and PACS. Data collected included scan indication, number of lenses included in the study, diagnostic adequacy, head positioning and whether the infant was looking down. Results 1 st audit round: All scans of adequate diagnostic quality. 0% of lenses excluded with no scans angled to SOM baseline and no patients looking down. 1 ST action plan: Disseminate results of audit to radiographers and highlighting importance of lens exclusion. Positioning child’s head in flexion so that scanning angle is parallel to line passing from supraorbital ridge to external auditory meatus. Starting axial scanning on a plane running from below skull base to base of cribriform plate based on sagittal scout image. Encouraging child to look down during scan by distracting attention using toy or parents. 2 nd audit round: 15% of scans started too high and were of inadequate diagnostic quality. Almost a quarter of scans started too low. 61% of lenses avoided with 63% of scans demonstrating adequate head flexion. 2 nd action plan: Highlighting importance of achieving diagnostic examination and landmarks to be used for starting slice, in addition to suggesting use of a new landmark for anterior cranial fossa on scout image. Reinforcing these scanning parameters and use of ‘look down’ part of the protocol by displaying posters in the department. 3 rd audit round: All scans of adequate diagnostic quality. 40% of lenses avoided with 33% of scans demonstrating adequate head flexion. 3 rd action plan: Highlighting the importance of coronal as well as sagittal plane positioning. Suggesting improved bony landmarks for the anterior cranial fossa based on sagittal scout image. Emphasising the importance of starting below the lowest of the three cranial fossae to ensure no brain is missed.

**Poster 6b**

How are we doing in radiation control in paediatric plain radiographs? Dr S Chang, Dr T Savage  **Background:** Paediatric population has a greater risk of developing complication after radiation exposure and ALARA principle is designed to minimise radiation exposure. **Objective** To assess compliance with ALARA principle in our practice. **Methodology** Retrospective study on inpatient plain radiographs (patients < 16days old) with vascular catheters over 4 months period. We assess the imaging coverage appropriateness against request in paediatric plain radiographs for vascular catheters, vascular catheter position interpretation and report standard in our practice. **Results** A total of 600 radiographs performed for patients < 16days old over 4 months. 87 patients had 300 radiographs with UAC/UVC/PICC are included in this study. Majority are chest x-ray (62%), followed by abdominal film (23%) and combined chest and abdomen films (15%). 133 out of 300 radiographs (44%) had suboptimal coning. 83 out of 133 films (62%) has limb overexposure particularly in plain radiographs with upper limb PICC lines. No complication is identified within these overexposed areas to support the necessity. 268/300 reports (89%) on vascular catheter position stated the presence of vascular catheter on radiographs. 266/300 reports (89%) included description of UAC/UVC/PICC position. 66/300 reports stated their impression on the vascular catheter placement either satisfactory or incorrect position. Of these 66 reports, there is 95% consistency on vascular position placement interpretation between auditor and reporters. 5% discrepancy (3 reports) with no clinical significance. **Conclusions** We are not 100% complying with the ALARA guideline in paediatric plain radiographs. Recommended actions include revisiting established guideline for ideal imaging coverage, ward nurses cooperation in patient positioning and maintain high standard of reporting.

**Poster 7a**

Post-mortem MRI comparison with traditional post-mortem examination; Lessons learned from the first year in practice. Dr M Ramsay,

Dr C Lehane, Dr G Colleran, Dr P Downey  **Background** The number of consented autopsies has been decreasing over the last ten years. Previous studies have shown that declining numbers are largely secondary to parental refusal. Studies show that MRI with ancillary testing had a 94.9% concordance rate with conventional autopsy in the foetal group. Since March 2017 post mortem MRI has been performed on all autopsy cases > 500 grams or > 24 weeks clinical gestation. One year on we review these cases. **Methodology** Autopsies performed with MRI between March 2017 and March 2018 were retrieved. 18 cases were divided into those with a known antenatal diagnosis of a congenital anomaly or not. MRI and post mortem findings were compared. **Results** The presence or absence of structural abnormality reported at MRI was confirmed at autopsy examination in all 18 cases. (100% concordance) However in some cases there were additional findings at post mortem which had not been reported in the MRI. These were significant in two cases with complex cardiac anomalies. This represents a false negative rate of 11.1%. **Conclusions** This study helps establish there is concordance of 100% when identifying structural abnormalities between post-mortem MRI and autopsy examination. At post mortem additional significant structural anomalies were identified in two cases with cardiac anomalies, for which prenatal echocardiography is the gold standard. MRI with a detailed placental examination may be a reasonable alternative to traditional post mortem examination where resources are limited or due to parental objection to invasive examination.
Poster 8a
Radiographic Pareidolia: A pictorial Review  Dr A Kirby, Dr M Jackson

Background: Pareidolia is the familiar phenomenon of perceiving a recognisable pattern where none exists, such as spotting shapes in the clouds or seeing the likeness of a religious figure on a slice of burnt toast or the surface of a sliced vegetable. Whilst primarily of interest to psychologists and neuroscientists, pareidolia should also be recognised and understood by those performing and interpreting medical imaging. Objective To provide a richly illustrated pictorial guide to pareidolia in the context of paediatric imaging.

Content: This poster will summarise current understanding of pareidolia outwith radiology, but primarily focus on examples of this phenomenon found in paediatric imaging. From hardytree and acorns through vultures, eagles and owls to dinosaurs and ninja turtles, it is remarkable what can crop up in a day’s reporting. Such examples can provide entertainment for young patients or offer a little light relief in the context of clinical meetings. However, the pattern recognition utilised in pareidolia is closely related to the process used by radiologists and radiographers in assessing images. ‘That looks a bit like something else’ is the basis of recognising pathology. Anatomists, histopathologists and more recently radiologists have all made use of familiar objects, animals and even celebrities as a means of increasing recognition of distinctive anatomy or pathology.

Conclusions: While pareidolia could be viewed as a distraction for those reporting medical imaging, this poster will demonstrate the creative potential it offers, critical for the generation of new radiological signs.

Poster 8b
Malposition of left saphenous peripherally inserted central Catheters: Lessons learned from two cases. Dr C Granger Dr L Leven Dr J O’Shea Dr R Allen Dr L McGlone

Introduction: in infants, peripherally inserted central catheters (PICCs) are often inserted into the Great Saphenous Vein (GSV), with the tip in the Inferior Vena Cava (IVC). Malposition, within the Left Ascending Lumbar Vein can occur resulting in neurological injury. Aims: We report two recent cases of PICC malposition. Cases Two infants requiring parenteral nutrition following laparotomy had PICCs inserted into their left GSV. Infant 1 PICC tip was interpreted as in satisfactory position within the common iliac vein and safe to use. Five to eight days later he developed irritability, pyrexia and seizures. Repeat x-ray showed the PICC tip projecting over the sacroiliac joint with the tip deviating laterally. Lumbar puncture revealed white lipaemic CSF was obtained. Malposition was suspected and the line removed. Infant 2 PICC tip was initially at T5 but withdrawn as felt to be intracardiac. Twelve days later she developed seizures. Repeat x-ray showed the PICC to have a tortuous course and lateral x-ray showed it tracking posteriorly and advancing parallel to the vertebral column. It was promptly removed. Both children suffered severe neurological impairment. Discussion: Retrospective review of the x-rays found that the PICCs did not cross the midline to the right sided IVC and had a tortuous course. The PICC tip in both of these cases is likely to have been within the Left Ascending Lumbar Vein. This much smaller vein is anatomically close to the dural space and if punctured allows catheter fluid to enter the dural space and lead to neurological sequelae. Parental consent was obtained to allow increased learning of this rare complication.

Poster 8c
Clinical Governance - how is it relevant to Paediatric Radiology? An educational review of the topic. Dr L Ramsay

Background: “Clinical governance” is a buzz topic in medical education and leadership. But what does it really mean, and how is it relevant to radiologists, and to paediatric radiology? Objective: There are several important topics which all doctors need to have a general understanding of, but which may not come up regularly in their day to day practice. Much of the guidance and educational literature on topics such as clinical governance is produced by large organisations like the BMJ or the Royal Society of Medicine. In subspeciality training like paediatric radiology, it is hard to see how to translate this generic guidance into information that is relevant. In this educational review, we aim to demystify clinical governance, logically and systematically review the 7 pillars of clinical governance, evaluate how clinical governance has evolved over time and what it means in the current NHS. We also look at how technology may play a part in changing the way that aspects of clinical governance are administered. This evaluation is performed in the understanding that paediatric radiologists will be viewing the poster, and that they will be keen to see how clinical governance and the potentially general aspects of the subject can be made relevant and specific to the practice of paediatric radiology. In this way, the aims of clinical governance of quality care, accountability and constant dynamic improvement can be fully integrated into paediatric radiology service improvement projects and departments.

Poster 8d
A fractured Central Line: a seamless interface between Paediatric Surgery and Radiology and the evolution of Paediatric Interventional Radiology in Glasgow Mr C Hajivassiliou

Case report: A 4 old girl with cystic fibrosis was due for change of port-a-cath. Exploration of the neck and securing of the fibrous tract and catheter was performed surgically under direct vision. Despite not being standard procedure, in anticipation of the possibility of the catheter fracturing, a guide-wire was passed into the right atrium; it fractured at a point of adherence in the region of SVC/RA. Method / Results: The catheter was dislodged from the wall of the vein using a ureteric stent pusher but could not be retrieved safely. The guide-wire was advanced into the femoral vein, externalized surgically and lengthened. The procedure was safely completed using standard split-sheath venous introducers.
to protect the endothelium from damage by the knotted guide-wire. The port-a-cath was replaced. It was removed 6 years later when no longer required. The approach obviated the need for major risky surgery and became standard procedure in such cases.

**Conclusion** At the time, Clinicians enjoyed much discretion and independence and this allowed intuitiveness, inventiveness and innovations to thrive. Tighter regulation followed, to ensure accountability and safety checks and balances. The specialty of Paediatric Interventional Radiology is now well established, with concomitant developments of imaging and technical equipment and prostheses. The correct balance between clinical independence and regulation is needed to maintain safety but not stifle innovation and progress.

**Poster 8e**

**Project DinoSore** Mr D Mitchell

**Background** To develop a concept in collaboration with Bodmin College Digital Media students, to create a more paediatric friendly environment with in the Clinical Imaging departments, literature, and signage. **Objective** To create a range of characters to decorate an x-ray room and sub waiting area, suitable for paediatric patients with in a district general hospital. To also provide stickers, patient information leaflets and signage for paediatric patients. **Methodology** To work with a selected student from Bodmin College Digital Media course, to select the appropriate look, colours, size of the characters to be used throughout the hospital site, Plan with the hospital innovation team, how the work can be introduced and used with in the Trust. Seek approval from the Estates department, Communication department and Cleaning contractors that the work is suitable to be used. Work with Health Innovation Support to create a contract with the college and selected student, to allow the artwork that is produced to be used within the Trust. **Results** A series of characters produced to create a theme with in one x-ray room and waiting area. A range of stickers and leaflets designed for use with in all the modalities with in clinical imaging across the county. A series of small characters produced to help paediatric patients and their parents to guide them to the different imaging departments. **Conclusions** A successful collaboration between the Imaging Department of a large District General Hospital and a Local Higher education College, produced a more paediatric friendly theme was created throughout clinical imaging department.

**Poster 9a**

**Pulmonary sling complex with complete tracheal rings and VSD with an unexpected ALCAPA.** Dr K Orr, Dr S Maxwell, Dr R Allen, Miss K Mcallister, Dr L Hunter

We present the case of a 6-week-old male infant with a pulmonary sling complex and complete tracheal rings, with an associated VSD and an incidental coexisting ALCAPA. To the best of our knowledge this combination of findings has not been previously reported in the literature. A systematic approach to imaging and effective multidisciplinary team working is essential in these patients in order to optimise patient management and outcomes.

**Poster 9b**

**CT imaging of a 4-month-old child with severe atypical Kawasaki disease** Dr J Wood, Dr J Davidson, Dr B Knight, Dr L Hunter, Dr G Cassels

**Background** Kawasaki disease is an acute vasculitis affecting children &lt;5 years old. Around 25% of cases are associated with coronary artery aneurysms. Patients with severe Kawasaki disease can also develop aneurysms of medium-sized arteries throughout the body. Diagnosis in children &lt;6 months old can be challenging and may result in significant delays in diagnosis. **Case Report** We present a 4-month-old infant who presented with a 2-week history of fever and lethargy. He was initially managed for suspected sepsis, but microbiology was negative. An atypical diagnosis of Kawasaki disease was made on the basis of laboratory investigations. Echocardiography confirmed presence of large left and right coronary artery aneurysms. He was commenced on intravenous immunoglobulins, steroids, and infliximab. He had episodes of bloody stools and remained hypertensive, so CT angiogram of the chest, abdomen and pelvis was performed to look for other medium sized artery aneurysms. Aneurysmal dilatation of the coronary arteries was demonstrated. Additionally, widespread aneurysms were identified in the intercostal, innominate, axillary/brachial, and left renal arteries, and at the coeliac and SMA origins. He was managed with anticoagulation and immunosuppression, and remains under rheumatology and cardiology out-patient follow up. **Conclusions** The association with Kawasaki disease and the development of coronary artery aneurysms is well known. However, our case demonstrates that widespread medium-sized artery aneurysms can occur particularly in those who present at a young age with atypical features of Kawasaki disease. Clinical suspicion should prompt early imaging of other medium sized arteries which may be affected by the vasculitic process.