

## Commentary

Interestingly all the 4 chosen article for tis edition of Highlights come from Clinical Radiology.

The first two are related. Prostate cancer affects a large number of men in their senior years. Multiparametric MR imaging along with trans rectal biopsy remains the standard of care in the management of these patients. Because of the age of incidence a considerable number of these men also have cardiovascular disease for which they are taking either anticoagulation or anti platelet agents. In addition there is an increasing trend of obtaining at least 8 if not more core at a TRUS biopsy. This combination makes radiologists nervous when planning the biopsy and quite often the procedure is delayed while the patient stops the antiplatelet agents. Not only does this delay care it increases cardiovascular morbidity as the therapeutic levels of these drugs bottom out. In this context Chowdhury et al's paper makes an important contribution. They demonstrate that a 10 core TRUS biopsy carried out without stopping the anticoagulation or low dose aspirin imparts no additional risk to the patient. This should be reassuring to the radiologists and the patients.

The other question that often vexes radiologists is the short duration between the biopsy and the following MR. Because of the economics of the situation most oncologists and/or urologists prefer to have a histological proof of malignancy prior to embarking on additional imaging and staging. Radiologists have often felt that this compromises the MR exam as the prostate is contaminated by haemorrhage making accurate evaluation difficult. Rosenkrantz et al also put this apprehension to rest. In their study (albeit with a smallish sample size) they did not find any significant difficulty in the detection or the quantification of tumour.

67 years after independence we always look to the West for validating and setting standards. (I am not going to debate the merit of this as it is way beyond the scope of this discussion, however we need to think and reflect on this.) It is disturbing then to discover that some basic standards don't exist even in the National Health Service in the UK. Gray et al found wide variations in practice around the decontamination of trans vaginal ultrasound probes. They were appalled by what they discovered and recommend the development of a standard guideline for this. I wonder what their reaction will be if they were to do the same study in Pakistan!!

Ludwig Georg Courvoisier (1843-1918) was a Swiss surgeon. He introduced the concept that lead to the description of the Courvoisier's sign, which states, "in a jaundiced patient with a palpable gallbladder, the underlying cause is unlikely to be gallstones". This sign has been drummed into countless generations of medical students all over the world. Murphy et al prove that careful clinical observations stand the test of time. Using Magnetic resonance cholangiopancreatography (MRCP) they were able to demonstrate that Courvoisier's sign is as relevant today when reading MRCPs as it was at the end of the Nineteenth century.

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## Clinical Radiology 2012; 67(12):64-70

R. Chowdhury, A. Abbas, S. Idriz, A. Hoy, E.E. Rutherford, J.M. Smart

## Should warfarin or aspirin be stopped prior to prostate biopsy? An analysis of bleeding complications related to increasing sample number regimes

**AIM:** To determine whether patients undergoing transrectal ultrasound (TRUS)-guided prostate biopsy with increased sampling numbers are more likely to experience bleeding complications and whether

warfarin or low-dose aspirin are independent risk factors.

**MATERIALS AND METHODS:** 930 consecutive

patients with suspected prostatic cancer were followed up after biopsy. Warfarin/low-dose aspirin was not stopped prior to the procedure. An eight to 10 sample regime TRUS-guided prostate biopsy was performed and patients were offered a questionnaire to complete 10 days after the procedure, to determine any immediate or delayed bleeding complications.

**RESULTS:** 902 patients returned completed questionnaires. 579 (64.2%) underwent eight core biopsies, 47 (5.2%) underwent nine, and 276 (30.6%) underwent 10. 68 were taking warfarin [mean international normalized ratio (INR) = 2.5], 216 were taking low-dose aspirin, one was taking both, and 617 were taking neither. 27.9% of those on warfarin and 33.8% of those on aspirin experienced haematuria. 37% of those on no blood-thinning medication experienced haematuria. 13.2% of those on warfarin and 14.4% of those on aspirin experienced rectal bleeding. 11.5% of those on no blood-thinning

medication experienced rectal bleeding. 7.4% of those on warfarin and 12% of those on aspirin experienced haematospermia. 13.8% of those on neither experienced haematospermia. Regression analysis showed a significant association between increasing sampling number and occurrence of all bleeding complication types. There was no significant association between minor bleeding complications and warfarin use; however, there was a significant association between minor bleeding complications and low-dose aspirin use. There was no severe bleeding complication.

**CONCLUSION:** There is an increased risk of bleeding complications following TRUS-guided prostate biopsy with increased sampling numbers but these are minor. There is also an increased risk with low-dose aspirin use; however, there is no increased risk of bleeding complications with warfarin use. These results suggest that up to 10 cores during prostate biopsy remains acceptable safe practice and cessation of warfarin and low-dose aspirin is usually not necessary.

## Clinical Radiology 2012; 67(12):83-90

A.B. Rosenkrantz, T.C. Mussi, d, N. Hindman, R.P. Lim, M.X. Kong, J.S. Babb, J. Melamed, S.S. Taneja

### Impact of delay after biopsy and post-biopsy haemorrhage on prostate cancer tumour detection using multi-parametric MRI: A multi-reader study

**AIM:** To assess impact of haemorrhage and delay after biopsy on prostate tumour detection using multi-parametric (MP) magnetic resonance imaging (MRI) assessment.

**MATERIALS AND METHODS:** Forty-four patients underwent prostate MRI at 1.5 T using a pelvic phased-array coil, including T1-weighted imaging (T1WI), T2-weighted imaging (T2WI), diffusion-weighted imaging (DWI), and dynamic contrast-enhanced (DCE) imaging, before prostatectomy. Three radiologists independently reviewed images during four sessions [T2WI, DWI, DCE, and all parameters combined (MP-MRI)] to assess for tumour in each sextant. In a separate session, readers reviewed T1WI to score the extent of haemorrhage per sextant. Accuracy was assessed using logistic regression for correlated data.

**RESULTS:** There was no significant difference in accuracy between readers for any session ( $p \geq 0.166$ ),

and results were averaged across the three readers for remaining comparisons. Accuracy was significantly greater for MP-MRI than for any parameter alone ( $p \leq 0.020$ ). For T2WI alone, there was a trend toward decreased sensitivity in sextants with extensive haemorrhage ( $p = 0.072$ ). However, accuracy, sensitivity, and specificity were otherwise similar for sextants with and without extensive haemorrhage for all sessions ( $p = 0.192-0.934$ ). No session showed a significant improvement in accuracy, sensitivity, or specificity in cases with delay after biopsy of over 4 weeks compared with shorter delay.

**CONCLUSION:** Extensive haemorrhage and short delay after biopsy did not negatively impact accuracy for tumour detection using MP-MRI. Further studies using MP-MRI protocols and interpretation schemes from other institutions are required to confirm these observations

## Clinical Radiology 2012; 67(11):1069-77

R.A. Gray, , P.L. Williams, P.A. Dubbins, P.J. Jenks

### Decontamination of transvaginal ultrasound probes: Review of national practice and need for national guidelines

**AIM:** To determine the national practice of transvaginal ultrasound (TVUS) probe decontamination in English hospitals and to develop recommendations for guidance.

**MATERIALS AND METHODS:** A literature review was undertaken to clarify best practice and evaluate methods of decontamination of TVUS probes. A questionnaire was developed to ascertain TVUS probe decontamination programmes in current use within English hospitals. This was sent to ultrasound leads of 100 English hospitals; 68 hospitals responded.

**RESULTS:** There is a wide variation in TVUS probe decontamination across English hospitals. Although the majority of respondents (87%, 59/68) reported

having clear and practical written guidelines for TVUS decontamination, the frequency, methods, and types of decontamination solutions utilized were widely variable and none meet the standards required to achieve high-level disinfection.

**CONCLUSION:** While the decontamination of other endoluminal medical devices (e.g., flexible endoscopes) is well defined and regulated, the decontamination of TVUS probes has no such guidance. There appears to be incomplete understanding of the level of risk posed by TVUS probes, and in some cases, this has resulted in highly questionable practices regarding TVUS hygiene. There is an urgent need to develop evidence-based national guidance for TVUS probe decontamination.

## Clinical Radiology 2012; 67(11):27-30

K. Murphy, P. McLaughlin, b, B.R. O'Connor, b, M. Breen, b, C. O'Suilleabháin, P. MacEneaney, M.M. Maher,

### Does Courvoisier's sign stand the test of time?

**AIM:** To investigate the validity of Courvoisier's sign, in the age of cross-sectional imaging and image analysis software by objectively measuring gallbladder volumes at magnetic resonance cholangiopancreatography (MRCP) in patients with and without biliary obstruction and to assess whether gallbladder volume is more significantly increased in patients with gallstone-related rather than non gallstone related biliary obstruction.

**MATERIALS AND METHODS:** All MRCP investigations that were performed at a tertiary hepatobiliary centre over a 2-year period were analysed. The information recorded included the presence or absence of gallbladder stones as well as the presence and type of common bile duct (CBD) disease. Gallbladder volume was calculated from MRCP studies using image analysis software.

**RESULTS:** Three hundred and ninety-four of 645 examined MRCPs (61.1%) were eligible for analysis. A statistically significant difference in mean gallbladder volume existed between the summated obstructive and non-obstructive groups ( $p < 0.001$ ). In addition, a significant difference existed in mean gallbladder volume between those with CBD stones and non-gallstone CBD obstruction ( $p = 0.03$ ).

**CONCLUSION:** A significant difference was observed in gallbladder volumes in the group with biliary obstruction from choledocholithiasis compared with the group with biliary obstruction from other causes. Thus, objective measurement of gallbladder volume from modern cross-sectional imaging studies appears to validate Courvoisier's sign as a valuable clinical sign, which could be applied to modern imaging studies in distinguishing different causes of biliary obstruction in the jaundiced patient.