

treatment which were discussed in only 39% of cases. Overall, the results did not meet the standard RCR criteria of 95%.

**Conclusion:** The results indicate that the consent process requires significant improvement in various aspects in order to achieve the standard. Discussion about the issues leading to inadequate consent and knowledge about local and national consent policies are essential. Compulsory consent training will become part of the core induction for staff who obtain consent. Senior help, intranet and internet resources and patient information leaflets will be used to ensure informed consent is achieved routinely.

## Clinical: Uroradiology; gynaecology; obstetrics

### P-077 A retrospective analysis of 991 CT urograms to describe the prevalence of clinically significant extra-urinary findings

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**Aim:** The purpose of this study is to describe the prevalence of clinically significant extra-urinary findings on CT urograms.

**Content:** The poster will present a retrospective analysis of 991 consecutive CT Urograms conducted between February 2010 and May 2012 within a busy teaching hospital. Findings are categorised according to clinical significance using a previously described system to facilitate comparison with similar studies. Case examples will be presented and described to illustrate common clinically important findings.

**Relevance:** CT urography is a specialised investigation primarily performed to detect upper renal tract urothelial malignancies in patients presenting with haematuria. Significant incidental extra-urinary findings are common and awareness of their prevalence and categorisation aids reporting and on-going management of these patients.

**Outcomes:** Clinically significant extra-urinary findings requiring further investigation or management were reported in 94 of 991 CT urograms; a prevalence of 9.5%.

**Discussion:** Findings were categorised as being highly significant if they involved new appearances suggestive of malignancy or metastatic disease or acute conditions requiring immediate intervention such as infective or inflammatory processes. The most commonly reported conditions were abdominal or pelvic lymph nodes greater than 1cm and abdominal aortic aneurysm greater than 3cm. In many of the other cases, common incidental findings were gallstones, diverticulosis, herniae and pleural plaques suggesting previous asbestos exposure. These pathologies potentially have clinical relevance for the future management of these patients and are important to document within the patient record.

### P-078 Krukenberg cases- a review of radio pathological correlation

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North East Lincolnshire; Manchester Radiology

**Aims/Objectives.** Awareness that evaluation of Bilateral ovarian tumours will require consideration of the Gastrointestinal and mammary system for a primary lesion.

**Content.** Classically Krukenberg tumours have been described as metastatic bilateral ovarian adenocarcinoma. However, with advances in imaging leading to early malignancy detection in gynaecologic as well as other organ systems, it is important to remember that patients presenting with bilateral ovarian tumors could be metastatic and imaging can help in establishing the source. In a review of a number of cases, we look at a variety of radiological presentations and the pathological diagnoses: ranging from classic presentations and additional subtypes including Gastrointestinal Stromal Tumors.

**Relevance:** As a clinical guide to radiologists and clinicians, an awareness that bilateral ovarian tumors should have metastasis considered as a differential. Other clues in the clinical history and diagnostic findings should raise the alert for further cross sectional investigation.

**Conclusion:** With increases in different types of Gastrointestinal and mammary tumors, the classical definition of Krukenberg tumor is now embracing wider pathologic variants giving the known radiological picture

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**P-079 Retrospective audit of complication rate and diagnostic yield from ultrasound guided renal biopsy**

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*Peninsula Radiology Academy*

Renal biopsy is performed to achieve a histopathological diagnosis in renal disease and solid renal masses. Ultrasound enhances biopsy technique by permitting real time visualisation of needle placement.

This retrospective audit was performed to determine the complication rate and diagnostic yield of ultrasound guided renal biopsies in one centre.

154 patients over a consecutive ten month period were analysed. 91 biopsies were performed on native kidneys and 63 on renal allografts. Gold standards were identified from four peer reviewed published research studies.

All biopsies were performed using an automatic biopsy device. Complications were identified from patient notes. Biopsies were classified as adequate if the pathology report stated a clear diagnosis or the biopsy revealed ten or more glomeruli.

The overall complication rate was 5.8%. Major complications (haemorrhage) occurred in two patients (1.3%). 7 patients (4.5%) exhibited minor complications. Adequacy of biopsy tissue was achieved in 94.8% of cases.

This audit demonstrated an overall complication rate comparable with published data (range 3.36% - 12.2%). The rates of major haemorrhage and minor complications were also within range of published standards (0.36%-2.7% and 1.04% to 9.5% respectively). Adequacy of biopsy samples was slightly less than the standard rates (95.3%-98.8%).

Renal biopsy performed in this unit exhibits a risk comparable with published data. The information gathered is informative in setting local standards and advising patients regarding risk. The data and accompanying literature review provide a valuable summary of good practice which will be informative for trainee and senior radiologists alike, ultimately enhancing patient care.

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**P-080 Imaging the acute scrotum**

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Ultrasound evaluation is the imaging investigation of choice for acute scrotal pathology and is an increasingly common request for the on-call radiologist. The superficial location of the scrotal contents permits the use of high-frequency linear array transducers resulting in high resolution images and enabling assessment of scrotal blood flow using colour and spectral Doppler techniques.

Ultrasound is frequently requested in cases of suspected torsion of the spermatic cord as the consequences of incorrect diagnosis, particularly in young men are significant; however, imaging must never delay surgical exploration where clinical findings are typical. In more equivocal cases, although grey scale features may be normal or indistinguishable from epididymitis, Doppler ultrasound can be helpful provided the clinician and radiologist are aware of the limitations of this examination and the difficulty in diagnosing incomplete or intermittent torsion. Ultrasound can also be useful in identifying complications such as testicular abscess formation or ischaemia.

Ultrasound findings may prompt urgent surgical intervention and improve outcome such as in identifying testicular rupture after blunt trauma. Similarly, characteristic ultrasound appearances of Fournier's gangrene may precede clinical findings of crepitus allowing timely debridement. Unnecessary surgery may be prevented in cases where acute idiopathic scrotal oedema is identified.

The practitioner should be mindful that sometimes testicular tumours present with acute scrotal symptoms therefore differentiation between inflammation and malignancy is essential.

This poster aims to familiarise the on-call radiologist with normal testicular anatomy, scan techniques, and sonographic appearances of different acute pathologies presenting with scrotal pain and swelling.

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**P-081 Ovarian cancer imaging? by guidelines**

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*Pennine Acute Hospitals NHS Trust*

Extensive guidelines exist regarding imaging in patients suspected with ovarian cancer. NICE recommends ultrasound scan as initial investigation followed by CT scan for staging. MRI-scans are not routinely indicated for assessment. The Royal College of Obstetrics and Gynaecology recommend transvaginal ultrasound due to their increased sensitivity. Regional Cancer Network guidelines recommend CT reports be in line with the FIGO staging system and also mentioning hydronephrosis.

The aim of our retrospective audit was to determine whether the above guidelines were being followed at our Trust in patients suspected with ovarian cancer.

Data was obtained from Regional Cancer Registry and information collected from the hospital letters system, and PACS/CRIS.

There were 29 new cases of ovarian cancer in 2011 with 13 patients suspected of ovarian cancer at presentation. 12 patients had ultrasound scan initially; 2 were transvaginal and 1 patient had CT as first investigation. 8 patients had MRI-scan as second investigation to characterise ovarian masses detected on ultrasound scan. 4 (31%) patients had investigations as per recommendation (US-CT+/-MRI-scan) and 6 patients had ultrasound initially, then MRI (for mass characterisation) followed by CT scan, which would also be as per guidelines. Guidance was followed in 77% of patients. 26 CT-scans were performed for 29 patients, 17 reports (65%) met the reporting criteria.

Though the imaging guidance was followed in a good proportion of patients, there is scope for improvement. We plan to present this data (along with other clinical parameters studied) in a Gynaecology Forum to facilitate further compliance with guidelines.

**P-082 Transvaginal ultrasound: improving performance and attitudes of radiology trainees**

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The 'ability to perform and report abdominal and pelvic ultrasound of common presentations' forms part of the Core Uro-gynaecological Training of the Royal College of Radiologists; as specified in the 'Specialty Training Curriculum for Clinical Radiology', updated May 2012.

The purpose of this study is to determine the current level of training, as well as the attitudes and perception of the Registrar group at our hospital regarding performing Transvaginal Ultrasound (TVUS); both within the working day as well as at weekends and on-call.

3960 TVUS scans were performed in the Ultrasound Department of our hospital in 2011, all of which were performed during normal working hours.

There are currently 43 Radiology Registrars from year 2 to 5 in our training scheme. Our study population all take part in an on-call rota, but have varied levels of capability and experience using TVUS; as well as wide-ranging subspecialty interests. These attributes may affect the willingness and ability of trainees to undertake what would potentially be the most appropriate investigation.

Using a questionnaire at the start of the study and by repeating the same questionnaire following 3 months of directed training in TVUS on a computerised phantom model, we intend to investigate attitudes towards performing this essential, but potentially challenging examination, and hope to identify any changes following specific training.

**P-083 Renal tumours - a wake up call**

[Samantha Anderson](#); [Glynis Wivell](#)

*Norfolk and Norwich University Health Care Trust*

**Aims/ Objectives:** Feedback at MDT's showed that we were missing renal tumours at primary imaging. We undertook a retrospective audit of our practice.

**Content:** Using data from the cancer registry we reviewed all renal cancers that presented to the trust from January to July 2012. We looked at how these patients were imaged. Of the 73 cases, 40 had ultrasound as their primary intervention. 11 of the 40 tumours (27.5%) were missed on ultrasound. These cases were evaluated

- 5 were renal cell carcinoma
- 6 were transitional cell carcinoma
- The patients had been scanned by consultants, specialty trainees and sonographers
- 15 patients were from one-stop clinics but 25 were not
- The stored images were reviewed to evaluate technique used.
- We looked for difficulty of imaging noted at time of scan.

**Relevance/Impact**

- We were unable to find any other data series for comparison
- The Guidelines on Renal Cell Carcinoma from the European Association of Urology (2010) states that  
'More than 50% of adult renal tumours are detected when using ultrasound'

**Outcomes**

- We will use our findings as an educational tool for all groups of staff
- We will re-audit in 12 months

**Discussion:** We were surprised at the findings and the fact that we were unable to find any other data series for comparison. These figures will be used as a baseline, further audit following education is necessary.

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**P-084 Further exploration of MRI techniques for liver T1rho quantification**

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**Introduction:** T1rho MRI can detect liver fibrosis, and it is feasible to obtain consistent liver T1rho for humans. Dixon et al. (Magn Reson Med 1996; 36:90-4) proposed a method to reduce sensitivity to B0 field inhomogeneity in T1rho imaging. In this study, we compared the images scanned by rotary-echo spin-lock pulse method (sequence 1) and the pulse modified according to Dixon method (sequence 2).

**Material and Methods:** 29 healthy volunteers were included. MRI was performed on 3T. Spin-lock frequency was 500 Hz and the spin-lock times of 1, 20, and 50 ms were used. When NSA=2, the breath-holding duration for one slice acquisition was 8sec. If NSA=1, the duration was 2sec. With ROI measurement, T1rho was quantified by setting ROIs on liver parenchyma region. With histogram analysis the T1rho value for the highest peak was recorded. Results: Liver T1rho values obtained by sequence 1 (NSA=2) and sequence 2 (NSA=2) showed similar values, i.e. 43.1±2.1 ms vs 43.5±2.5 ms (p=0.7445) respectively. For the 6 volunteers scanned with both sequences in one session, intraclass correlation coefficient (ICC) was 0.939. Sequence 2 did not increase the scanning success rate. For the 9 subjects scanned by sequence 2 with both NSA=2 and NSA=1 during one session, the ICC was 0.274. ROI method and histogram method for T1rho measurement had an ICC of 0.901.

**Conclusion:** With Dixon method the rate of artifacts occurring did not decrease. NSA=1 did not offer satisfactory SNA. The histogram measurement and manual ROI measurement provided similar liver T1rho value.

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