2011 ESSR award to Dr Peter Mercouris

Dr Peter Mercouris, who is a partner with Drs Lake, Smit and Partners in Durban, is a member of the ESSR (European Society of Musculoskeletal Radiology) and is in the process of successfully completing the ESSR Diploma programme.

One of the requirements of the diploma is the submission of a scientific presentation or exhibit (poster) at the ESSR congress held annually in Europe. The 2011 congress took place in Crete, Greece, and his article entitled 'MRI of SLAP lesions: A pictorial review of imaging and anatomy with arthroscopic correlation' received one of the three poster prize awards (*magna cum laude*). He is seen here holding his poster prize certificate.

RSSA travel award winner attends ECR 2011 in Vienna

Dr Shaun Scheepers, a radiology registrar at the University of Stellenbosch and Tygerberg Hospital, was one of the 2010 RSSA Travel Award winners; he used his prize to attend the European Congress of Radiology from 3 - 8 March 2011 in Vienna, Austria, and has written the following report.

The ECR is the largest radiology congress in Europe and second only to the RSNA. Nothing can prepare one for the magnitude of such an event. Nearly 23 000 delegates attended the congress over 5 days. The city of Vienna and the Austria Conference Centre are ideally equipped to host such a prestigious event.

The wide variety of sessions included scientific presentations, refresher courses, interactive teaching sessions and special focus sessions. Every year, the ECR invites a number of their radiology counterparts from outside Europe who, together with the host nation, present 'ECR meets' sessions. Over the 5 days, we heard about chest imaging from Brazil, interventional radiology from Iran, and imaging in neurosciences from France. With up to 7 concurrent sessions at a time, careful planning is needed to optimise one's experience of the ECR.

Highlights included an excellent session on breast imaging and what the radiologist should report on. The ever-increasing role of breast MRI was emphasised, with a careful reminder of the potential pitfalls. A third of patients with breast carcinoma on mammography and/or ultrasound are found to have additional lesions on MRI. MRI also changes the surgical management correctly in 11% of patients. For the radiologist to make the correct diagnosis, accurately determine the extent of disease and effectively guide its management, a multi-modality approach utilising mammography, ultrasonography and MRI in combination is essential.

In a session entitled 'Sports Injuries: US or MRI?', it was concluded that US can be as good as MRI in sports imaging, but only when performed by experienced MSK radiologists, with the added advantages of mobility and availability next to the sports field.

During lunch breaks, satellite symposia were hosted by leading manufacturers. The general focus was on new developments in imaging technology, especially dose reduction techniques. Techniques mentioned included Care Dose, Current Modulation, Care kV, and second-generation iterative reconstruction. The latter is especially promising, as it enables extra-low dose imaging with minimal loss in image quality. Immediate implications include renal stone imaging, and imaging for patients requiring frequent follow-up, with excellent efficacy demonstrated among patients with Crohn's disease. The ultimate goal is to perform a standard CT abdomen at the same dose as an abdominal X-ray, so enabling CT to replace the abdominal X-ray.

Another exciting development is Flash CT. It utilises dual-source technology to increase acquisition speed, thereby avoiding the need for breath holding as well as reducing the need for sedation in paediatric patients. It can provide high-quality cardiac scans for patients with high or irregular heart rates, while being able to achieve sub-mSv doses.

The concept of contrast-induced nephropathy (CIN) was also raised again. It was emphasized that CIN is a laboratory parameter and not a clinical syndrome. The largest studies on CIN were performed on data collected from patients receiving intra-arterial contrast, while undergoing coronary angiography. Therefore, some authors propose the term 'catheter effect' instead of CIN. Currently, trials are underway to investigate the safety of intravenously administered, low osmolar, non-ionic contrast agents. Hopefully, we shall all have clarity on this contentious issue in the near future.

In the rapidly developing world of radiology, the expanding role of the radiologist in therapeutic management and functional imaging was also discussed. With the aid of MR-guided high-intensity focused ultrasound (MRgHIFU), the radiologist can now deliver a chemotherapy agent directly to the area of interest, so increasing bio-availability and effectivity, while minimising adverse effects on other organ systems. By inducing local hyperthermia and thereby increasing tissue oxygenation, MRgHIFU can sensitise target tissue to irradiation. MRgHIFU can also be used for tumour ablation, with the ultrasound delivering tissue heating and the MRI simultaneously being implemented for planning of the intervention, and continuous monitoring of the delivery site and the response to intervention.

Functional imaging is rapidly expanding with the advent of molecular imaging. Exciting developments such as optical imaging, by utilising near-infrared fluorescence, enable the radiologist to demonstrate neoplastic tissue with the naked eye or with the assistance of an infrared camera. This is of particular importance in breast imaging, as the surgeon can now be guided as to the exact number and location of tumour foci as well as lymph nodes to which tumour cells have spread. Other functional imaging techniques include ultrasound-targeted microbubbles and MRI nanoparticle imaging such as ultra-small superparamagnetic iron oxide (USPIO)-enhanced MRI.

Myocardial stress perfusing imaging using MRI is being utilised more extensively in evaluating patients with coronary artery disease. Stress is either induced physically or mentally (by giving patients complex mathematics to perform). Innovative software now enables the radiologist to perform virtual surgery on MRI images obtained from patients with congenital heart disease. This helps surgeons to optimise the surgical technique, as well as alerting them to potential complications. Post-surgical flow dynamics can also be determined.

I extend my sincere thanks to the RSSA for the generous prize which afforded me this wonderful opportunity of attending a world-class international congress.