

Relevance: Contrast enhanced CT, ultrasound and MR are now routinely widely used in the follow up of patients undergoing TACE to determine the extent of tumour necrosis and detect the presence of residual tumour, recurrence or complications like abscess formation, rupture or haemorrhage.

Outcome: In our experience, follow up imaging of patients undergoing TACE at our centre is often performed at the referring hospital. Awareness of normal imaging appearances following TACE and the early recognition of complications by radiologists enables them to guide clinicians to initiate appropriate treatment.

Discussion: TACE is increasingly becoming the mainstay for treatment of unresectable liver tumours. It has been shown to reduce tumour size, provide palliation and improve survival. The wide variety of TACE techniques contribute to different imaging appearances and consequently requires tailoring of appropriate follow up imaging modalit by the radiologist. Distinguishing normal imaging appearances from complications helps reduce unnecessary intervention and thus minimizes patient morbidity.

Clinical: GI

P-021 **The use of ultrasound scanning in the diagnosis of impalpable groin hernias**

Alvin Karsandas,

Northumbria Healthcare NHS Trust, Gateshead Health NHS Foundation Trust;

Purpose:Ultrasound scanning uses high frequency sound waves to create images of the body. It is non-invasive, does not involve ionising radiation, and is especially useful in the imaging of soft tissues. Hernias can present with persistent groin pain, but often clinical examination is normal or inconclusive. The aim of our study was to demonstrate the use of ultrasound in the diagnosis of impalpable groin hernias.

Methods:We looked at patients who presented to a single surgeon's outpatient clinic with a history suggestive of a groin hernia, but no palpable hernia found on clinical examination. Patients who presented between 1st January 2009 and 31st December 2009 were included in the study. All patients underwent ultrasound scan. Patients whose scan suggested a hernia were operated on, while those patients whose scans were normal were followed up at 6 months.

Results:Twenty nine patients underwent groin ultrasound during the study period. Sixteen of these were found to have scans suggestive of a hernia. Thirteen patients had negative scans. Of the 16 patients with positive scans, all 16 were found to have a hernia at operation. At 6 months, all patients with a negative scan were either symptom free or had an alternate diagnosis for their groin pain.

Conclusion:In the past, herniography and explorative surgery were used in the investigation of occult hernia. However this study has shown that ultrasound offers a cheap, non-invasive method of accurately diagnosing or ruling out impalpable hernias.

P-022 **The many faces of abdominal lymphomas : a pictorial review**

Vishal Bhalla; Arun Jacob;

University Hospital North Staffordshire, Stoke-on-Trent

Objective: To highlight the varied radiological appearances in abdominal lymphoma.

To discuss some of the atypical appearances and disease patterns of extra nodal disease.

Using illustrations, demonstrate some of the diagnostic challenges in this condition.

To emphasize the need for a multi-modality approach in investigating and monitoring this disease process.

Content: This pictorial essay is divided anatomically and each site of involvement is discussed separately. Using a wide range of ultrasound, MPR CT and MRI images, we demonstrate involvement of the hepatobiliary system, gastrointestinal and genitourinary tracts. We also describe some less common disease patterns including involvement of the peritoneum and anterior abdominal wall.

In a separate section, we discuss some of the diagnostic dilemmas, in a case discussion format. The role of MRI and PET CT as problem solving tools are also illustrated.

Relevance: The gastrointestinal tract is a predominant site of extra nodal non-Hodgkin's lymphomas. Although primary NHLs of the GI tract account for 1-4% of gastrointestinal malignancies, secondary GI involvement is common accounting for 10% of patients with limited stage NHL at the time of diagnosis and up to 60% of those dying from advanced NHL.

Discussion: Abdominal lymphomas though less common have serious management and prognostic implications when compared to other diagnoses. Imaging features can be varied and a multidisciplinary approach to diagnosis and surveillance is vital.

Our review is intended as an overview of abdominal lymphomas, which may be of interest to radiographers, trainee radiologists and clinicians alike

P-023 A pictorial review of three cases of amyand's hernia – MDCT appearances

Amjad Mohammed, Sarah Swift

Leeds Teaching Hospital NHS Trust, Leeds. ; St.James's University Hospital, Leeds

Aims/ Objectives: To know the CT appearances of Amyand's hernia and the features of its subtypes.

Content: A poster of the "CT appearances of the Amyand's hernia - a pictorial review of three cases".

Relevance/Impact: Amyand's hernia is a rare type of inguinal hernia in which vermiform appendix herniates. Only 1% of hernia surgeries find the appendix within the hernia sac, whilst only 0.1 % is diagnosed appendicitis in the hernia sac. There is slight male predominance and most female patients are post-menopausal with true femoral hernias. Previously Amyand's hernia is almost always diagnosed intra-operatively. With increasing pre-operative usage of CT, this condition is also being frequently encountered on CT.

Outcomes: A pictorial review of at least three different cases of Amyand's hernia, including a normal appendix, an inflamed appendix and a recurrent inguinal hernia containing a normal appendix has been shown. The different sub-types of Amyand's hernia and its CT features are also described.

Discussion: Although Amyand's hernia is rare, it's important to know the CT appearances and the features of its subtypes as its classification determines the subsequent management.

P-024 Computed tomographic oesophagography for suspected oesophageal rupture: our local experience

Jamshaid Anwar, Ian McCrea;

West of Scotland Radiology Training Scheme; Victoria Infirmary, Glasgow;

Aims: This poster aims to describe our local experience of using a CT oesophagography technique in the evaluation of suspected oesophageal rupture.

Content: Oesophageal rupture is an emergency presentation that is associated with significant mortality. It requires urgent investigation to allow timely diagnosis and treatment with a view to improving survival. Traditionally the radiological diagnostic test of choice has been fluoroscopic oesophagography. A CT oesophagography technique for suspected oesophageal perforation has been described previously in the literature and can offer possible advantages over fluoroscopic oesophagography. This poster presents our local experience of using CT oesophagography with a review of the technique and the published literature.

Outcomes and Discussion: We have found this technique useful in investigating suspected oesophageal ruptures in an emergent setting . As previously documented in the literature: employing this technique may save time, avoid mobilizing potentially critically-ill patients between CT and fluoroscopy rooms and obviate the need for a radiologist to be physically present during the investigation allowing for a greater use of teleradiology reporting in a multi-site institution. However, issues of radiation dose and cost also need to be carefully considered.

P-025 Radiological patterns of systemic disease affecting the spleen

*David Little; Isabel Laurence; Dominic Fay; Sanjay Gandhi;
North Bristol NHS Trust; ; Royal United Hospital, Bath;*

Purpose: Pathology within the spleen detected by imaging can be the first indicator of disease. The pattern of abnormality can be used to generate a differential diagnosis and guide further investigation and management.

Discussion: We present a series of cases including splenic metastases, splenic infarcts with aortic occlusion, splenic emboli due to splenic artery aneurysm, renal and splenic infarction secondary to cardiac thrombus and splenic infarction due to splenic vein obstruction by a pancreatic carcinoma. Examples of splenic artery aneurysms treated with various endovascular techniques are also provided. A brief remainder of splenic anatomy, blood supply and function is given.

Conclusion: This pictorial review highlights the importance of splenic interrogation when imaging the abdomen, and serves to remind the audience of the appearances of splenic abnormality in systemic disease.

P-026 Pancreatic transplant complications: imaging assessment and clinical outcomes

*Shema Hameed, Anoma Lalani Dias; Chris Harvey; Steven Moser;
Imperial College NHS Trust; Hammersmith Hospital,*

Aims: Transplant imaging has become a fundamental tool in the post-operative assessment of transplant grafts, however this can prove challenging and should always be evaluated alongside an accurate clinical assessment. We aim to review: 1. The variations in surgical anatomy commonly utilised for pancreatic transplantation. 2. The multimodality imaging appearances of the normal pancreatic transplant, including ultrasound, CT, MRI and angiography. 3. The imaging appearances of a spectrum of commonly and rarely encountered pancreatic transplant complications.

Content: An illustrated guide of the surgical anatomy involved in pancreatic transplantation, with brief descriptions of the various different types of transplantations currently used. A pictorial review of the multimodality imaging appearances of post-operative complications including graft rejection, pancreatitis, arterial and venous thromboses with graft infarction, pseudoaneurysms, arteriovenous fistulae, exocrine leaks, haemorrhage, fluid collections, abscesses and anastomotic small bowel obstruction.

Discussion: Pancreatic transplantation has become a well-established treatment for diabetes that has become increasingly utilised worldwide. However it is a significant procedure with potential risks. Prompt diagnosis of post-operative complications is vital for graft salvage, and imaging has become a central requirement in this group of patients. A multi-modality approach is encouraged, with accurate clinical correlation due to the multiple diagnostic challenges encountered. We will discuss here the various imaging tools available for graft assessment, including ultrasound with Doppler and microbubble contrast, multi-phase CT, MR and MRA, and angiography, with illustrations of a spectrum of surgical and non-surgical complications.

P-027 MR enterography reduces dose in patients undergoing small bowel imaging in Crohn's disease

*Rebecca Dixon; Joseph Hamill; Mark Robinson;
Department of Radiology, Royal Gwent Hospital*

Aims: To calculate the reduction in radiation dose achieved by using MR Enterography (MRE) in place of CT Enterography (CTE) or Barium Follow Through (BFT).

Content: Assessment of the number of MR Enterograms carried out on patients with proven or suspected Crohn's disease over a 3 year period in a DGH and calculating the radiation dose that they would have received from CTE or BFT.

Relevance Impact: Crohn's is a chronic disease affecting a young patient population which will often require multiple examinations for diagnosis, assessment of extraluminal complications and response to therapy. MRE is a newly established technique which is both accurate and radiation free.

Outcomes: MRE was carried out in 281 patients over 3 years, resulting in 298 examinations. 12 patients underwent multiple MRE studies. This resulted in a potential radiation dose reduction per patient of 8 mSv per examination compared with CTE and 3 mSv with BFT. 1 patient underwent 6 MRE studies during the study period with a potential dose saving of approximately 48 mSv.

Discussion: MRE is an excellent imaging modality for the assessment of Crohn's disease and its complications. MRE should be considered as a primary imaging tool for use in young patients with suspected or proven Crohn's disease to reduce their lifetime cancer risk.

P-028 **Understanding bariatric surgery: what a radiologist needs to know**

Anish Patel, Peter Chapman

Royal Devon and Exeter Hospital

Introduction: Obesity is now a problem, which has reached epidemic proportions in the UK. In conjunction with this increase there is an increase in the number of patients seeking a surgical solution.

There are a variety of surgical procedures that are used and radiology plays a crucial role in the follow up of these patients especially during the investigation of post operative complications. Many general radiologists are unfamiliar with the nature of the procedures and their appearances following these procedures.

This exhibit aims to give the general radiologist a better understanding of the anatomy of the commonly performed bariatric procedures.

Methods/Results: The anatomical appearances of the following commonly performed procedures will be discussed and schematically depicted:

Roux en Y gastric bypass

Adjustable surgical banding

Sleeve gastrectomy

Biliopancreatic diversion with duodenal switch

Discussion: The incidence of bariatric procedures is ever increasing as a result of rising obesity levels. Radiology is critically important in the management these patients especially in the immediate post operative period and in the diagnosis of potential complications.

The general radiologist should have an understanding of the commonly performed bariatric procedures.

Understanding the normal and abnormal appearances are fundamental in managing and optimizing the recovery in this challenging group of patients.

P-029 **CT IVU decide...**

Gavin Clague, Jennifer Rowlands; Janice Ash-Miles; Jes Green;

Gloucestershire Hospitals NHS Trust; University Hospitals Bristol;

Objectives: To establish the techniques used during Computed Tomography Intravenous Urography for the investigation of haematuria across our deanery in order to determine whether there are common themes which can be used to recommend best practice.

Content: This was a multi-centre study during which questionnaires were sent to Uroradiologists in seven local hospitals. Specific questions related to phase of imaging, bolus technique, dose parameters, hydration, diuretic administration, use of compression and variation depending on known diagnosis.

We received replies from six institutions and found that all perform unenhanced imaging of the kidneys ureters and bladder during the first phase. One institution administers frusemide prior to contrast injection, 4 administered oral hydration within 30 minutes prior, 4 performed combined nephrographic and excretory phase imaging with split boluses of contrast whilst 2 performed nephrographic imaging of the kidneys followed by excretory imaging of the kidneys, ureters and bladder.

One centre still prefers traditional IVU if the patient is young, 2 for stone follow up and 1 out of hours. If known TCC, one centre also scans the chest.

For stone disease all perform unenhanced imaging only.

Relevance/Impact/Outcomes: The CT IVU is fast replacing the traditional IVU in most departments placing a large burden on resources. In the absence of a universal technique each institution needs to establish which methods work best for them. We have provided some examples.

Clinical: Uroradiology

P-030 Incidental urological findings on CT colonography

*Mark Hawkins; Stephen Lyen; Andy Planner;
Great Western Hospital*

Aims/Objectives

- 1) To illustrate the range of incidental urological findings encountered on CT colonoscopy in a symptomatic population.
- 2) To discuss the features that may help to distinguish between pathologies.
- 3) To discuss appropriate radiological management and further imaging where appropriate.

Content: We reviewed 525 reports from CT colonography examinations performed between Jan 2010 and June 2011. Images of clinically significant and unusual urological lesions were collected for this pictorial review and where possible comparison was made to further imaging, operative and endoscopic findings.

Relevance/Impact: There has been an increase in the use of CT colonography and in the investigation of symptomatic patients with lower GI symptoms. The major difference with CT techniques compared to traditional methods of investigation is the detection of extra colonic findings. The majority of patients with incidental urological findings will require further medical input. We compare our findings to the current literature and describe and illustrate the range of pathologies encountered as well as demonstrating features that may help to distinguish between pathologies.

Outcomes: Of the 525 cases, significant extracolonic urological findings included: Renal cell carcinoma (1), bladder carcinoma (3), TCC kidney (1), renal lymphoma (1), xanthogranulomatous pyelonephritis (1), PUJ obstruction(1) and bilateral duplex kidneys (1) and locally advanced prostate cancer(1)

Discussion: Urological findings are common findings in CT colonography, whether incidental or mimicking the non-specific symptoms of colon cancer. Careful review of the urinary tract can often unearth a variety of conditions which have an impact on patient management.

P-031 Solid renal masses – diagnostic correlation of CT findings and pathology post partial nephrectomy. a single institution, 2.5yr retrospective study

*Ayokunle Ogunqbemi; Miles Walkden; Navin Ramachandran;
UCLH Department of Radiology; Whittington Hospitals NHS Trust;*

Aims/Objectives: To determine our sensitivity and false positive rate for CT suspected primary renal malignancy. Identify imaging characteristics of pathologies most often result in false positives.

Content: CT reports were retrospectively reviewed on all patients who underwent a partial nephrectomy for suspected primary renal malignancy at our institution from 09/08/2006 to 09/01/2009. Comparison was subsequently made to the pathology report.

Relevance/Impact: The diagnosis of suspicious renal masses is rising with increasing use of abdominal CT scanning. Most CT suspected malignancies are currently managed by surgical resection with the attendant risks. False positives may lead to unnecessary surgery.

Outcomes: Total of 69 patients.

55 positive on pathology, 14 benign.

CT imaging - 65 diagnosed as malignant, 4 as non-malignant (decision to excise was made subsequently at MDT).