

Conference Scene

2009 Annual National Diagnostic Imaging Symposium



9th Annual National Diagnostic Imaging Symposium World Class CME, Lake Buena Vista, FL, USA, 7–11 December 2009

Introduced 9 years ago, the National Diagnostic Imaging Symposium was conceived to be the definitive and comprehensive end of year review for community radiologists. It has grown to an attendance of nearly 400 radiologists, who receive information on ten radiology subspecialties from world-renowned experts. The program is structured with the use of two lecture halls, so that participants may choose which lecture to listen to at any time.

The 9th Annual Diagnostic Imaging Symposium convened on Monday 7 December, 2009, amid much enthusiasm from the participants. Subspecialties presented on the first day were musculoskeletal radiology and PET/CT. Fascinating advances in MRI techniques and metabolic imaging were the highlights of the first day of the symposium. The next day was devoted to 3D and cardiovascular imaging and neuroradiology followed by chest radiology and ultrasound. Body CT and MRI, breast imaging, emergency radiology and breast MRI filled the remaining 2 days; thus, the main focus of the course was to supply radiologists with current knowledge and future applications in diagnostic imaging.

Musculoskeletal imaging

The section was opened with a discussion of the shoulder joint by Donald Resnick (UCSD Medical Center, CA, USA), including the pathophysiology and imaging findings in glenohumeral instability, a description of how, why and when the rotator cuff tears and MRI essentials of biceps tendon, rotator interval and 'other important stuff'. Continuing with information on the upper extremity, Mark Anderson (University of Virginia Health System, VA, USA) elaborated on disorders of the elbow, wrist and hand. An intensive presentation on the ankle was given by Clyde Helms (Duke University School of Medicine, NC, USA), which covered the tendons, ligaments and other pertinent findings. Finally, Mark Kransdorf (Mayo Clinic, FL, USA) lectured on inflammatory conditions of the bone, and tumors of bone and soft tissues, describing which tumors should be of concern.

PET & PET/CT

Barry Siegel of the Mallinckrodt Institute of Radiology (MO, USA) gave an elegant discussion of PET in imaging the response of cancer to therapy. Of special interest was his discussion of the differences between routine clinical care and drug development. In the former, we would like to know if the treatment has failed, while in the latter, we would like to know if the treatment has succeeded. He then discussed the use of PET/CT in imaging the response of cancer to therapy, as well as in imaging the side effects of therapy.

3D & cardiovascular imaging

This section was opened by a discussion of state-of-the-art 64-slice multidetector CT by Elliot Fishman (Johns Hopkins University, MD, USA). He then carefully described methods to improve volume visualization and to guard against pitfalls in multidetector CT.

In his lecture on 'Imaging the Vulnerable Plaque,' David Dowe (Atlantic Medical Imaging, NJ, USA) discussed, at length, the pathophysiology of coronary artery disease, detailing which type of plaque is most likely to occlude the artery. His emphasis was that what is happening in the arterial wall is more important than the lumen diameter in predicting which arteries will occlude.

Chest radiology

A comprehensive overview of lessons learned from CT screening studies of the solitary nodule was given by W Richard Webb (University of California, CA, USA). Size, edge, shape, growth rate, air content and biomarkers all matter in

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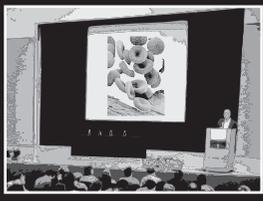


Table 1. Receiver operating characteristic area under the curve.

Scoring method	Density	AUC FFDM	AUC FFDM plus TOMO	Difference in AUC	p-value
BIRADS	Fatty	0.880	0.925	0.045	0.0004
BIRADS	Dense	0.786	0.880	0.094	0.0001
POM	Fatty	0.880	0.915	0.035	0.0008
POM	Dense	0.786	0.877	0.091	<0.001

AUC: Area under the curve; BIRADS: Breast imaging reporting and data system; FFDM: Full-field digital mammogram; POM: Probability of malignancy; TOMO: Tomosynthesis.

determining whether a nodule is benign or malignant; several findings are key in diagnosis. Webb also addressed recommended follow-up regimens and schedules.

Ultrasound

Deborah Levine (Harvard Medical School MA, USA) gave an in-depth review of the major discrepancies that can occur when reading the fetal ultrasound/MRI for the evaluation of fetal CNS abnormalities. This was accompanied by multiple slides, including several that demonstrated uncertain or missed diagnosis on ultrasound. She also presented statistics on the significant changes in actual diagnosis, counseling and patient management based on ultrasound followed by MRI.

Neuroradiology

A detailed discussion of CNS vascular malformations by James Smirniotopoulos (Uniformed Services University, MD, USA) was one of the highlights of this session. His careful description of the various malformations made it easy for the participants to understand the differences in pathology, imaging and prognosis of these common lesions.

CT colonography

Matthew Barish (Stony Brook University Medical Center, NY, USA) discussed the limitations of barium enterography and colonoscopy as screening methods as compared with CT colonography

or virtual colonoscopy for screening asymptomatic patients and diagnosing symptomatic patients. CT colonography minimizes risk with low dose contrast, avoids spasmolytics and maximizes diagnostic yield.

Breast imaging

Elizabeth Rafferty (Massachusetts General Hospital, MA, USA) presented the findings of a multicenter multireader study, comparing receiver operating characteristic analysis and recall rates for radiologists using full-field digital mammogram imaging only and full-field digital mammogram plus tomosynthesis imaging. TABLES 1 & 2 compare receiver operating characteristic analysis and recall rates for both methodologies.

Breast tomosynthesis is mammography only better. Access to this technology for the general population and development of further breast x-ray imaging techniques, such as contrast administration and fusion technology, offer exciting possibilities in the future of radiology.

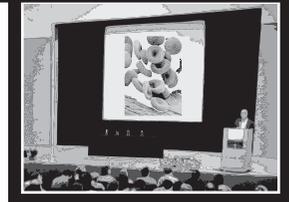
Emergency radiology

Carolina Chiles (Wake Forest University, NC, USA) reviewed emergency room presentations of push enteroscopy and the optimal use of CT technique for diagnosis. She had numerous slides of various findings as well as pitfalls in interpretation of CT for push enteroscopy; in addition, she covered patients in whom CT is contraindicated.

Table 2. Recall rates for noncancer cases.

Breast density	Case type	FFDM recalls (%)	FFDM plus TOMO recalls (%)
Fatty	Noncancer	47.7	27.0
Dense	Noncancer	49.9	33.1

FFDM: Full-field digital mammogram; TOMO: Tomosynthesis.



Breast MRI

Elsie Levin (Boston University School of Medicine, MA, USA) explained how breast MRI surveillance of high-risk patients, specifically those who have undergone genetic counseling by experts, can significantly improve detection of cancer that is clinically and mammographically occult.

The next meeting

The 10th Annual National Diagnostic Imaging Symposium, presented by World Class CME, will be held at Disney's Contemporary Resort, Lake Buena Vista, FL, USA, 5–9 December 2010. It will feature self-assessment modules for the first time, enabling radiologists to qualify for recertification. Initial application is for 20 self-assessment modules (SAMs),

and final determination by the American Board of Radiology is expected by the end of March. More information and registration will be available at [1].

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