Other

P-190 The role of CT in acute respiratory failure in the recruitment of ECMO

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Extra-Corporeal Membrane Oxygenation (ECMO) provides temporary life support to patients with severe but potentially reversible respiratory failure by the oxygenation of blood outside of the body. A machine pumps the patient's blood through an artificaial lung (membrane) which oxygenates the blood and removes carbon dioxide before returning it back into the body.

With conventional treatment the ventilator is adjusted to make up for the patient's reduced lung function, increasing the amount of oxygen put into the lungs by the ventilator and increasing the pressure at which it is delivered. High pressure ventilation with large amounts of oxygen can cause further injury to the lungs and prevent them from recovering. The aim of ECMO in acute respiratory failure is to allow the injured lung to recover and heal.

There are many contraindications for ECMO and with the use of Computed Tomography(CT) these can be identified by performing a scan of the body as a screening method. This aids the diagnosis of the cause of acute respiratory failure and also eliminate other intra cranial and intra abdominal pathologies.

Performing non contrast volume CT scans of the chest with high resolution reconstructions at a high and low ventilatory pressures help differentiate subtle changes in the distribution of disease in the lungs. This poster outlines the scanning techniques used and the subsequent decision pathways and considerations needed to succesfully treat patient's with acute respiratory failure.

P-191 The use of Onyx in peripheral vascular interventions: a pictorial review

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Purpose/Aim: To review potential applications of Onyx in peripheral interventional procedures and to demonstrate its advantages and limitations based on a pictorial review of cases.

Content summary: Onyx is an elastic polymer comprised of ethylene-vinyl alcohol copolymer dissolved in dimethyl sulfoxide with micronized tantalum powder. The latter provides contrast for fluoroscopic visualization.

Originally Onyx was approved for embolization of cerebral and dural vascular lesions. Potential applications for its use in peripheral vasculature have since emerged. Although no level one evidence, results of published case series are encouraging in treating various vascular lesions: arteriovenous malformations, aneurysms, false aneurysms, type II endoleak and acute hemorrhage.

Onyx is classified as a liquid, nonadhesive, nonabsorbable, permanent embolic agent and is unique compared to other embolic agents due to its non-adhesive, cohesive character allowing controlled injection with deep penetration.

A good technique, familiarity with liquid embolic agents and handling precautions are obligatory to prevent potential complications related to nontarget embolization, the microcatheter getting stuck in the target vessel, pulmonary and angiotoxicity.

The objective of this work is to discuss, through a pictorial review of cases, the indications of use of Onyx in peripheral interventional procedures and to demonstrate its advantages and limitations.

P-192 IVC filter retrieval rates at a typical district general hospital-the reality?

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There has been recent interest in IVC filter placement and their retrieval rates. Both the BSIR and SIR published results of multi-center data.

Typical removal rates being 78% and recommendations for the responsibility of retrieval to lie with the radiologist performing the IVC filter placement.

We audited 4 years of retrospective data from September 2007 to November 2011. In this time 62 patients had IVC filter placement, of which 33 were potentially retrievable filters. Only 18 out of the 33 temporary IVC filters were removed- a 54 % retrieval rate. Since a designated radiologist/radiographer has been nominated to list and recall all patients with temporary filters in situ.

A re-audit was performed between November 2011 and June 2012. This showed that a total of 14 IVC filters were sited during this time, out of which 7 were potentially retrievable. 5 out of the 7 temporary IVC filters were removed-a 71% retrieval rate. The two filters that have not been removed still fell in a retrievable time frame.

Our audit shows that IVC retrieval rates are greatly improved, when primary responsibility of removal lies with the radiologist/radiology department. However, another re-audit with more numbers will be needed to make these observations statistically significant.

P-193 Data free at the point of need

Jim Beagle; Mike Roberts

The London Clinic

The London Clinic describes data as 'the lifeblood of any hospital'. It recognises that clinicians need access to the right patient data, at the right time, in order to provide the best possible care. It also understands the consequences if, for any reason, this data isn't available.

This session will discuss the Clinic's vision for 'Data Free At The Point Of Need' and the challenges they have, and continue to face, in executing such a strategy across their organisation. In this session, the London Clinic will:

Share the forward thinking approach, adopted by The London Clinic, to managing patient and other critical data

Illustrate the importance of data interoperability as part of their strategic goal

Consider the impact of vendor neutrality in achieving their vision

Examine business continuity and disaster recovery in the context of their vision

Outline the first steps organisations should take when embarking on such a strategy

P-194 Does intravenous urography remain an accurate study in the imaging of acute renal colic in the presence of CT KUB?

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Introduction: Renal colic is a common presentation in the Emergency Department. Intravenous urogrpahy was previously the gold-standard for the imaging of acute renal colic but has since been superseded by CT KUB.

Aims: To determine if intravenous urography remains an accurate study in the imaging of acute renal colic or whether it should be replaced by CT KUB as the first-line modality within our department.

Materials and Methods: A retrospective analysis of all 108 IVUs within our department for acute renal colic during a 3 month period to see how many were conclusive for stones and how many required further supplementation with CT KUB. A comparison was made between respective IVU and CT KUB findings to assess concordance between the two modalities.

Results: IVU outcome: positive for stones 21/108 (19.4%), negative 65/108 (60.2%), inconclusive 22/108 (20.4%).

CT KUB following IVU: In-patient 18/108 (17%), within 4 weeks of discharge 13/108 (12%), Total 31/108 (29%).

Concordance between IVU and in-patient CT KUB: Agreement 12/18 (66%), Disagreement/stones missed on IVU 6/18 (33%), non stone pathology found on CT KUB not seen on IVU 4/18 (22%).

Discussion: A significant proportion of patients required a CT KUB following an inconclusive IVU. CT KUB had a greater accuracy in detecting urinary tract stones, and was able to delineate non-stone pathology missed on intravenous urography.

Conclusion(s): CT KUB is a more accurate and effective method for the evaluation of acute renal colic which will now replace intravenous urography as the first-line modality in our department.

P-195 Extraosseous uptake within the abdomen and breast on whole body bone scan: a pictorial review of interesting cases

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St Helens and Knowsley NHS Trust

Purpose: Bone scintigraphy with technetium-99m labelled diphosphonates is one of the most frequently performed radionuclide investigations. Whilst lacking specificity, its high sensitivity makes it extremely valuable for assessing a number of pathological bone conditions. Extraosseous uptake of tracer can also occur as an unexpected finding and may provide a clue to the presence of significant soft tissue pathology. Recognition is therefore important when interpreting the whole body bone scan.

Methods: During a one year period in our institution we identified a number of bone scans with significant extraosseous uptake. We illustrate a variety of interesting cases involving tracer uptake within the abdomen and breast, providing correlation with cross-sectional imaging and the relevant clinical history.

Results: Six cases of significant extraosseous uptake within the abdomen and breast were identified. Within the abdomen these included uptake within extensive omental cake, liver metastases and a paracolic metastatic soft tissue mass. Within the breast these included uptake within gynaecomastia, breast lymphoedema and apparent rib uptake actually due to recent breast sentinel node injection.

Conclusion: Whole body bone scan is a highly sensitive test which helps in the diagnostic evaluation of numerous conditions involving both bone and soft tissue. Understanding of the normal distribution of tracer within the skeleton and soft tissues, and correlation with other relevant imaging is therefore essential for any radiologist reporting bone scintigraphy to allow the correct diagnosis of pathological disease processes.

P-196 Ultrasound guided splenic biopsy; complication rates and diagnostic yield

Rebecca Johnson; Richard Hopkins

Gloucester NHS Foundation Trust

Aim: Splenic biopsy is associated with a high complication rate, particularly haemorrhage. Consequently it is not widely performed, however it can be an important diagnostic tool in isolated splenic lesion or enlargement. Literature describes this risk as ranging between 0 and 12%.
This study aimed to determine the safety and diagnostic accuracy of ultrasound guided percutaneous splenic biopsy of both focal splenic lesions and splenomegaly in a single centre.
Method: A retrospective review of our electronic database identified 23 ultrasound guided splenic biopsies performed in 23 patients between March 2007 and May 2012. Of these 13 were men, and 10 women. Their ages ranged from 23 to 82 with a mean of 59. 21 had a suspected pre-biopsy diagnosis of haematological or metastatic malignancy, and 2 of granulomatous disease such as sarcoidosis. Using our online PACS system and patient notes the frequency of diagnostic samples, and both minor and significant complication were calculated.
Outcomes: A specific diagnosis as a direct result of biopsy was reached in 74% of cases (17/23). 87% of biopsies yielded adequate tissue for analysis (20/23). Complications occurred in 22% of biopsies (n = 5). Major complication such as haemorrhage occurred in 4% (n = 1), minor complication such as pain in 18% (n = 4). Splenectomy was not necessary in any cases.
Conclusion: Splenic biopsy is a relatively safe procedure with high diagnostic yield, and is a valuable tool in the assessment of focal splenic lesions or splenomegaly in the absence of extra-splenic disease.

P-197 Assessment of technical quality of Computed Tomography Pulmonary Angiogram (CTPA)

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Basildon and Thurrock University Hospitals NHS Foundation Trust

Aims/ Objectives: To establish the causative factors responsible for indeterminate (those that are inadequate to establish a diagnosis due to technical reasons) computed tomography pulmonary angiography (CTPA) studies within our department.

Relevance/Impact: CTPA is currently the examination of choice in patients with a high clinical suspicion of PE[1]. However, patient and technical factors can result in indeterminate studies and therefore inconclusive reports[2]. Previous studies have reported the percentage of indeterminate studies to be up to 10.8% [3], with motion artifact followed by poor contrast enhancement cited as the most common causes.[3]

Outcome: The reports and images of 50 consecutive CTPA studies were reviewed.

Of the 50 examinations, 6 studies (12%) were classed as indeterminate. Of these, four (67%) were due to motion artifact from patient respiration; one (17%) was due to high noise level; one (17%) was due to streak artifact from the SVC. Other technical factors that could potentially affect the quality of a CTPA study including collimation, reconstruction algorithm, contrast enhancement of left main pulmonary artery and field of view did not lead to any indeterminate studies.

Discussion: A larger percentage of CTPA examinations were deemed indeterminate in our series (12%) than the standard stated in the literature (up to 10.8%)[3]. The majority of indeterminate studies in our study were due to motion artifact (67%), which was also the case in the study conducted by Jones et al (74%).

1. Making best use of a Department of Clinical Radiology, Guidelines for Doctors, Sixth Edition 2007, The Royal College of Radiologists, London

2. O'Dowd EL, Birchall JD Berg RJ. P260 Managing the indeterminate CT pulmonary angiogram: do we get it right? Thorax 2010; 65:A187

3. Jones SE, Wittram C. The indeterminate CT Pulmonary Angiogram: Imaging Characteristics and Patient Clinical Outcome. Radiology 2005; 237:329-337

P-198 Retrospective review of 1000 CT Urograms performed in a single centre

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Aim: To evaluate the use of CT urography in our centre.

Content: We will present the results of a retrospective review of 1000 consecutive CT Urograms performed in our centre. This includes patient demographics, study indications, representative doses compared to IVU (50 studies only) and the presence of upper tract TCC, other urinary tract malignancy or other important findings.

Relevance: CT urography has largely replaced the IVU in the investigation of haematuria and other urinary tract pathology. In our centre it is performed as 3 phase examination which means a high radiation dose, we must therefore be able to justify performing the investigation and use it in the correct patient groups.

Outcomes: 9 scans were excluded. 991 CT Urograms were performed over a 27-month period, predominantly in patients aged between 50-89yrs. The most common indications were macroscopic haematuria (474/992), microscopic haematuria (152/992) and known lower tract malignancy (87/992). 29/992 scans were reported as showing a new upper tract TCC with a further 20/992 possible new upper tract TCCs. Other new urinary tract malignancies found included RCC (15/992) and bladder malignancy (36/992). Several important incidental findings were also noted, for example ovarian malignancies and AAAs requiring treatment or surveillance.

Discussion: CT Urography is a high dose study. The pick-up rate of upper tract TCC is low but there are some advantages of CTU over IVU. We have identified specific groups of patients in which CTU is most useful.