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RSNA Congress Review

The 92nd Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA) saw attendance increased by three percent from last year. The congress included 1,625 scientific papers in 17 subspecialties, more than 300 refresher courses, 1,428 education exhibits and 638 scientific posters. 738 technical exhibits occupied 514,800 square feet, an increase of six percent over last year.

Opening Address

Kicking off RSNA 2006 was President Robert R. Hattery, who urged attendees to renew commitment to professionalism. Hattery said physicians should engage in self assessment and periodically gauge themselves against medical standards. They should teach and mentor, proactively deal with unprofessional behaviour and help bolster public confidence in medicine. Meanwhile, the congress itself showcased some of the most recent and cutting-edge research available.

Showcasing Leading Research

Back Pain and the Brain

Using diffusion tension magnetic imaging technology on a 1.5 Tesla platform, German researchers suggest their findings may be helpful to patients with chronic low back pain whose condition is often greeted with skepticism from friends, relatives, coworkers, doctors and insurers. "Many of these people go from doctor to doctor and are told they can't find anything wrong, yet the pain they suffer is real," said Jurgen Lutz, a resident in radiology at the University Hospital, Ludwig-Maximilians University, Munich. Dr. Lutz enrolled 20 patients with chronic low back pain who had no apparent cause for the pain and compared their brain functioning with diffusion tensor imaging with 20 matched individuals with no back pain. "There appears to be structural changes in patients with pain in certain parts of the brain," Dr Lutz explained. He said there appeared to be increased trafficking of signals along neural highways that usually carry pain messages in the brain.

Ultrasound and Breast Cancer

Fifty percent or more of negative breast cancer biopsies performed in the United States might be eliminated if tests support preliminary findings using ultrasound "elasticity" testing. The non-invasive tests showed 100% sensitivity and 99% specificity in a pilot study involving 80 women who required a diagnosis for breast lesions. "If the use of the ultrasound elasticity test is extended into general treatment, I think we would be able to make at least half the biopsies being performed for breast cancer unnecessary," said Richard Barr, Professor of radiology at Northeastern Ohio Universities College of Medicine. Using ultrasound "elasticity" testing, patients undergo a standard ultrasound test in order to visualise the lesion seen on mammography. Then a second ultrasound examination that takes about two additional minutes is performed. The second test, in Dr Barr's trial, was performed with Siemens Ultrasound equipment and software - a system recently approved by the Food and Drug Administration. This system highlights certain characteristics of the lump, including its size and how much the lesion moves or stretches.

Radiofrequency Ablation and Lung Cancer

In lung cancer patients where surgery is not an option, the use of radiofrequency ablation of tumours can be performed with a low incidence of major complications. "We had a 9% rate of serious complications in 100 procedures to ablate primary lung cancer tumors or metastases in these patients," said Laura Crocetti, Assistant Professor of radiology at the University of Pisa, Italy. "We also had 16 minor complications." One patient died due to pneumothorax refractory to treatment, she said. The major complications included pneumothorax requiring drainage in four patients and hemothorax that was treated conservatively in three patients. Dr Crocetti said those complications occurred immediately or shortly after the ablation treatment. Two other major complications occurred within 30 day after the treatment. "Overall, however, we have shown that radiofrequency ablation of lung malignancies is associated with acceptable rates of complications in a large series of consecutive cases," Dr Crocetti said.

Smoking and MR Spectroscopy

Imaging studies that compared smokers to non-smokers found smokers have depleted levels of several key chemicals in the brains. By using proton magnetic resonance spectroscopy, Okan Gür, MD, a fellow in radiology at the University of Bonn, Germany, demonstrated that while smoking can create chemical imbalances, by quitting smoking those chemical changes can be reversed. "This is the first imaging study to focus on the relationship between brain metabolites and nicotine dependence," Dr Gur said. In particular, researchers were attempting to see the impact of smoking and smoking cessation on concentrations of the key amino acid N-acetylaspartate (NAA) as well as total creatine and choline. Low levels of these chemicals are associated psychiatric and mood disorders, including schizophrenia, Alzheimer's disease, bipolar disorder and

substance abuse.

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