

Commentary

I have chosen four very different but equally interesting articles from the December issues of Clinical Radiology and European Radiology as the highlights of the recent radiology literature.

First of these is on an issue that is routinely faced by radiologists working with MR in Pakistan. Trying to differentiate early vertebral osteomyelitis from background changes in degenerative spines. Dunbar et al suggest that this differentiation is difficult. In an endemic area like Pakistan where tuberculosis is rife the rules of the game are very different from western practices, however we continue to use these western practices as gold standards.

The second article from Gosling et al questions the entire basis of calculating radiation doses in cardiac CT scans. If these assertions are validated and adopted the so-called sub milli sievert coronary CTA will have to be rethought.

Management of cancer patient is becoming more and more algorithmic. Data strongly supports this approach and patients managed according to established protocols have better outcomes. European Society of Urogenital Radiology (better known for its contrast media guidelines) has published the guidelines for ovarian cancer imaging. They recommend CT as the best modality in this regard.

The final selection again relates to every day radiology practice. The yield of Fine Needle Aspiration Cytology is generally poor. At least at our institution there is an increasing trend to obtain tissue biopsies using cutting needles. In the head and neck this is viewed as risky practice. Pfeiffer et al reinforce this view and advise caution when using cutting needles in the head and neck especially after surgery or radiotherapy.

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Clinical Radiology December 2010, 65(12):974-81

J.A.T. Dunbar, J.A.T. Sandoe, A.S. Rao, D.W. Crimmins, W. Baig, J.J. Rankine,

The MRI appearances of early vertebral osteomyelitis and discitis

AIM: To describe the magnetic resonance imaging (MRI) appearances in patients with a clinical history suggestive of vertebral osteomyelitis and discitis who underwent MRI very early in their clinical course.

MATERIALS AND METHODS: A retrospective review of the database of spinal infections from a spinal microbiological liaison team was performed over a 2 year period to identify cases with clinical features suggestive of spinal infection and an MRI that did not show features typical of vertebral osteomyelitis and discitis. All patients had positive microbiology and a

follow up MRI showing typical features of spinal infection.

RESULTS: In four cases the features typical of spinal infection were not evident at the initial MRI. In three cases there was very subtle endplate oedema associated with disc degeneration, which was interpreted as Modic type I degenerative endplate change. Intravenous antibiotic therapy was continued prior to repeat MRI examinations. The mean time to the repeat examination was 17 days with a range of 8–22 days. The second examinations clearly

demonstrated vertebral osteomyelitis and discitis.
CONCLUSION: Although MRI is the imaging method of choice for vertebral osteomyelitis and discitis in the

early stages, it may show subtle, non-specific endplate subchondral changes; a repeat examination may be required to show the typical features.

Clinical Radiology December 2010, 65(12):1013-7

O. Gosling, R. Loader, P. Venables, N. Rowles, G. Morgan-Hughes, C. Roobottom

Cardiac CT: are we underestimating the dose? A radiation dose study utilizing the 2007 ICRP tissue weighting factors and a cardiac specific scan volume

AIM: To calculate the effective dose from cardiac multidetector computed tomography (MDCT) using a computer-based model utilizing the latest International Commission on Radiation Protection (ICRP) 103 tissue-weighting factors (2007), to compare this dose with those calculated with previously published chest conversion factors and to produce a conversion factor specific for cardiac MDCT.

MATERIALS AND METHODS: An observational study of 152 patients attending for cardiac MDCT as part of their usual clinical care in a university teaching hospital. The dose for each examination was calculated using the computer-based anthropomorphic ImPACT model (the imaging performance assessment of CT scanners)

and this was compared with the dose derived from the dose-length product (DLP) and a chest conversion factor.

RESULTS: The median effective dose calculated using the ImPACT calculator (4.5 mSv) was significantly higher than the doses calculated with the chest conversion factors (2.2–3 mSv).

CONCLUSION: The use of chest conversion factors significantly underestimates the effective dose when compared to the dose calculated using the ImPACT calculator. A conversion factor of 0.028 would give a better estimation of the effective dose from prospectively gated cardiac MDCT.

European Radiology December 2010, 20:2773-80

Rosemarie Forstner, Evis Sala, Karen Kinkel and John A. Spencer

ESUR guidelines: ovarian cancer staging and follow-up

OBJECTIVE: To design clear guidelines for the staging and follow-up of patients with ovarian cancer, and to provide the radiologist with a framework for use in multidisciplinary conferences.

METHODS: Guidelines for ovarian cancer staging and follow-up were defined by the female imaging subcommittee of the ESUR (European Society of Urogenital Radiology) based on the expert consensus of imaging protocols of 12 leading institutions and a critical review of the literature.

RESULTS: Computed tomography (CT) with coverage of the base of the lungs to the inguinal region is regarded as the imaging technique of choice for

preoperative staging. Critical diagnostic criteria are presented and the basis for a structured report for preoperative staging is outlined. Following primary treatment for ovarian cancer, clinical assessment and CA-125 are routinely used to monitor patients. For suspected recurrence, CT remains the imaging modality of choice, with positron emission tomography (PET)/CT emerging as the optimal imaging technique for suspected recurrence, particularly in patients with negative CT or magnetic resonance imaging (MRI).
CONCLUSIONS: CT is the imaging modality of choice for preoperative staging and detection of recurrence in patients with ovarian cancer.



European Radiology December 2010, 20:2933-8

Jens Pfeiffer and Gerd J. Ridder

How safe is the use of ultrasound-guided cutting needle biopsy in the head and neck?

OBJECTIVES: To analyse the risks and potential complications of cutting needle biopsy (CNB) for head and neck lesions, which have not been fully discussed previously.

MATERIALS AND METHODS: We performed a systematic clinicopathological quality assessment study of 200 patients with cervicofacial lesions who underwent 444 CNB procedures with a semiautomatic biopsy gun.

RESULTS: Adequate target tissue was obtained in 181 patients and revealed malignancy in 127 patients (70.2%). Follow-up uncovered 2 (1.1%) false-negative results. Emphasis was placed on the analysis of 4

minor and 2 major complications that were recorded. One patient suffered from a cerebrovascular event and died after dissection of a distinctively kinked carotid artery. The risks of CNB are discussed and compared to fine-needle aspiration cytology (FNAC) and open biopsy and related to series of parameters.

CONCLUSION: CNB is a safe and reliable technique in the majority of cases but its risks in the head and neck are not negligible due to the proximity of major neurovascular structures and airways. We recommend special attention after neck surgery and radiotherapy and when the target is not clearly circumscribed and is close to major vessels.