

Commentary

All the four articles chosen for this issues literature review have a quality theme to them. There are three reviews and one original article selected from recent issues of Radiology and Radiographics.

With the improvements in imaging technology the visualisation of adrenal glands has improved dramatically. Gone are the days of retroperitoneal air insufflation to outline adrenal glands. This improved visualisation throws up diagnostic dilemmas when lesions are demonstrated incidentally. This especially causes consternation in the context of malignant diseases elsewhere in the body. The article by Boland et al address this dilemma and gives a workable algorithm for characterising these lesions.

Radiation protection is a subject close to my heart. Two article focussing on the subject. Ward et al highlight the fact that radiation exposures depend to a large extent on the equipment used and we should ensure that equipment is appropriately replaced so that the advantages of new technology are fully realised. The second article sets out in straight forward terms the fundamental facts that all of us need to appropriately counsel our patients. These should already be well known but will withstand re-emphasis.

The last article focusses on one of the most commonly performed 'interventional' radiology procedure: FNAC. The article is about thyroid FNA but the general principles are the well described and applicabke for all procedures.

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Giles W. L. Boland, Michael A. Blake, Peter F. Hahn, William W. Mayo-Smith

Incidental Adrenal Lesions: Principles, Techniques, and Algorithms for Imaging Characterization

ABSTRACT: Incidental adrenal lesions are commonly detected at computed tomography, and lesion characterization is critical, particularly in the oncologic patient. Imaging tests have been developed that can accurately differentiate these lesions by using a variety

of principles and techniques, and each is discussed in turn. An imaging algorithm is provided to guide radiologists toward the appropriate test to make the correct diagnosis.

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Valerie L. Ward, Keith J. Strauss, , David Zurakowski, Vaidehi Venkatakrisnan, Frederic H. Fahey, Robert L. Lebowitz, George A. Taylor.

Pediatric Radiation Exposure and Effective Dose Reduction during Voiding Cystourethrography

PURPOSE: To compare radiation exposure and effective dose in children who underwent voiding cystourethrography (VCUG) performed with grid-controlled variable-rate pulsed fluoroscopy (GCPFL) with radiation exposure and effective dose in children

who underwent VCUG performed with continuous fluoroscopy (CFL) and to compare these effective doses with those estimated with radionuclide cystography (RNC).

MATERIALS AND METHODS: Institutional review board approval was obtained, and the informed consent requirement was waived for this HIPAA-compliant retrospective study. Radiation exposure and fluoroscopy time during VCUG were reviewed in 145 children (75 girls, 70 boys; age range, 3 days to 8 years) who underwent GCPFL or CFL between 2001 and 2002. Children were grouped on the basis of the fluoroscopy unit used and their supine anteroposterior abdominal diameter (group 1, 8.0–8.5-cm diameter; group 2, 10–11-cm diameter; group 3, 12–13-cm diameter). Analysis of variance was used to compare radiation exposure and fluoroscopy time between fluoroscopy units and patient diameter groups. Effective doses

were calculated and compared for both fluoroscopes and for estimated RNC dose values.

RESULTS: GCPFL resulted in a significant reduction in total radiation exposure, which was at least eight times lower than that with CFL in all three groups ($P < .001$ for all). There was no significant difference in fluoroscopy time ($P > .50$). Effective radiation doses from GCPFL were approximately one order of magnitude lower than those from CFL but one order of magnitude higher than those from RNC.

CONCLUSION: In children, VCUG can be performed with a GCPFL unit that delivers radiation exposures that are at least eight times lower than those delivered by a conventional CFL unit.

RadioGraphics November 2008, 28, 1807-16.

Francis R. Verdun, François Bochud, François Gundinchet, Abbas Aroua, Pierre Schnyder, Reto Meuli.

Quality Initiatives Radiation Risk: What You Should Know to Tell Your Patient

ABSTRACT: The steady increase in the number of radiologic procedures being performed is undeniably having a beneficial impact on healthcare. However, it is also becoming common practice to quantify the health detriment from radiation exposure by calculating the number of cancer-related deaths inferred from the effective dose delivered to a given patient population. The inference of a certain number of expected deaths from the effective dose is to be discouraged, but it remains important as a means of raising professional awareness of the danger associated with ionizing radiation. The risk associated with a radiologic

examination appears to be rather low compared with the natural risk. However, any added risk, no matter how small, is unacceptable if it does not benefit the patient. The concept of diagnostic reference levels should be used to reduce variations in practice among institutions and to promote optimal dose indicator ranges for specific imaging protocols. In general, the basic principles of radiation protection (eg, justification and optimization of a procedure) need to be respected to help counteract the unjustified explosion in the number of procedures being performed.


RadioGraphics November 2008, 28, 1869-86.

Min Jung Kim, Eun-Kyung Kim, Sung Il Park, Byung Moon Kim, Jin Young Kwak, Soo Jin Kim, Ji Hyun Youk, Sung Hee Park.

US-guided Fine-Needle Aspiration of Thyroid Nodules: Indications, Techniques, Results

ABSTRACT: Fine-needle aspiration (FNA) biopsy of thyroid nodules is minimally invasive and safe and is usually performed on an outpatient basis. However, the optimal application of FNA requires not only technical skill but also an awareness of the limitations of the procedure, the indications for its use, the factors

that affect the adequacy of the biopsy specimen, and the postprocedural management strategy. Ultrasonographic (US) features that are considered indications for FNA include single and multiple thyroid nodules. The results of FNA biopsy are operator dependent. In addition, the results may be affected by the lesion



characteristics, the accuracy of lesion and needle localization, the method of guidance, the number of aspirated samples, the needle gauge, the aspiration technique, and the presence or absence of on-site facilities for immediate cytologic examination. With regard to postprocedural management, nodules that are diagnosed as benign on the basis of an adequate FNA specimen should be monitored with follow-up US.

Circumstances that necessitate repeat FNA include sample inadequacy, nodule enlargement, cyst recurrence, or clinical or imaging findings that arouse suspicion about the presence of a malignancy even when cytologic findings in the biopsy specimen indicate benignity. Supplemental material available at radiographics.rsna.org/cgi/content/full/28/7/1869/DC1.