NSF avoidance triggers debate

By Paula Gould

The controversial topic of nephrogenic systemic fibrosis (NSF) drew a large crowd to yesterday morning’s special focus session. Delegates queued to quiz speakers about their recommendations for NSF avoidance, ensuring a lively panel discussion.

NSF is a relatively new medical condition, and one that has taken the medical community somewhat by surprise. The systemic disorder, which results in sclerodema-like skin discoloration and hardening, was first observed in patients in 1997. All cases reported to date have involved patients with advanced renal disease.

Radiologists’ avid interest in NSF is due to the apparent link with gadolinium-containing contrast media. The vast majority of patients develop NSF after being given a Gd-based agent on one or more occasions.

The causal link between Gd-based agents and NSF is far from straight-forward, though. Two cases have occurred in patients who have never received a Gd-containing contrast agent.

“It seems that gadolinium is a very powerful trigger, but NSF can also occur without the MRI agents,” said Prof. Pontius Persson from the Institute of Physiology, Charité Medical University of Berlin.

The key question for radiologists is: How can we prevent the continued occurrence of NSF? The first crucial step is to identify those patients who are at highest risk, that is, those with impaired renal function, said Prof. Sameh Morcos, professor of radiology at the University of Sheffield, UK.

Cardiac radiology enters vital new phase

By Philip Ward

Cardiac imaging is at a crossroads. That’s the view of next year’s ECR President – and he’s not alone in holding such an opinion.

Advances in CT and MR are expanding the role of these modalities, and highly promising results from coronary CT angiography are boosting the demand for 64-slice multidetector (MDCT) scanners, but uncertainty remains, said Prof. Borut Marinček, Chairman at the Institute of Diagnostic Radiology at Zurich University Hospital.

He listed several key areas of concern in cardiac imaging, including the ongoing definition of applications, the high expectations of users and vendors, competition between professional organisations and societies, the need for quality measures, cardiac experts providing interpretations by means of teleradiology, and collaboration between radiology, cardiology, and others.

The ESR’s 2007 survey, based on 138 responses from European radiology departments performing cardiac CT and MR, confirmed that cardiac imaging is mainly carried out by radiologists in university hospitals. Marinček told attendees at Saturday’s special focus session, at which he was the moderator.

The survey also found that most radiologists are only offering a daytime cardiac imaging service, and many of them are afraid of losing work to other specialties. A lack of clinical training and limited experience of cases during their residency are seen as major obstacles facing radiologists who wish to become experts in cardiac imaging. The full results of the survey are due to be published in the next edition of the ESR Newsletter (issue 02/08).

CT can broadly, but not completely, cover a large proportion of cardiac imaging, and is an excellent tool for non-invasive imaging of the coronary arteries and ventricular dimensions and function, according to Dr. Hatem Alkadhi, also of the Institute of Diagnostic Radiology at Zurich University Hospital. In addition, the modality has some potential for assessing valvular function and myocardial viability, but no role in perfusion imaging.

"CT for myocardial perfusion measurements is usually not performed because of radiation dose issues," he told attendees at the session.

For the epicardium and pericardium, the primary imaging modality is MRI, Alkadhi stated. The second-line modality is CT, particularly when a lesion extends beyond the epicardium or pericardium.

MRI, on the other hand, is widely accepted as the gold standard for volume and muscle mass quantification, according to Prof. Matthias Gutberlet, a professor of cardiovascular physiology and MR perfusion in daily routine lacks robustness, he continued.

Both these areas can benefit from the use of higher field strengths and parallel imaging.

Different diagnostic strategies are required for both primary and secondary prevention of cardiovascular morbidity and mortality, noted Prof. Valentin Sintamir of the Cardiology Center in Moscow. Whereas calcium scoring and ultrasound are needed for primary screening of cardiovascular diseases, a different approach is necessary for coronary CT angiography, assessment of myocardial function and perfusion, and examinations of flow and valve function. Uncertainty, though, surrounds the precise role of MDCT and MRI in the work-up of cardiac diseases.

MDCT has turned into a useful tool for non-invasive coronary imaging, including acute coronary syndromes and imaging of pulmonary veins, while MRI has emerged as a valuable method for assessment of myocardial viability and perfusion, he said.

The unanswered questions remain: Who will perform and interpret cardiac CT and MRI examinations? Will it be those who have the knowledge or those who have access to the equipment? Sintamir believes it will be radiologists, but much will depend on their skill and activity in cardiac CT angiography and MRI, and whether they can cooperate successfully with cardiologists.
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CAD emphasis shifts to diagnosis

By Paula Gould

Computer-aided detection and diagnosis tools were showcased at Saturday’s ‘EPOS meets Germany’ session. Speakers highlighted four key clinical areas where advances in CAD could make a real difference to diagnostic decision-making.

The potential of CAD in breast imaging was first noted back in 1967, said Prof. Ulrich Bick, professor of radiology at the Charité Medical University of Berlin. CAD algorithms have evolved considerably since that initial report, leading to a steady improvement in performance. He showed data from a 2008 study revealing 100% sensitivity for breast CAD in detecting microcalcifications and 91% sensitivity for malignant masses.

“Masses are easy to see, but difficult to interpret,” Bick said. “Basically the entire breast parenchyma is made up of masses. So if you look at a mammogram, it is very difficult to tell which of these are cancers and which are not. In addition, detection of associated architectural distortion is difficult for the computer!”

He predicts that future breast CAD systems will be equipped with intelligent workstations that can help determine if lesions are malignant or not. This will be done by comparing key features seen on the mammogram to those in a database.

Radiologists must also learn how to use CAD appropriately. Given the large number of false-positive readings generated by breast CAD, a measured approach is necessary, and he recommends neither blind faith in the computer nor complete scepticism.

Bick suggested that radiologists will gradually come to regard CAD as a trusted second reader for screening mammography, rather than a “spell-checker.” No-one is yet obliged to use CAD when reading screening mammograms, but if future data demonstrates that CAD can reduce the mortality of breast cancer, then this issue may need to be re-visited.

“At some stage, CAD will be superior to radiologists,” he predicted.

Chest imaging is another area where CAD is used at present, but has the potential to do much more, according to Prof. Hans-Ulrich Kauczor, chairman of the department of radiology at University Hospital Heidelberg.

CAD is currently helping radiologists find pulmonary nodules and early signs of lung cancer on CT. It envisages computerised systems that could evaluate chronic obstructive pulmonary disease (COPD). It should be possible to create tools that can distinguish between emphysema-predominant COPD and airway-predominant COPD, a distinction that could influence treatment, he said.

Others advance forecast by Kauczor include a greater use of CAD for emphysema, 4D imaging of lung hyperinflation, and the inclusion of vascular imaging tools in chest CT work-up.

Continuing the theme of computer-aided analysis, Prof. Heinz-Otto Peitgen of the Centre for Medical Diagnostics and Visualization (MeVis) in Bremen described a variety of state-of-the-art tools that may assist in liver imaging and intervention. His presentation explored three different aspects of computer-aided diagnosis and therapy: response evaluation in chemotherapeutics, surgical planning, and radiofrequency ablation.

Detection – rather than diagnosis – will remain the primary role for CAD in the colon, said Prof. Andrik Aschoff, associate professor of radiology at the University of Ulm. Early identification and removal of polyps promises to reduce the rate of colon cancer, but if this type of screening is to be performed with CT colonography, then CAD may be needed to reduce variations in reader sensitivity.

Aschoff outlined the three alternative paradigms for using CAD: as an initial reader to filter out “normal” cases, as an aid to the reporting radiologist, and as an independent second reader. This latter option tends to give the best sensitivity, though at the cost of slightly extended reading times, he said.

“CAD is very promising in CT colonography. It has the potential to support radiologists in providing the best possible detection rates of polyps. This is extremely important. If we do CT colonography on our patients, we want to give them the assurance that they have no large polyps, and they are not going to develop colorectal cancer,” Aschoff concluded.

Five years after plugging in, EPOS™ is now fully charged

By Mélisande Rouger

In the space of just five years, EPOS™, the Electronic Online Presentation System, has become a refined and widely used tool.

At ECR 2008, the electronic scientific exhibition features 944 scientific and educational exhibits, 117 more than last year. In addition, the exhibition incorporates 14 invited lectures and 68 scientific papers.

“Those who present in EPOS™ have the advantage of being able to get a measured approach in delivering one’s presentation,” said Prof. Bernd Hamm, chairman of the Scientific Exhibition Committee.

The quality of the exhibition has increased over the years, but there is still room for improvement, particularly regarding the length of the presentations, conceded Hamm, who is a professor of radiology at the Charité Hospital in Berlin.

“Some presentations take up to five or 10 minutes to read through, while the idea is to understand everything immediately by viewing the poster. Some users tend to submit presentations that look like manuscripts, but that is not what EPOS™ is about,” he noted.

In the EPOS™ area, situated on the second level of the Austria Center, delegates can view the exhibits on 120 computers. Hundreds of delegates pour in every day between 07:00 and 19:00, the busiest period being around lunchtime. Staff reported that some visitors have to queue between 11:00 and 15:00, but this does not seem to dampen their enthusiasm.

The EPOS™ corner is rapidly becoming one of the most popular features of the congress, and it appeals to every kind of radiologist.

“Women, men, the elderly, students: they all come up here,” joked one staff member.

You should set aside some time to visit EPOS before ECR ends. The exhibition will be open from 07:00 to 19:00 on both Sunday and Monday. On Tuesday, the final day of the congress, the electronic exhibits will remain open from 07:00 to 14:00.

As always at ECR, the EPOS area has been filled with knowledge-hungry delegates.
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Novel concepts and approaches are essential to speed up MRI examinations. Furthermore, pushing signal-to-noise ratio further, users must remember that reliable diagnosis leading to correct and curative therapy is the top priority. Major increases in imaging speed in 3D examinations and/or in repetitive examinations like cine imaging are evolving and will lead to further progress as coil design and reconstruction algorithms develop, according to Hennig.

In the bigger picture of optimising patient care, users must remember that diligent diagnosis leading to correct and curative therapy is the top priority. Also, it is important to stress that more imaging reduces time to recovery.

Delegates particularly enjoyed Hennig’s humorous slide that showed a photo of himself in a red sports car. The officer asked Hennig if he knew he was travelling at n times the Nyquist speed limit. The Swede produced an excellent seven under par 65 for a 17-shot lead over Argentina’s Daniel Vancsík. Sunday’s final round with a two-shot lead over Argentina’s Daniel Vancsík. Sunday’s final round with a two-shot lead over Argentina’s Daniel Vancsík.

For Hedblom, eleven years of waiting for this new interest from East European countries will be a big topic in the near future. Zimmermann predicted, “They have the money, they want to move on, and they are very open and curious about these issues,” she explained.

Attendees also showed more interest in IT solutions compared with previous years, reflecting the importance IT technologies have acquired in the medical sphere. “This symposium wants to be and actually is a mirror of what’s happening in hospitals and the healthcare market,” she said.

Health technologies are changing rapidly, and providers are having to adapt their products to their customers’ needs. For instance, some companies offer contracts called managed services, which include a commitment to keep the technology up to date over a fixed period of time. Those contracts can last from seven to 15 years, a period that often puts off hospital or department managers.

"Clinicians are initially very reluctant to long-term contracts, but this is changing," said Eric-Jan Rutten, General Manager of Professional Healthcare Solutions, Philips Healthcare International, Eindhoven, The Netherlands, who spoke at Saturday’s session.

The attitudes towards long-term contracts vary from one country to another. In Italy, hospitals are looking for short-term agreements for six or seven years, he noted. But in the UK, hospitals may enter into contracts for 10, 15 or 25 years.

The event ended with a lively discussion between Rutten, Dr. Alex Blaicher (Director of the regional Hospital Landskrankenhaus Vöcklabruck in Austria) and Luis Barcia Albacar (General Manager of the Hospital Torrevieja Salud in Spain) about management and financing models for hospitals, paving the way for more discussions in the near future.
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PHOTOGRAPHIC HIGHLIGHTS

Harry’s Hot Shots from Day Two

Who and what caught the eye of ECR Today’s valiant photographer, Harry Schiff er, on the second day of the congress? On this page is a selection of what Harry saw through the lens of his camera during Saturday’s activities at the Austria Center.

Hard copy or soft copy? Whatever your preference, take advantage of the free publications. Visit the 1st level to pick up radiology magazines and journals for the flight home. Online access to radiology journals is also free at terminals nearby.

The first of the DRG’s certificates for manufacturers of patient-image disk writing tools were awarded on Friday to IMAGE Information Systems Ltd. (London) and to CERNER Deutschland GmbH (Herzogenrath).

Hot off the press: thousands of copies of the ECR Today newspaper were distributed on the first two days of the congress. Look out for our final issues on Monday/Tuesday.

Pause for thought at this year’s special exhibition from Prof. Hermann Vogel – X-Rays and Society: Perception, Threat, Torture.

It’s an examination table, but not as we know it. These massage tables, located on the lower level (U2), are helping delegates to unwind.

In this the entrance to ECR or an international airport? The upgraded entrance area has added style and panache to the Austria Center.

No grumbling stomachs at this year’s ECR. The wide selection of fresh hot and cold dishes available at sites throughout the Austria Center means that no delegate need go hungry.

Packed lecture halls and attentive attendees were the order of the day during Saturday’s sessions.

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Industry develops new ideas to confront challenges posed by PACS

By John Bonner

PACS developers face numerous formidable challenges in their quest to create the ideal working environment for those involved in interpreting radiological images. These include learning how to cope better with the explosion in the quantity of data produced in a modern hospital, efficiently retrieving and displaying that information both within the hospital environment and beyond, and achieving improved integration of images derived from different modalities. However, when you visit the commercial exhibition at ECR 2008, you may be pleasantly surprised at the rapid progress being made in each of these areas.

The latest platform will enhance staff efficiency by delivering optional integrated applications such as native 3D, image fusion, orthopaedic templating, and cardiac analysis to authorised users at remote locations as well as onsite diagnostic workstations. It also uses specialised display protocols that organise images into each radiologist’s preferred format so that interpretation can begin in seconds instead of minutes, he added.

Increasingly, radiological images are being examined on workstations that are dependent for their processing functions on a central server that may even be based outside that hospital. At ECR 2008, Visage Imaging, a subsidiary of Mercury Computer Systems, is demonstrating its thin-client, “Radiologists and clinicians need access to medical imaging data and clinical applications throughout the entire hospital at the click of a mouse in order to interpret and manipulate 2D, 3D, and 4D medical imaging data,” said company president Marcelo Lima. “Our integrated thin-client-based PACS combines enterprise-wide image management and advanced visualisation in a single platform.”

All PACS need to handle vast quantities of image data, often in a network environment that performs poorly and has long latencies. Sectra’s new diagnostic workstation, IDS7/dx, is designed to help overcome some of these difficulties. It incorporates patented encoding technology to provide lossless, flexible representations of the data, which allows on-demand delivery of those parts of the image that the clinician requires at an appropriate level of detail.

PACS vendors are showing off a range of products in the Austria Center, from complete hardware/software packages to boutique solutions for specific problems facing radiologists and their colleagues.

Carestream Health was spun out of Eastman Kodak as an independent entity last year. According to Mark Kirk, its healthcare information solutions consultant, one of the main technical issues facing radiology departments is that in many hospitals, separate islands of diagnostic skill have developed using separate platforms, such as radiology, cardiology, and mammography PACS. He is concerned that busy clinical staff should not be using different systems with multiple data streams when diagnosing complex ailments and creating a patient care plan that prevents collateral drug effects.

“Our PACS provides the ability to view a complete patient history, using IHE (Integrating the Healthcare Enterprise) guidelines to review DICOM and non-DICOM images in the same viewing area, using user-friendly tools and display protocols to show all the relevant data in one interface,” he said.

PACS companies have invested a great deal of effort into improving the visibility of images for two people viewing a monitor at the same time. (Provided by Sectra)

Dr. Marc Garant evaluates a spinal image using a Kodak Carestream PACS advanced cardiac features.

A major benefit of PACS is the added flexibility it brings due to the mobility of data. (Provided by Fuji)

Vendors have not forgotten the comfort of the PACS operator spending several hours a day staring at a screen. (Provided by Philips Healthcare)
This product delivers full-fidelity medical images over existing hospital networks, which makes large infrastructure upgrades unnecessary, according to the manufacturer.

It aims to balance the workload across the entire network system, instructing the server to deliver just the required amount of data to utilise the client PC image display. As a result, users can navigate complex multi-megabyte, multi-slice datasets with relative ease.

On its stand, Fujifilm Medical Solutions is demonstrating the latest upgrade of its Synapse PACS for radiology, cardiology, and mammography. The Synapse version 3.2.1 software delivers a number of user-requested enhancements to increase efficiency and provide greater functionality for the interpretation of digital mammography studies, according to Agfa.

Specifically, the system uses persona-based user interfaces and a fully integrated RIS/PACS/reporting technology. It also provides the benefits of a web-based system with the functionality of a client server application and a pro-active 24x7 global system monitoring and reporting solution, the company explained.

However, vendors have not forgotten the single most important element in the process of handling and interpreting radiological data – the man or woman who could be spending several hours a day staring at a screen. Barco is unveiling new technology designed to help ensure that radiologists can perform their duties efficiently and in comfort.

Its Coronis Fusion 6MP DL diagnostic workstation is based on Hitachi’s IPS-Pro advanced liquid crystal display technology. The 30 inch (or 76 cm) colour monitor can be used as two uninterrupted 3MP displays or a wide screen 6MP display. This gives the freedom to read images from different modalities side-by-side on a single wide-screen viewport.

The device has another important advantage over older LCD screens: it can be read easily at the same time by two people seated alongside each other. Conventional systems tend to suffer from substantial colour and contrast changes when looked at from an angle. This restricts the maximum viewing angle in which contrast levels are high enough to detect subtle lesions to about 70°, but with IPS-Pro that angle is almost doubled to 120°.

Staff at Sectra have arrived at ECR 2008 in a buoyant mood after signing an agreement with British Telecommunications to provide PACS to many of London’s public hospitals. BT is the local service provider for the UK National Health Service’s London Programme for IT. Sectra will, as a subcontractor to BT, begin to assume responsibility for the support and maintenance of the systems of 21 London trusts comprising 25 hospitals performing more than 4 million radiology examinations annually. The company will also supply additional PACS products to these hospitals.

Agfa Healthcare is also striving to make sure that the benefits of cutting-edge PACS are realised more widely than just in the radiology department. It is showcasing the latest refinements to its IMPAX Enterprise system designed to unify all clinical departments within the hospital. It provides an integrated enterprise infrastructure that allows each user to work the way he or she wishes, while sharing information and maintaining a seamless workflow between individual departments, according to Agfa.

Visage CS Thin Client/Server provides tools for CT and MR angiography throughout the enterprise. Left: 3D MIP of a contrast-enhanced CT study, with bone included. Centre: 3D MIP of the same study with bone removed automatically by Visage CS. Right: Volume-rendered image of the same study, with bone removed.
Scientific evidence, ethics and economics lead to intensification of MR screening debate

By Paula Gould

“Happy birthday, Dad! Your appointment with the MR screening clinic is at 10 o’clock tomorrow!” Should the recipient gratefully accept this gift or should he cancel the appointment?

Many more people are likely to face such a dilemma in the future. The advent of whole body MRI has breathed new life into the debate over walk-in screening services. Clinics selling CT scans to the worried well have been criticised for exposing members of the public to unnecessarily high doses of radiation, but purveyors of top-to-toe MRI surveys are at least spared from this charge.

Advocates for preventative healthcare argue that pre-emptive imaging can highlight signs of dormant disease at a stage when the pathology can be treated more easily. But what if the results are unclear? Individuals may then be subjected to further tests and weeks or months of anxiety, only to find that they are perfectly healthy and now have a large medical bill to pay. The risk of false positive findings hangs over all screening techniques, regardless of the modality chosen.

It is all too easy for such discussions to become swayed by emotion. Speakers at this afternoon’s session, Prof. Stephen Eustace, musculoskeletal radiologist at the Mater Misericordiae University Hospital and Cappagh Orthopaedic Hospital, will discuss the cost-effectiveness of screening protocols.

MR systems are now available commercially that offer whole body imaging protocols. What radiologists do with that potential remains to be seen. For example, head-to-toe MR angiography (MRA) is now used as a basis for more comprehensive screening protocols.

MR screening clinic at 10 o’clock tomorrow. Should the recipient gratefully accept this gift or should he cancel the appointment?

"The more uncertainty and risks that exist in a field and the greater the controversies, the more we should rely on good consent procedures," she said.

Delegates will also hear how an ethical approach can be used to build consensus in situations where decision-making may be otherwise influenced by strong opinions or intuition.

“The quality of ethical guidelines in medicine is sometimes not very advanced. We should try to bring forward the methodology of developing ethical guidelines,” Reiter-Thiel said.

Prior to whole-body screening, this 68-year-old woman denied neurological symptoms. MRI of the head (fluid-attenuated inversion recovery sequence) showed large meningiomas with extended perifocal oedema and midline shift. The patient was sent to surgery the next day. (Provided by S. Ladd)
Polish Medical Society of Radiology concentrates on international cooperation and training

By Marek Sasiadek, Wroclaw/PL, and Jan Baron, Katowice/PL

In recent years, the main interests of our society have been international cooperation and the organisation of professional training and scientific activity.

We consider international cooperation a very important part of our activity. Therefore, last year the Board of our Society decided to establish the special position of Vice-president for international affairs (currently Prof. Marek Sasiadek). Our representatives are active in the European Society of Radiology. Our representatives on ESR committees are the following: our National Societies Committee – Prof. M. Szczerbo-Trojanowska, Lublin, Research Committee – Prof. J. Walecki, Warsaw, Education Committee – Prof. A. Urbanik, Cracow, Professional Organisation Committee – Prof. M. Sasiadek, Wroclaw. The growing international role of the Polish Radiological Medical Society has been illustrated by the election of the Past President of our Society, Prof. Małgorzata Szczerbo-Trojanowska, as this year’s ECR 2nd Congress Vice-President.

The Polish Medical Society of Radiology cooperates in the organisation of international meetings, e.g. the Annual Meeting of the European Society for Magnetic Resonance in Medicine and Biology (Warsaw, September 2006). The 33th Congress and 17th Advanced Course of the European Society of Neuroradiology (Cracow, September 18–21, 2008) have been organised by the neuroradiology section of PMSR. The ESR advanced course on Vascular Interventions was hosted in June 2007 by M. Szczerbo-Trojanowska at the Dept. of Neuroradiology and Interventional Radiology, University Hospital in Lublin. The ESOR GALEN Foundation Course on Abdominal/Gastrointestinal Radiology took place in May 2007 in Cracow (Prof. A. Urbanik) and the next ESOR GALEN Foundation Course on Neuro-Musculoskeletal Radiology will be organised by Prof. Szczerbo-Trojanowska in Lublin in June 2008. The Department of Neuroradiology and Interventional Radiology at the University Hospital in Lublin achieved international CIRS/ESIR accreditation on training in Interventional Radiology.

Over the last few years, we have renewed our cooperation with German radiologists; a collaboration conducted in two ways. First, a special German-Polish Radiological Society has been established. It organises annual scientific meetings, as well as fellowships for young Polish radiologists in Germany. Then, a bilateral cooperation between the Polish Radiological Medical Society and the German Radiological Society (DRG) has also been developed. Our society was invited to the DRG meeting in Berlin in 2005, and the DRG was our guest during our Congress in Bydgoszcz last year. Special German-Polish sessions were held during those events.

The education of young radiologists is another ‘mainstay’ of our Society. As in the rest of Europe, we discuss subspecialties, but the situation in Poland is difficult because no subspeciality is officially recognised by the government. We try to influence the Ministry of Health to establish at least a few subspecialties like Interventional radiology, paediatric radiology, and neuroradiology. On the other hand, we are not in favour of subspecialty scientific societies. We believe that one Society constitutes a stronger lobby to represent our interests. However, we have many subspecialty sections within our Society, which are relatively independent. Each of them conducts separate scientific and educational activities.

The Society organises big educational events. The most important of these is the Polish School of Radiology, which takes place twice a year in Kielce. Experts share the most recent knowledge in different fields of diagnostic imaging with several hundreds of participants. Topics are repeated every five years to cover the whole cycle of radiology training. The other major educational event in Poland is the School of MRL, which is organised once a year. This educational activity is supported by the industry.

The most important national radiological event in 2007 in Poland was the 34th Congress of the Polish Medical Society of Radiology, which took place in Bydgoszcz on May 23–25. A total of 26 scientific sessions and 63 educational lectures were attended by 1,500 radiologists and radiographers, including 33 lectures by international guests. In addition, 345 scientific presentations and 82 posters were presented. The scientific programme focused on the following problems:

- Functional imaging in radiology
- Progress in cardiovascular imaging and interventional radiology
- Quality control in diagnostic imaging
- The newest multimedia techniques in teleradiology and archiving.

During the congress, the General Assembly of PMSR elected Prof. Jan Baron, Katowice, as president for the next three years. The next PMSR congress will be held in June 2010 in Szczecin.

The recent scientific topics conducted by the members of our society are: imaging in psychiatry and neuropsychology (Prof. J. Walecik, Warsaw, Prof. A. Urbanik, Cracow, and Prof. M. Sasiadek, Wroclaw), interventional radiology (Prof. M. Szczerbo-Trojanowska and Dr. T. Jargielio from Lublin) and CT and MR imaging of the heart. Last year we decided that the official journal of our society (Polish Journal of Radiology, editor-in-chief Prof. J. Walecki) will be edited both in Polish and English, which we hope will help to increase its international significance. Besides this, we established cooperation with The Neuroradiology Journal, which is now an official journal of the Neuroradiology Section of the Polish Medical Radiological Society.

The main current professional activity of our Society is to support the attempts to improve financing of radiological procedures by the National Health Fund. Many radiological procedures are poorly financed, and we aim to correct this situation as far as possible.

More information about the Polish Medical Society of Radiology is available on our website: www.polskradiologia.org and at our regular stand in the congress lobby. All ECR participants are warmly invited to visit our stand.
Dutch doctors underline ultrasound’s potential value in diagnosis of appendicitis in children

By Frances Rylands-Monk

In the United States, the number of CT scans performed in the paediatric abdomen is high compared with Europe, possibly because doctors fear legal action in the case of a missed pathology or disease. Rather than using CT for appendicitis, many doctors in the Netherlands still prefer to use ultrasound to visualise the swollen, fluid-filled, or normal appendix.

In cases where the appendix is not inflamed, ultrasound can still be of great diagnostic value. Between 2000 and 2005, Dr. Herma Holischer from the Juliana Children’s Hospital, The Hague, noticed that secondary signs appearing on ultrasound as dilated bowel loops or infiltrated fat indicated a high probability of appendicitis, and conversely their absence suggested a low likelihood of appendicitis. This finding increased ultrasound’s sensitivity from 80% to 92%.

Most Dutch practitioners now regard ultrasound to be almost as sensitive as CT for appendicitis detection, but warns that radiation exposure remains a crucial consideration.

“According to the literature, the use of x-rays for medical purposes is now giving more radiation to the population than the natural background of radiation in the environment,” said Beek. “Children have their whole lives ahead of them, and given that it could be 20 years before a radiation-induced tumour appears, this may be a problem.”

Patience with patients is key to effective paediatric imaging, said fellow ECR speaker Dr. Miguel Rasero of the paediatric radiology department, 12 October Maternity and Infant, Hospital, Madrid. Rasero cited high-frequency, high-resolution ultrasound, followed by MRI, as the technique of choice for imaging the paediatric biliary tree.

“My main message is that doctors should perform a ‘dedicated study’ to be useful to the clinician and know the prevalent diseases to look for in children. ‘Dedicated’ means be patient. Children don’t always cooperate. Small structures sometimes aren’t visible due to air. A diagnosis takes time and effort,” he said.

MRI also needs a dedicated examination using small coils, and close analysis of the study, due to the wide range of body size and other differences that exist between, for example, a neonate of 4 kg with congenital problems or a 14-year-old transplantee weighing 80 kg.

“In adults, there are protocols for liver and biliary imaging, and usually the same coils and techniques are used, despite body size. There are very few protocols for imaging children,” Rasero noted.

A paediatric radiologist, or a radiologist with paediatric training, should perform the examination, he maintained. In addition, a close relationship with the clinician is necessary to provide background on surgery performed and pathology suspected.

At today’s session, he will review biliary disorders in children. This is a more difficult procedure than in adults because a portion of the liver, rather than a whole one, is transplanted, resulting in potential problems with connections to the biliary tract.

“Doctors have to resolve such problems without open surgery through invasive techniques, which are particularly useful in transplant problems and the removal of biliary stones,” he said.

Rasero will also discuss congenital problems such as anatomical malformation, choledochal cyst, and biliary atresia.
News from the Italian Society of Radiology

By Luigi Solbiati, Busto Arsizio/IT, SIRM Board Delegate for International Activity and Francesco Sardanelli, Milan/IT, SIRM Board Delegate for Scientific Research

For many years the scientific activity of the Italian Society of Medical Radiology (SIRM) has been mostly aimed at keeping the scientific level of Italian radiology high and updated, and increasing its ‘internationalisation’.

In order to reach these goals, SIRM has focused its efforts on some major topics:
- Organisation of courses and meetings
- Continuous improvement of the Italian Congress of Radiology and of the national journal of radiology (La Radiologia Medica)
- Coordination of multicentre studies on recent advancements of diagnostic radiology
- Submission of scientific abstracts to international meetings and publication of papers in international journals
- Organisation of courses on Scientific Methods for Radiological Research.

Courses and meetings have been organised through the 19 specialised sections (which include organ-specific and diagnostic modality-specific sections) and the 18 geographic regional groups of SIRM. In the year 2007, numerous CME-certified scientific events have been either directly organised or endorsed by SIRM.

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The biennial Italian Congress of SIRM is by far the most relevant radiological event in Italy, attended by approximately 50% of all SIRM members and also with distinguished international radiologists as invited speakers.

Since 2002 the SIRM journal La Radiologia Medica has become a bilingual (Italian-English) journal. Since 2006 it has been published by a major international publisher and in the current year it is likely to be indexed and provided with an Impact Factor.

Many Italian multicentre studies have been coordinated by SIRM in the last few years, mostly focused on recent advancements in radiology, with the main aim of collecting large, homogeneous groups of cases for scientifically significant and reliable clinical reports. The results of four of these multicentre studies (respectively on CT-colonography, coronary artery disease, multimodality surveillance of women at high risk of breast cancer, and breast sonoelastography) were presented at the 2007 Meeting of the RSNA in a dedicated scientific session (‘Italy Presents’), a first-ever event for a national radiological society in the history of the RSNA.

The number of papers published by SIRM members in international journals is continuously increasing. For instance, 99 papers altogether have been published in the three major world radiological journals (Radiology, European Radiology and AJR) in the last two years, 2005 and 2006. Similarly, the number of papers submitted and accepted for presentation at major international radiological meetings is progressively increasing. In 2006, 176 and 278 papers and posters of SIRM members have been accepted and presented at the two major world radiological meetings, respectively ECR in Vienna and the RSNA Meeting in Chicago.

In addition, since 2003, a course on Scientific Methods for Radiological Research has been organised by SIRM, in cooperation with professional statisticians of the Mario Negri Institute (Milan), initially promoted by Prof. Alessandro Del Maschio (University Vita-Salute, Milan) and directed by Prof. Francesco Sardanelli (University of Milan) since 2006.

Topics of the course are the following:
- sensitivity, specificity, predictive values, overall accuracy, likelihood ratios, and ROC curves;
- point estimates, variability estimates, and confidence intervals;
- experimental hypothesis (H1) and null hypothesis (H0), statistical tests, and statistical significance;
- parametric versus non-parametric statistical tests;
- intraobserver, interobserver, and interstudy variability for continuous and categorical measures (Bland-Altman method and kappa statistic);
- study design and sample size calculation;
- sources bias in studies of diagnostic performance of radiological tests;
- technology assessment in radiology;
- how to write a radiological paper.

From 2003 to 2007, the courses were held in 9 locations in Italy, with a total number of 242 SIRM members as attendees. Other editions in four locations and one advanced course will be held in 2008. The increasing number of attendees is shown in Fig.1. Notably, the attendance not only by young residents but also by experienced colleagues (with a mean age of about 45 years) demonstrated the growing interest for learning the principles of radiological research in Italy.

By automating all positioning and image acquisition requirements at the simple touch of a button, you save precious time for your staff and patients.
In the UK study, published in *Lancet Oncology*, the effect on the use of the technology, which is of the ultrasound practitioner has a dramatic impact. A randomised controlled trial shows, the skill level and confidence of ultrasound experts were much more likely to reach an accurate initial diagnosis for adnexal masses based on ultrasound studies, and much less likely to send patients on to major surgical staging procedures to investigate suspicion of ovarian cancer.

Due to major advances in ultrasound in recent years, the majority of adnexal masses can be accurately assessed, said another speaker, Prof. Rosemarie Forstner, professor of radiology at Paracelsus Medical University, Landeskliniken Salzburg, Austria.

Refresher Course
Sunday, March 9, 16:00–17:30, Room F1
RC 1207 Imaging of the adnexal masses
Moderator: M. Weston; Leeds/UK

A. What to do with an adnexal mass: Sonography
M. Weston; Leeds/UK

B. How to characterise an indeterminate adnexal mass with MRI
R. Forstner; Salzburg/AT

C. CT staging for sonographically malignant lesions
C.S. Balleyguier; Villejuif/FR

Effective use of pelvic imaging helps eradicate needless interventions

By Emily Hayes

The ability to spot a benign adnexal mass with high accuracy on ultrasound can save patients from needless, major surgical interventions in the future, but some radiologists are not sufficiently well informed about this subject.

A refresher course on Sunday afternoon will help them brush up on their ultrasound skills and manage the other imaging modalities in following up malignant cases.

"There certainly is a perception that radiologists need help with adnexal masses and their investigation pathways," said Dr. Michael Weston, a consultant radiologist at St. James's University Hospital in Leeds, UK.

Ultrasound is the starting point in the investigation of nearly all adnexal lesions and dictates the next steps in treatment. Advances in ultrasound have helped to cut down on cases that would have been managed surgically in previous years. However, as a new UK randomised controlled trial shows, the skill level of the ultrasound practitioner has a dramatic effect on the use of the technology, which is notoriously operator-dependent.

In the UK study, published in *Lancet Oncology*, Dr. Joseph Yazbek and colleagues at Guy's and St. Thomas' Hospital in London found that ultrasound experts were much more likely to reach an accurate initial diagnosis for adnexal masses based on ultrasound studies, and much less likely to send patients on to major surgical staging procedures to investigate suspicion of ovarian cancer.

Only an estimated 10% to 20% of lesions are indeterminate on ultrasound. In most of these cases, MRI plays a vital problem-solving role, helping radiologists to spot benign from malignant masses and identify whether a mass is truly adnexal in origin, she noted. MRI also proves useful in differentiating benign masses that warrant surgery from those that do not require surgery and can be monitored, such as some types of dermoids.

"Some lesions are indeterminate on sonography, but have characteristics of benign features on MRI. The vast majority of indeterminate lesions can be confidently diagnosed by MRI," she said.

During the session, Forstner will present a simple algorithm involving standard MRI sequences that helps radiologists categorise indeterminate lesions and direct patient management accordingly. Her presentation will also show where additional sequences, such as fat saturation, chemical shift imaging, and contrast-enhanced imaging, may be helpful.

The prognosis and treatment for those who do have ovarian cancer vary greatly depending on imaging findings, said Dr. Corinne Balleyguier, the third speaker at the refresher course. For example, if a patient has advanced disease and all lesions cannot be entirely removed in surgery, chemotherapy should be tried first, followed by surgery after the lesions have shrunk.

In previous years, a range of studies were performed for ovarian cancer staging, such as MR, cystoscopy, chest radiography, and abdominal ultrasound. But nowadays multi-slice CT allows an all-in-one examination of the chest, abdomen, and pelvis in around 40 seconds, said Balleyguier, a radiologist at the Institut Gustave Roussy in Villejuif, France.

"After seeing the location of lesions on CT, surgeons know whether patients are good candidates for surgery. Multislice CT is now the modality of choice for ovarian cancer staging," she said.

Four-slice CT scanners often suffice for staging, but the newer models (16-slice and 64-slice CT) are better for detection of small peritoneal metastases (under 3 mm). Four-slice CT scans every three months or so, with no clear endpoint in mind.

"It comes down to education. Those who are not specialists in ultrasound tend to hedge their bets and think a lesion might be malignant. I hope that my lecture will help radiologists know when it isn’t cancer," he said.

Weston will review the many signs on ultrasound that indicate an ovarian mass is benign, probably benign, or malignant. As part of this review, he plans to demonstrate the hallmark features of certain benign lesions, such as haemorrhagic cysts and dermoid tumours.
The state of teleradiology in France today

The use of teleradiology in France remains unequal regarding both the geographic areas and the type of medical applications. Its origin goes back more than 10 years, mainly in the field of emergency and neuroradiology. For instance, since the mid-nineties, only one Aca-
demic Institution for the Ill de France region provides 24-hour neuroradiological expertise for all regional neurological emergencies. This organisation requires a remote transmission of digital images in order to avoid unneces-
sary patient transfers. The number of French experiments listed by the Ministry of Health is several hundred. The main fields are emer-
gency radiology, obstetrics and cancer imag-
ing according to a report of the National Eval-
uation Agency in 2003. Based on this report, close to 75% of distant medical applications use remote transmission of images.

In 2004, the French State, in a law, defined that “teleradiology – or distant medical practice – makes it possible to carry out medical acts in strict compliance with the rules of deontology but remotely under the control and the responsi-
bility of a doctor in contact with the patient by using appropriate communication tools”. The French State, responsible for the national sanita-
tory organisation, has introduced to this law that “medical organisation of the territory integrates teleradiology”. This sanitary organi-
sation defines the operational modes of tele-
medicine in order “to fulfill the public health requirements of access to care”.

Teleradiology is therefore a medical act, which must be framed by rules of deontology. To allow the harmonious development and good organisa-
tion of teleradiology, a text of profes-
sional and deontological recommendations has now been written. In France, the guaran-
tor of the rules of medical deontology is the Conseil National de l’Ordre des Médecins (CNOM), National Council of the Command

of the Doctors, on the basis of a medical code of ethics recognised by French law.

In its introduction, this text recalls that tel-
eradiology is organised by the radiologists themselves. Teleradiology is justified only in the interest of the patient. It should in no case
divide the patient from the clinical examination carried out by the local physician and should not replace without valid reason an examination carried out on the spot by a local radiologist. Its employment must be jus-
tified by the health of the patient, continuity or permanence of the care, or more generally by particular circumstances of time and place. Teleradiology must not justify the need for imaging equipment in sites where radiologists are absent. The development of teleradiology must fit into the national health organisation to optimise the response to the needs of the population.

This text differentiates teleradiology, which is the medical act, from the remote transmis-
sion of digital images, defined as a technical tool. The use of teleradiology requires rigor-
ous organisation under the direct responsibil-
ity of the radiologists, resting on precise rules, known to all, and formalised by protocols written by the radiologists. These protocols will come into practice when contracts or agreements are signed by the doctors con-
cerned and the hospitals or wards where they work.

The protocols must be provided to the Regional Hospital Agencies (ARH) and their Regional Imaging Committees (IRC) including radi-
ologists of the particular region. These IRCs have an advisory role in the regional organi-
sation of care in Radiology. These contracts/agreements are submitted for ethical advice to the local council of the CNOM where the doc-
tor is registered. In public or private practice, radiologists and physicians are free to sign the contracts or agreements. In addition, the text upholds the need for adequate and sustain-
able funding of teleradiology.

Teleradiology is defined as:

- Tele-diagnosis (or remote diagnosis), which allows a local non-radiologist practitioner to obtain medical imaging examination performed by a teleradiologist
- Tele-expertise where a radiologist in contact with the patient seeks the advice of an expert radiologist (for example, an expert in a specific organ).

The practice of teleradiology needs to respect the principle of justification under the Euratom Directive 97-43, as well as the validation of the imaging request, which remains under the control of the radiologist. Technical monitoring of the examination is performed by a technician working under the control and responsibility of a teleradiologist; the local physician provides patient safety during the imaging procedure and collects the patient’s informed consent. The imaging technique used, the analysis and reading of the examina-
tion are formalised by a report from the teleradi-
ologist. A dialogue with the patient or the local physician requesting the imaging exami-
nation must take place whenever necessary.

The quality of service rendered by teleradiol-
ogy relies on adequate and regular meetings between all the professionals involved, radio-
 logical technicians, physicians, radiologists, and teleradiologists. This ensures compliance at each site with quality criteria necessary for optimal use of teleradiology, validation and upgrade of procedures, and knowledge improvement. If necessary, adjustments of the protocols can be made to optimise the patient care process.

The medical liability of the teleradiologist is a prerequisite. The teleradiologist is respon-
sible for the whole imaging procedure, and the radiological technician works under his responsibility. The physician who is actually present is responsible for the safety of the patient being examined.

The teleradiologist must be a qualified radi-
ologist, i.e. registered by the local council of the CNOM. This text does not allow tele-
radiology to be limited to remote image reading. For the G4 and the CNOM, teleradiology can-
not be reduced to a simple remote transmis-
sion process of digital images, but includes a set of rules and responsibilities for all parties involved. This text has gained a broad consensus as it is approved by the French Society of Radiology (SFR). The legal and financial aspects still require the approval of the Ministry of Health, and are under discussion.

The French Ministry of Health wants to improve the quality of emergency care, because the number of emergency depart-
ments (614) far exceeds the number of avail-
able-on-call radiologists, leading to a short-
age of radiologists on the spot. Teleradiology could favour larger radiological departments (with an increased number of radiologists) taking care of patients of smaller and emer-
gency departments. Tele-expertise must allow for public or private departments or wards to provide expert advice for their patients. The Council of Professional Radiology of France offers its text on the site of the SFR (www.sfrnet.org) and encourages European radiolo-
gists to consider alternative ways to promote teleradiology in agreement with the ESR rec-

ommendations.
Women in Radiology

By Mélisande Rouger

For our third interview within this series, ECR Today spoke to Dr. Soraya Robinson from Vienna. Due to her experiences as a radiologist working in different European countries, Dr. Robinson shared some unique insights into the daily life of female professionals in this field.

ECRT: In Europe, the number of female radiology students has increased considerably over the past few years, reaching for instance 60-70% of the current student population in Austria (source: Austrian Radiology Society, ORG). However, the proportion of female members of the ORG is small (203 women to 572 men in 2006). How can you explain that phenomenon and how does it compare to Finland?

Dr. Soraya Robinson: I am not quite sure how to put out these numbers. I am sure that up to two thirds of medicine students can be female. Even in the radiology specialisation after medical school, there might still be a few more women than men. But of all my female colleagues who started training with me, I cannot recall one who has not continued to work as a radiologist.

However, when it comes to leading a department, I absolutely agree, there are no female managers. I can think of only two radiation therapy female chiefs, and of course in other specialties, but not in radiology. I have never aimed at that type of career, so I am probably less capable of answering this well.

As far as I can tell, there seem to be two reasons for this: many women have got enough on their plate with working and having a family, and I know only very, very few in Austria who would actually want to lead a department. The other reason, regarding who actually gets the job after an interview, is difficult to evaluate from the outside.

In Finland on the other hand, I encountered more female radiologists leading a department, and not only because their family background was particularly supportive, but because they worked doubly hard. Also, they may have known the right people.

ECRT: In your opinion, how well do European female radiologists contribute to research? Do they contribute as much as their male counterparts, and are they equal to men in the research field?

SR: While childbearing is physiologic for women, our society still holds the view that mothers should look after small children, and not fathers. If men contribute, they are ‘helping’, but not doing what should be natural, as if doing household chores and seeing to it that all family members have what they need were also physiological for women. Even in more balanced relationships, it is the mothers who coordinate cleaner, nanny, provide gym shoes, school trip excursion money, buy new pencils, study with their children for the test, etc.

As a consequence, not so many female radiologists have the wish to do research, and consequently there are less female researchers. But if they do science, I am sure it is of equal quality to ‘male research’.

ECRT: In professional life and in science especially, many women observe the existence of a glass ceiling blocking their access to top positions. Do you think this is also the case in radiology?

SR: It definitely is the key issue in all countries and I doubt that many women can get it easily. It really depends on their colleagues and bosses. I am not aware of a leading country in this matter.

ECRT: Do you think women have a different approach to radiology, particularly involving treatments specific to female patients, such as uterine fibroid embolisation?

SR: I have not noticed a different approach to radiology among women.

ECRT: Do you think women have a different approach to radiology, particularly involving treatments specific to female patients, such as uterine fibroid embolisation?

SR: I am sure that many would need it and love it, but personally if I have the choice of spending an evening with my son and husband or another evening out with a lot of ‘unnecessary’ chatting, I would go for the first. So far, I have not regretted it.

Before? How many women were studying when you worked radiology?

SR: Before I started radiology, there were only a few female radiologists in training. From then onwards, many more chose to, and the tendency is still there. I haven’t got the slightest idea why they have not been there before. Night duties for radiologists are definitely better than in any surgical discipline.

ECRT: Are there any official or unofficial networks of female radiologists/physicians in Europe? Do you think such an organisation would be necessary or useful?

SR: I are sure that many would need it and love it, but personally if I have the choice of spending an evening with my son and husband or another evening out with a lot of ‘unnecessary’ chatting, I would go for the first. So far, I have not regretted it.

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New projects developed at Gifu University in Japan

By Gobert Lee, Gifu City/JP

The Department of Intelligent Image Information, Gifu University, is part of the Gifu/Ogaki regional area, focusing on research in the fields of medicine, science, and technology. The aim of the department is to promote industrial, academic, and governmental cooperation in regional areas and to conduct innovative and technological research with a focus on the needs of various industries. The Department of Intelligent Image Information, Gifu University, is one of the key research and teaching facilities in computer-aided diagnosis systems in Japan. Headed by Professor Hiroshi Fujita, the department currently has over 50 academic, industrial, student and associated members.

Under the ‘Knowledge Cluster Initiative’ of the Japanese government, eighteen co-operative research centres were established across Japan in 2002. These research centres/knowledge clusters are supported and fully funded by the Ministry of Education, Culture, Sports, Science and Technology of Japan. The aim of the clusters is to promote industrial, academic and governmental cooperation in regional areas and to conduct innovative and technological research with a focus on the needs of industries. The Department of Intelligent Image Information, Gifu University, is part of the Robotics Advanced Medical Cluster in the Gifu/Ogaki regional area, focusing on research in innovative new medical technologies and the development of state-of-the-art medical equipment such as surgery robots and medical diagnosis support equipment. The three projects presented in the IMAGINE exhibit in this year are all Knowledge Cluster projects and have been established within the Department of Intelligent Image Information, Gifu University. These three projects are computer-aided diagnosis (CAD) systems for the detection of abnormalities, based on brain magnetic resonance imaging (MRI) and magnetic resonance angiography (MRA) images; retinal fundus images, and 3D ultrasound breast images.

CAD on MR Brain Images

Cerebrovascular disease is one of the leading causes of death in developed countries. The prevention of this disease is of paramount importance. MRI and MRA are very useful for the early detection of cerebral and cerebrovascular diseases. The CAD system being developed uses MRI and MRA images to detect lacunar infarcts, unruptured aneurysms, and arterial occlusions. These medical conditions indicate an increased risk of severe cerebral and cerebrovascular diseases. The presence of lacunar infarcts increases the risk of serious cerebral infarction, and a ruptured aneurysm is the major cause of subarachnoid haemorrhage (SAH).

CAD on Retinal Fundus Images

Retinal fundus images are useful for the early detection of a number of ocular diseases that can lead to blindness if left untreated. Examinations using retinal fundus images are cost effective and are suitable for mass screening. CAD systems for detecting glaucoma, diabetic retinopathy, and hypertensive retinopathy using retinal fundus images are the focus in this project. A new digital stereo fundus camera has been developed specially for the incorporation of CAD systems. The stereo retinal fundus image pairs obtained using the new camera are used to generate depth maps of the optic nerve heads and 3D retinal fundus images in the workstation. The computer-generated optic nerve head depth map enables automated quantitative depth measure of optic nerve heads in retinal fundus and is important for the diagnosis of glaucoma.

CAD on Ultrasound Breast Images

Breast cancer is one of the most common causes of cancer death for women. Early detection of breast cancer is the key to simpler treatments and better prognosis. Mammography is effective in detecting breast cancer in women with less dense breasts but is less effective for dense breasts. Ultrasoundography, on the other hand, is effective in detecting breast masses in dense breast tissues. Currently, ultrasound breast images are obtained using conventional hand-held probes. Results of the examinations are operator dependent. A prototype whole-breast ultrasound scanner (ASU-1004) was developed by Aloka Co. Ltd, Japan. Three-dimensional volumetric whole-breast data can be constructed in the workstation from the breast region scans obtained using the new scanner. The system has a capability of image viewing with CAD functions.

The above three CAD projects are planned for five years (until March 2009). The projects are progressing well and clinical evaluation will be starting soon. According to the project plan, commercialised CAD systems on brain MR images, fundus images, and breast ultrasound images will appear by the completion of this project (March 2009).
EIBIR – European Institute for Biomedical Imaging Research

Future strategies

By Prof. Jürgen Hennig
EIBIR Scientific Director

In my role as Scientific Director of EIBIR, I developed a strategic Research Policy Paper for EIBIR, together with the Scientific Advisory Board, which we are pleased to present to the delegates of ECR 2008.

The European Institute for Biomedial Imaging Research (EIBIR) was formally established in January 2006 as a non-profit, limited liability company, dedicated to the coordination of research in Europe. EIBIR has its head office in Vienna, at the headquarters of the European Society of Radiology (ESR). The mission of EIBIR is to create a network of European biomedical imaging institutes, coordinate the development of biomedical imaging technologies within Europe and support the dissemination of knowledge with the ultimate goal of improving diagnosis, treatment and prevention of disease.

The establishment of EIBIR was supported by an FP6 grant under the Life Science programme. EIBIR is managed by a Managing Director, backed by the Vienna Office, as well as by the Scientific Director who chairs the Scientific Advisory Board and is elected by the General Meeting. EIBIR currently has around 200 member institutions, made up of clinical departments (approx. two thirds) and basic science laboratories.

The objective of EIBIR is to ensure the pooling of resources among members to promote a culture of cooperation between them. This will generate critical mass and help coordinate research into new instrumentation, new methods, concepts and technologies. EIBIR will pursue research in biomedical imaging technologies on all levels:

- Molecular imaging to understand the molecular basis of disease and to develop molecular markers for preclinical and clinical research with the ultimate goal to develop applications for diagnosis and therapy management.
- Imaging of cells, cell agglomerations, organ substrates and small animals to understand molecular, physiological, functional and morphological interactions of normal and pathological living tissues, organs and organisms.
- Imaging of animal models to understand disease and to develop therapeutic strategies for translation into human applications.
- The use of imaging in drug development in preclinical and clinical research.
- Clinical research into the development of imaging-based strategies to optimise patient outcome.
- The development of imaging biomarkers for rational diagnosis and therapy management.
- Research into new methods and technologies for imaging and image processing.

EIBIR is an intrinsically multidisciplinary effort which aims to bridge the gap between basic and clinical research, technological and pharmacological development.

For success in this research area, it is necessary to create true multi- and inter-disciplinary research environments where medical doctors, physicists, chemists, mathematicians, molecular biologists, computer scientists, and other technologists and technicians work closely together on the same research projects. This can only be obtained through long-term funding of large research projects. In most cases close collaboration between universities and major research centres is necessary to obtain a wide range of high-level competence, to achieve a research environment of sufficient size, and to obtain the necessary funding of infrastructure and large research projects.

A particular challenge is to achieve increased collaboration between imaging specialists (radiologists and nuclear medicine physicians) and clinicians with knowledge of different organs systems and disease entities. The latter group also knows the particular requirements of imaging in relation to the disease areas they specialise in, and the workflow in clinical departments.

Close collaboration with the pharmaceutical industry, system manufacturers and information technology is a key element in translating new insight gained through biomedical imaging research into biomedical and clinical applications. EIBIR will provide input at an early stage of industrial development to translate scientific insight into industrial innovation.

The activities that EIBIR will undertake to promote the cooperation between its organisations will include:

- Development of a coordinated research plan for EC 7th FP.
- Involvement in the definition of a European Research Plan including large infrastructures for biomedical imaging research (EIBIR).
- Definition, organisation and management of joint or common initiatives.
- Exchange and dissemination of good practice.
- Exchanges of personnel and research education (MSc, PhD).
- Creation of databases on technical infrastructures, scientific expertise, activities, etc.
- Coordination of multi-centre trials.
- Organisation of conferences, meetings, training courses.

EIBIR will develop a structure that is conducive to networking activities in research and will be key to spreading good practice and promoting common initiatives and interoperability in the field of research.

EIBIR will initiate activities on key topical areas through its Executive and Scientific Advisory Board. Even more importantly, it will facilitate activities initiated by its membership and provide support for communication, organisation and coordination of member activities.

EIBIR will also generate publicity concerning new opportunities for access and training courses for potential users.

Key scientific focus of the coming year

Molecular imaging has been identified as one of EIBIR’s key areas of strategic interest. The current focus of EIBIR is the development of research initiatives for the EC 7th FP. The large scale integrated project ENCITE (European Network for Cell Imaging and Tracking Expertise) coordinated by EIBIR has been approved and is currently in contract negotiations with the European Commission. A workshop on this topic is planned to be organised in Prague together with Prof. Milan Hajek and Prof. Eva Wiro Niessen and to several initiatives within the FP7 ICT call ‘Virtual Physiological Human’, which are currently under evaluation.

If you would like to get more detailed information on EIBIR and its networking activities we are pleased to meet you personally at the EIBIR lounge during ECR 2008 on the entrance level of the Austria Center Vienna.

More information: www.eibir.org

Sykova later in 2008. A chemistry platform led by Prof. Silvio Aime has also been established to support EIBIR activities with highly skilled teams in the design and fabrication of innovative imaging probes.

A further important strategic issue for EIBIR is the development of Imaging Biomarkers to facilitate collaborative efforts in performing assessment studies of diagnostic imaging technology and image-guided therapies. EuroAIM (European Network for the Assessment of Imaging in Medicine) has been initiated by Prof. Myriam Hunink as a virtual network of investigators who provide an infrastructure to assess imaging technology in medicine. EuroAIM has started discussions on its members through a Wiki group in order to develop strategies to promote the appropriate and evidence-based use of imaging technology.

Further activities to develop the use of Information and Communication Technologies for medical imaging have led to the establishment of an Imaging Processing Platform led by Prof. Manfred Pernot.
Image Quantification: the key to early detection?

By Maribel Adame, Annemarie Hanekamp

Medical imaging, supplemented with quantification software, is key to helping understand and unravel the nature, cause and hopefully support treatment of many diseases. Early detection of disease is often crucial to increasing a patient’s chances of survival and improving the quality of life. Image quantification software can reduce labor-intensive, subjective and time-consuming manual interaction, and as shown below, play a crucial part in early diagnosis.

Medis and its research partner LKEB (Division of Image Processing, Leiden University Medical Center) have been working on two projects, QPlaque® MR and QBrain®, that can assist radiologists in the clinical decision-making process and play a role in early detection. Both projects will be demonstrated at IMAGINE 2008.

QPlaque MR

Today, one of the biggest causes of death in the western world is atherosclerosis. This systemic disease of the vessel wall can occur in the aorta, carotid, coronary and peripheral arteries and can lead to heart attack or stroke. Carotid atherosclerosis is characterised by the accumulation of lipid, protein, and cholesterol esters leading to plaques inside the vessel wall.

MRI can non-invasively visualise the plaque deposited in the arterial wall at the early stages, enabling identification of subjects at risk.

Medis is developing a computer-aided diagnosis system (QPlaque MR) for semi-automatic detection of atherosclerotic plaques in carotid arteries from combined magnetic resonance angiography (MRA) and multi-sequence vessel wall images (VWI). Lumen and outer wall contours are first detected automatically using a minimum cost segmentation approach in VWI (the images have been previously registered and corrected for coil-inhomogeneity) followed by a statistical pattern recognition system to identify and segment haemorrhage, lipid-rich necrotic core and calcium (see Fig. 1). This process yields clinically relevant parameters to assess the risk of stroke, such as thickness, area and volume of diseased vessel walls, plaque components and the fibrous cap thickness.

QBrain

Multiple Sclerosis (MS), which has a prevalence ranging between 1 and 150 per 100,000 people, affects the central nervous system and can lead to disability as time advances. MS is a chronic, inflammatory, demyelinating disease which affects the neurons.

Brain MRI is often used during the diagnostic process; it shows the areas of demyelination as bright spots. The number and volumes of these spots (lesions) can be tracked over time to follow the progress of the disease. Accurate segmentation of the lesion is of utmost importance.

QBrain can automatically segment the white matter lesions in a fast and accurate manner, using the underlying grey values of FLAIR and T2W images. The images are automatically registered following an atlas-based segmentation of the intracranial volume. QBrain supports comparison analysis of multiple time point examinations of a patient (see Fig. 2).

Alzheimer’s disease (AD), whose clinical signs are cognitive deterioration and declining ability to perform daily activities, affects more than 26 million people worldwide. A frequently-seen risk factor for AD is Mild Cognitive Impairment (MCI), which is diagnosed when an individual has cognitive impairments beyond those expected for their age and education.

Most MCI patients do not meet the neuropsychology criteria for AD, but their pathologic findings suggest a transitional stage of developing this disease. Since AD patients show a gross atrophy of the affected regions, like the temporal lobes of the ventricles, volume changes in these parts could give more insight into the MCI converting process.

Medis is developing an automated shape-modelling and analysis approach to detect shape changes in the ventricles, which could systematically differentiate MCI-converters from non-converters. Significant changes have already been found on the temporal lobes of the ventricles between AD and normal individuals (see Fig. 3).

Identifying these MCI biomarkers would make it possible to screen MCI patients and give an indication of the likelihood that AD will follow, allowing specific treatment at an earlier stage.

As new MR techniques, contrast agents and better image quality arise, so Medis continues its research to always offer state-of-the-art and high-quality post-processing software, contributing to early diagnosis in everyday clinical practice.

Fig. 1: Lumen and outer wall contours are first detected automatically using a minimum cost segmentation approach in VWI.

Fig. 2: QBrain supports comparison analysis of multiple time point examinations of a patient.

Fig. 3: QBrain shape analysis.
Imaging gives an inside look at stem cells

By Karen Sandrick

Molecular imaging techniques are providing a window into the world of stem cell therapy.

Stem cell therapies are being developed with the hope of repairing tissue that has been damaged by stroke or myocardial infarction, replacing a poorly functioning hormone, or reversing the action of cancer cells. The effect of these therapies has been difficult to track, however.

“Molecular imaging techniques are essential for answering key therapeutic questions,” according to Prof. Oliver Clément of the radiology department of the Georges Pompidou European Radiologic Hospital, Paris. “Do the stem cells reach the targeted organ? Are they functional? Can they proliferate? Can they differentiate? Can they move and relocate? During this morning’s final instalment of the highly successful mini course on molecular imaging, he will discuss the clinical applications in cancer and inflammation.

Another speaker at today’s session, Prof. Matthias Hoehn of the Max-Planck Institute for Neurological Research in Cologne, Germany, notes that there are clinical studies in relation to the heart and also to liver disease where clinicians have injected stem cells into patients. In some cases, they claim to have seen patient improvement, but in none of these cases can they justify that the stem cell implantation was the real reason behind the improvement.

“If you can demonstrate where the cells go and observe that they really do integrate into heart muscle, then you have much better proof of saying that your treatment makes sense. So there is a need for noninvasive monitoring to observe where the stem cells go and what they do,” he said.

Hoehn, Clément, and the third speaker, Dr. Milan Hajek, will discuss the most recent developments in imaging cellular therapy.

“Radiologists will see what is the cutting edge in the experimental world, because what you see today in the experimental world will sometime in the future be transferred into the clinic,” Hajek said.

Hoehn’s team is using a cell tracking technique that incorporates a contrast agent into stem cells before transplantation so the cells can be viewed against the host tissue background. The researchers also are working on innovative contrast agents that are incorporated into stem cells in an inert state and are later activated by the cells.

“This is what we call responsive or smart contrast agents. They are activated by certain enzymes in the cells that switch on the contrast agent only when the cell is in a particular state, such as when it proliferates,” he explained.

Another approach involves the use of transgenic stem cells that generate their own contrast. The idea is that these cells will generate a signal that is visible under MRI as the cells move from one physiological state to another.

“What we want to do with treatment is to bring back lost functional deficits, deficits to be cured by the implantation of stem cells. We want to observe by noninvasive imaging in a longitudinal time profile study what the cells do after they are implanted, where they go, what their dynamics are, and what their functional state is. We want to observe this in connection with looking at the lesion at the same time, to see if there is an interaction between the lesion and the implanted cells,” Hoehn said.

Cell tracking is currently done only in rodents and other small animals. It is not a technique for the clinic today, Hoehn acknowledged.

“What we have today in the rodents with our high-field MRI systems, you cannot necessarily expect to see used in scanners with humans,” he said. “I think that with some technological improvement, a couple of years down the road, you might well imagine that this could be done in humans, too.”
News from the European Society of Urogenital Radiology (ESUR)

By Lorenzo Derchi, Genoa/IT, and Sancha Marcos, Sheffield/UK

Since its foundation in 1990, the European Society of Urogenital Radiology (ESUR) has established itself as the main professional body in Europe for radiologists with a special interest in the field of urogenital imaging and contrast media research. ESUR is dedicated to the development of this subspecialty and to expanding the educational and research activities in this field. The annual scientific meeting of ESUR offers the opportunity for exchange of professional knowledge and experience. In addition, these meetings are very important for presenting new research and updating knowledge in this specialised field. The ESUR scientific meeting is held in a different country every year and is attended by radiologists and clinicians not only from Europe but worldwide.

Each symposium has always focused on a specific topic. The ESUR meeting in 2008 will be held in Munich (September 11–14) and will pay special attention to radiology of the prostate, pelvic floor and lower urinary tract. The 2009 meeting will be held in Athens in mid-September and the main theme of the meeting will be urogenital malignancies. The 2010 meeting will be held in Bruges and will focus on image-guided therapy.

ESUR has always given special attention to contrast media research and the safety aspects of these agents. Since its establishment in 1994, the society’s Contrast Media Safety Committee has published 20 important guidelines on the safe use of contrast media. These guidelines are implemented worldwide and translated into many languages. Some of these guidelines have been among the most cited papers in European Radiology. All the guidelines are freely available on the society’s website www.esur.org.

The Committee is currently dealing with the serious condition of Nephrogenic Systemic Fibrosis (NSF), which may develop after the administration of gadolinium-based contrast agents. Guidelines on how to reduce the risk of this complication have recently been produced by the academic members of the Committee and published on the ESUR pages of European Radiology (September 2007). The society has a special area for NSF on its website, where radiologists can provide information about new cases of this condition. Guidelines on imaging of uterine tumours and pelvic floor dysfunction and on imaging paediatric patients with urinary tract infection are currently under preparation by the ESUR subcommittee on Female Imaging and the Paediatric Working Group on urological imaging respectively. These topics have already been discussed in the society meetings and the guidelines should be published on the society website in 2008.

The society believes that strong clinico-radio logic cooperation is of vital importance in modern medical practice and has established strong scientific links with clinical societies such as the International Society of Nephrology and the European Association of Urologists. ESUR members are invited to speak on imaging topics at the meetings of these societies. Nephrologists and urologists from these societies are also invited by ESUR to provide clinical perspectives at the society’s annual symposiums. Sharing and exchanging points of view with clinical colleagues has become one of the highlights of the educational programme of the ESUR annual scientific meetings. The ESUR also enjoys close cooperation with the Society of Uro Radiology (SUR) in the United States, with regular input to ESUR meetings from our American colleagues and from our members at the SUR annual scientific meetings. Every four years a combined meeting between ESUR and SUR is organised with the venue alternating between the USA and Europe. The last combined meeting was held in Bonita Springs, Florida in April 2007 and the next one will be in Bruges, Belgium in 2010.

Concerning current research in urogenital imaging, a recent survey of research performed by ESUR members has shown that the most attention has been given to imaging of tumours of the kidney, prostate and female genital tract. These research projects have highlighted the importance of image-guided minimally invasive therapies including percutaneous ablation of renal cell carcinoma, focused high-intensity ultrasound therapy of prostatic tumours, and embolisation of uter ine fibroids. In addition, renal and prostatic imaging at molecular and cellular level is currently under investigation with exciting preliminary results.

We are fortunate in ESUR that our worldwide members enjoy good friendship, which has developed over the years. Getting together every year at the annual meetings of the society has strengthened the camaraderie amongst our members. In addition, the society organises an annual dinner during the European Congress of Radiology, which is becoming an important ‘family reunion’ for the society members.

News from the Portuguese Society of Radiology

Dr. José Venâncio, Lisbon/PT, President of the Portuguese Society of Radiology

The Portuguese Society of Radiology was founded on 6th June 1931. Throughout its history it has strived to improve the level of knowledge of Portuguese radiologists and to answer the numerous challenges that our specialty has faced over the years. Today the times are changing and so are the challenges we face.

For the last 20 years or so, imaging departments have been substantially modernised in order to encompass all the newest cross sectional modalities. More than 80 MR and 200 modern MDCT units have been installed nationwide, both in public and private sectors. The public perception of our specialty and recognised impact on healthcare has led to a new interest in radiology, conducive to a continuous growth in the number of national specialists, which has doubled in the last ten years.

An investment in postgraduate education has been made by the Portuguese Board of Radiology and the Portuguese Scientific Society in defining and refining the core curricula (4 years) to reserve sub-specialisation for the fifth year of residency. Both regulators made substantial efforts to promote adequate post graduate initiatives at national and international levels including training periods at reference centres. Conditions that were generated favour a research environment for the youngsters who are now more prone and strongly encouraged to submit abstracts and to pave the way for incorporating clinical research into their daily practice.

The Portuguese contribution to European meetings has been growing at a considerable pace, as is the case at this current ECR. We have also hosted some European congresses with considerable success, such as last year's ESGAR meeting in Lisbon. This year we will be hosting the Congress of the European Society of Cardiac Radiology (ESCR) in October, and next year the CIERE Congress.

The government recently launched a clinical doctoral programme for young residents, in order to promote differentiation in an academic thinking context. Several structural modifications are now taking place in clinical practice in our country. Financial constraints are leading to service concentration and, like everywhere else, there is a growing demand for assistance-based radiological services. In the short run this may jeopardise some of the goals that were initially appointed, creating a bias towards money-based activity to the detriment of university activities. At the present date it is difficult to foresee how radiology will redress itself in this political context, but several national universities are now on the way to creating more powerful research networks including medical imaging. This may well be the launching foundation for future development of scientific and continued research activities, matching basic with clinical research and enlarging the horizon to translational radiology. At least, this is the best of our expectations.
Teleradiology is more than the simple transmission of images

By Milisande Rouger

Increasingly used over the last decade, teleradiology still divides the radiological community. Undeniable advantages, such as radiological services around the clock and a better service at a lower cost, confront fears of lesser quality and misuse in the current absence of any specific legislation.

“Attitudes towards it among professionals range from effusive to decidedly pessimistic,” sums up Prof. Lluis Donoso, from Sabadell, Spain, who will chair the session “Teleradiology: film reading at the sea side!” today at ECR.

Together with 4 other lecturers, who repre-

sent both ends of teleradiology, namely the provider and the receiver, Donoso will try to convey another view of the state of the art of teleradiology in 2008. “Our main objective is to give the idea that teleradiology could actu-
al help radiologists,” he says.

Local teleradiology has been used in Europe for about 15 years. In Spain, for instance, a number of community hospitals rely on tele-

radiology in their daily work, since it pro-

vides a bigger network of specialists. Donoso’s department at University Hospital of Bar-
celona developed such a system in 1999 and now provides interpretation to 10 hospitals in Catalonia and Costa Brava.

Teleradiology is particularly useful to remote populations, whose local hospitals rarely employ a specialist. In Norway, where 30% of the population lives in a remote area, entire hospital departments are run by a distant radi-

ologist while just one radiographer is physi-
cally present.

“It is difficult to recruit qualified personnel in those areas, so it is good to have teleradiology,” says Prof. Jan Størmer, from the University Hospital of Tromsø, Norway.

However, concluding that teleradiology is the best solution for such populations is poten-
tially dangerous, he points out. “Radiology is not only about reading images, it is also inter-

ventional, it needs experienced professionals, and sometimes it’s just about touching or talk-
ing to the patient. It can be degrading for the medical community to see teleradiology as the only solution here,” he insists.

The lack of contact between the patient and the radiologist who interprets images might also lead to a loss of quality. But most radi-

ology suitable for teleradiology doesn’t need a direct dialogue between the radiologist and the patient, according to Størmer. “Only in 10% of the cases, I need to talk to and eventu-

ally re-examine the patient physically when I have a doubt about the clinical indication or diagnostic conclusion,” he says.

Another big argument in favour of teleradiol-

ogy is the 24/7 availability of image interpre-
tation it offers. The US company NightHawk

Pros provides 70% of American hospitals with US board certificated radiologists all around the world, so that the interpretation process never stops. Such a service also provides practices with a better quality at a lower cost, since night shifts are expensive and people work better during the daytime.

In Europe, outsourcing has been the subject of much debate and questioning over the last 5 years. It all started in the United King-
dom, where long waiting lists for radiologi-
cal examinations prompted the government to buy the service of originally one private provider, Alliance Medical. Today, 4 comp-
panies are providing this service in different regions of the country. They traditionally send a truck directly to the parking lot of a practice, where the patient is redirected to receive an examination. Images are then sent to various reporting centres all around the world for interpretation, and the report is sent back to the original UK practice. “And all the while, not a single British radiologist has been involved in the process, not even to talk to the reporting clinicians,” says Prof. Iain McCall, from Oswestry, UK.

While the quality of interpretation surely depends on the skills of the radiologist who does it, cultural and scientific discrepancies do exist between radiologists of different countries and continents. These profound differ-

ences might undermine patient safety, let alone the language problems that might arise in the process.

The first step towards guaranteeing patient safety is to clearly state that this responsibility lies in the receiver’s hands. This necessity could be challenged by EU policies, namely the EU directive on cross-border healthcare, says McCall. “Even though it is very clear on the quality of care and quality standards for the patient, it is very short on the practicality of healthcare,” says McCall, who campaigns for the addition of a paragraph on teleradiology in the directive. “It should clearly say that the responsibility for the quality of teleradiology service lies in the country where the patient comes from. But teleradiology is not yet treated as a proper medical service,” he explains.

A direct dialogue between all radiologists involved should also be promoted, and the patient should be informed about the service and asked to give his or her consent.

In the absence of any specific legislation, a contract signed between the receiver and the provider for each clinical case guarantees quality, says Donoso. “Teleradiology is more than just a simple transmission of images, it is a transmission of clinical expertise,” he says. To ensure it, a deal must be made between the receiver and the provider, both radiologists, on each clinical case in an integrated model, where work is clearly divided between clini-
cians and follows a protocol.
The paintings ‘Adam’ and ‘Eve’ were created by the German master Albrecht Dürer in 1507, exactly 500 years ago. Dürer painted these works while living in Nuremberg, in the north of Bavaria, which establishes a close tie between him and me, being a Bavarian president of ECR 2008.

Of course, there are even more and closer ties, and thus more reasons to choose Dürer as a contributor to the official ECR 2008 poster. Dürer was one of the first and foremost representatives of humanism and the Renaissance in German fine arts, which drew heavily upon science as a basis for art. Whereas medieval painting focused on Christian religion, Renaissance art began to give special emphasis to the human as individual, even when still using biblical motives.

Aesthetically as well, these paintings signify a break with medieval compositions; Dürer strives to reach perfection in proportions, founded on the theory of the ‘golden section’ and derived from ancient ideals, especially from Euclid. The human body is discovered anew by the Renaissance painters, recognising for the first time the individuality of human beings. At the same time they rely on scientific observations. Both paintings, ‘Adam’ as well as ‘Eve’, were created right after Dürer’s return from his second voyage to Italy. It is therefore not surprising that they are strongly influenced by Italian art, mainly that of Venice.

We know that both Michelangelo and Leonardo da Vinci systematically dissected corpses, against the explicit law of the Catholic Church and long before any anatomist did so. Like Leonardo, Dürer explores the beauty of nature and the human body, combining the idealism of Italian artists with the realism of German painters, thus marking the transition to mannerism.

In this respect, one might also detect an analogy to our specialty, radiology, which is based on exact scientific findings and methods, and a conscientious observation of reality. The ideal of ‘normal’ anatomy is compared with the specific situation of the individual patient; a diagnosis of pathological change is derived from observing deviations. The underlying processes of the neuronal treatment of images and their conversion into a radiological diagnosis can only be seen as approaches.

I would like to point out another connection to ECR, the pan-European dimension. The paintings are exhibited at the Prado in Madrid. They came into the possession of Christina of Sweden who gave them to Phillip IV of Spain. Old copies of ‘Adam’ and ‘Eve’ can be found at the Galleria degli Uffizi in Florence. This also emphasises the pan-European cultural tradition, a major concern for the European Congress of Radiology.

By Prof. Maximilian F. Reiser, Congress President

The Story of the ECR 2008 Poster

Adam and Eve

‘Adam’ and ‘Eve’ by the great German master Albrecht Dürer inspired Prof. Maximilian F. Reiser and his wife Dr. Elke Reiser, two true connoisseurs and lovers of fine arts, to commission the official ECR 2008 Poster. (© Museo Nacional del Prado, Madrid)
ERS meets General Practitioners
More structured feedback from radiologists could be a good thing

By Mélièsante Ronser

Dr. Henk Stiggelbout, a Dutch general practitioner, has been working in North East Wales, UK, for more than 18 years. He explains how he collaborates daily with radiology and how this partnership could be improved.

ECR Today: ‘ERS meets GPs’ is the first of a new ECR programme featuring partner disciplines. What do you think of such an initiative? Is it welcomed among GPs? Dr. Henk Stiggelbout: I think meeting partner disciplines is an excellent idea. On the occasions that I have spoken with radiologists, it has been helpful and educational. More structured feedback from hospital radiologists about how they feel communication between GPs and themselves could be improved could also be a good thing. As always, ‘everyone is busy’ and finding mutually convenient times and methods is going to be the challenge!

ECRT: Are British GPs regularly invited to take part in such initiatives by other specialities? If yes, which ones? HS: Certainly not. It is haphazard and totally dependent on individual consultants’ enthusiasm.

ECRT: The lectures in ‘ERS meets’ will focus on artery-related diseases. Are there other diseases that imaging could help GPs to diagnose better than using other methods? HS: I feel a good GP would like to know the correct indications for ordering the tests he or she can order. This should not transform the GP into a mini specialist. Most GPs probably feel they are doing a host of work that traditionally specialists have done and without the recognition for it.

ECRT: How often do you refer to imaging? Do you know how often GPs refer to imaging in the UK? HS: I do refer to imaging mostly for x-rays and ultrasound investigations, and this many times a day. I do so less for CT and MRI. These are not dynamic MRI scans. I sometimes refer for a bone scintigram in the case of possible bone metastases.

ECRT: Do you enjoy collaborating with various specialities, in particular radiologists? HS: It actually happens very infrequently. In my case, it is only when I am unsure of the indication or wish to discuss the urgency of a request. Generally, I feel the radiologist appreciated being consulted.

ECRT: Do you think GPs should cooperate more with radiology / other specialities, and, if yes, which ones? How exactly should those physicians cooperate? HS: Personally, I would love to have feedback on my standard of requesting. I fear many GPs would hate to feel criticised and I imagine that other specialists would hate to feel they were upsetting GPs.

ECRT: Why did you choose to become a GP? HS: I liked the idea of a job with varied work that offered the choice of working anywhere in the world. From the outset I knew that I was looking for a three- or four doctor partnership, to avoid professional and social isolation.

German Radiological Society certifies first patient-image disk writing tools at ECR 2008

By Michael Onken, Oldenburg/DE

At ECR 2008, the German Radiological Society (DRG) for the first time granted certificates to manufacturers of products that create patient-image disks in accordance with recommendations issued by the DRG. These certificates are expected to guide German doctors in their search for a good way of burning a patient’s diagnostic images onto a CD. Because of the interest from other societies both in Europe and abroad, an English version of the system is in preparation.

Diagnostic images such as x-ray photographs or tomographic images are nowadays very often produced digitally and may be stored, processed, and communicated electronically. When patients are referred to another doctor or want to keep copies of their own medical images, these images are often burned onto a CD, a so-called patient-image disk. This is a simple and cheap way of transporting original diagnostic quality images.

Unfortunately, recipients of such CDs in many cases still run into problems when trying to retrieve and display the images. This may happen because many surgeries and hospitals are not well equipped for handling patient-image disks, but also because the disks are produced by different tools in different formats and may contain errors. This problem is tackled by the DICOM (Digital Imaging and Communications in Medicine) standard. DICOM is used worldwide as a comprehensive standard for medical imaging and also regulates the production of patient-image disks. If there are problems reading the images from disk, it’s very often because the relevant standard has been ignored or misinterpreted.

The German Radiological Society has raised a solution to this problem in collaboration with OFFIS (Oldenburg Research and Development Institute for Information Technology Tools and Systems), which is an independent institute with many years of DICOM experience. They offer a manual on how to handle patient-image disks and have developed a specification for the format of such disks, based on the DICOM standard and the recommendations of the IHE (Integrating the Healthcare Enterprise) initiative. Manufacturers of tools for writing patient-image disks are invited to subject their products to independent, intensive testing for compliance with the DRG’s specification. Upon successful completion of these tests, the manufacturer is granted a certificate by the DRG which may be used in advertising.

The first of the DRG’s certificates for manufacturers of patient-image disk writing tools were granted on March 7, 2008 to IMAGE Information Systems (Oldenburg), to OCTAVE (Oxford) and to CERNER Deutschland GmbH (Herzogenrath) for their products Vision PACS 3.0 and Vision PACS 6.0. Other manufacturers’ products are currently being tested and are expected to further increase the number of certified tools on the German market.

More information on the German Radiological Society’s certification project and a list of all certificates granted may be obtained from the website http://www.dicom-cd.de
Israel shares experience in emergency radiology

By Mélanide Rouger

ESR meets Israel

Sunday, March 9, 10:30-12:30, Room A

EM 3 Views and impressions from radiology in Israel

Prof. Moshe Graif: Israeli radiology is mainly influenced by both European and North American radiology. Being from a small country, Israeli radiologists often search for wider clinical experience and sub-specialty teaching abroad, mainly in the USA and Canada, who provide many fellowship positions, but also in Europe (UK and France).

The added value of the local know-how is much determined by the growing hi-tech industry which promotes research projects and β sites – a classic example is coronary CT angiography in medical literature as articles, chapters and books published by Israeli radiologists.

Other expertise, unfortunately, has been acquired by facing daily challenges in emergency medicine such as poly-trauma and multiple casualty events.

ECRT: How is terrorism affecting your profession?

MG: The necessity to deal with terror mass casualties and full-scale wars led to the development of medical and radiological routines that are incorporated into working patterns and hospital preparedness schemes. The acquired radiological experience has been published in medical literature as articles, chapters and books (e.g. “Trauma imaging in the thorax and abdomen” by Alexander Rosenberger [et al.]).

ECRT: How many victims of terrorism are treated by Israeli radiological services each year?

MG: Approximately 500 Israelis were killed in 150 suicide bombings taking place in the years 2000 to 2006 and more than 8,000 were wounded over the same period.

Mass-casualty event related imaging may account (in the height of terror activity) for about 1% of the annual national volume of emergency radiology:

- It may look a small percentage, however, data show that more than 50% of the casualties are evacuated to the nearest hospital within 5-20 minutes (50-150 patients at a time). Therefore, hospitals situated near such an event suffer an overwhelming pressure on all their medical resources.

ECRT: What are the typical injuries caused by terror attacks and how do you diagnose them?

MG: Terror injuries can be divided into four categories:

- Primary blast injuries – caused by the blast wave travelling through the air and affecting mainly lungs and eardrums.
- Secondary injuries – caused by objects propelled outward by the explosion. Soft tissues including blood vessels, nerves and orthopaedic structures are mostly affected by those penetrating injuries.
- Tertiary injuries – displacement of the whole body by the blast and then impact onto fixed objects. Closed head and cervical spine injuries as well as orthopaedic injuries are frequent examples.
- Miscellaneous injuries such as burn, inhalation and crush injuries.

The imaging studies taken initially are plain radiography and focused on abdominal US for trauma, performed usually at the Emergency Department or triage area, followed by CT and interventional radiology later on at the level of the main department.

ECRT: What are the lessons learned by Israeli emergency radiology from terror attacks?

MG: The experience gained in Israel has been published in emergency medicine literature (Singlet, Halperin and Assaf) as well as the radiological equivalents (Rosenberg, Benaim, Sonna, Shalem, Angel and others).

Several Israeli radiologists are delivering refresher courses and seminars at the RSNA and other medical forums, as awareness of the threat of terrorism is growing.

ECRT: How is radiology in Israel structured?

MG: The Israel Radiological Association was founded in 1927, and a decade later it received major professional support from Jewish radiologists who emigrated from Europe during the 30s. The current status of radiology in Israel is that of a modern, westernised type of practice.

The radiological community in Israel provides a broad spectrum of up-to-date professional services in all the fields of imaging. The availability of hi-tech equipment (CT, MRI) in Israel is regulated by the state for purposes of technological containment. In spite of the relatively low number of equipment units per population, the throughput of patients per unit of equipment is one of the highest in the OECD countries. Radiologists in Israel share similar professional problems with their colleagues elsewhere, such as increased workload, budget restrictions, growing pressure on academic time and turf battles.

ECRT: How many radiologists are working in Israel today? What is the proportion of men, women and young people?

MG: To date, the ISRA has more than 500 members (including residents). The major part is composed of young radiologists and a significant percentage (~44%) are women radiologists.

ECRT: How do you see the demography evolving within, let’s say, the next twenty years?

MG: Radiology has been one of the fastest growing medical specialisations of the last 25 years and this trend is going to continue at least into the next decade.

Clinical medicine has developed an absolute dependence on laboratory and imaging tests. Laboratory exams are automated – while radiology on the other hand is interdependent by physici- ans (so far), and the number of radiologists is expected to increase in order to match the demand. The awesome increase in the demand for imaging services has put a heavy strain on radiological departments.

Paradoxically, health systems at both ends of the spectrum, from the private ‘fee for service’ to the governmental ‘all included’ service sys- tems, have difficulties in meeting the demand, especially in the height of terrorism and the rest of the world? On which particular matters is Israeli know-how specific/unique internationally?

Prof. Moshe Graif: Israeli radiology is mainly influenced by both European and North American radiology. Being from a small country, Israeli radiologists often search for wider clinical experience and sub-specialty teaching abroad, mainly in the USA and Canada, who provide many fellowship positions, but also in Europe (UK and France).

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ECRT: How is radiology in Israel structured?

MG: The Israel Radiological Association was founded in 1927, and a decade later it received major professional support from Jewish radiologists who emigrated from Europe during the 30s. The current status of radiology in Israel is that of a modern, westernised type of practice.

The radiological community in Israel provides a broad spectrum of up-to-date professional services in all the fields of imaging. The availability of hi-tech equipment (CT, MRI) in Israel is regulated by the state for purposes of technological containment. In spite of the relatively low number of equipment units per population, the throughput of patients per unit of equipment is one of the highest in the OECD countries. Radiologists in Israel share similar professional problems with their colleagues elsewhere, such as increased workload, budget restrictions, growing pressure on academic time and turf battles.

ECRT: How many radiologists are working in Israel today? What is the proportion of men, women and young people?

MG: To date, the ISRA has more than 500 members (including residents). The major part is composed of young radiologists and a significant percentage (~44%) are women radiologists.

ECRT: How do you see the demography evolving within, let’s say, the next twenty years?

MG: Radiology has been one of the fastest growing medical specialisations of the last 25 years and this trend is going to continue at least into the next decade.

Clinical medicine has developed an absolute dependence on laboratory and imaging tests. Laboratory exams are automated – while radiology on the other hand is interdependent by physici- ans (so far), and the number of radiologists is expected to increase in order to match the demand. The awesome increase in the demand for imaging services has put a heavy strain on radiological departments.

Paradoxically, health systems at both ends of the spectrum, from the private ‘fee for service’ to the governmental ‘all included’ service sys- tems, have difficulties in meeting the demand, either due to shortage of radiologists willing to take part in this kind of work, or by shortage of post allocations by public administrations.

In Israel, which belongs mainly to the latter system (public), we are experiencing a decrease in residents’ positions, although the number of applicants is increasing. This paradoxical phenomenon is due to conversion of junior positions to senior staff ones, which is related to the increase of complex examinations (CT, US, MRI etc.) in the sector, requiring higher ranked staff for interpretation.

ECRT: How is Israeli radiology meeting the growing need for a multidisciplinary approach in radiology?

MG: At hospital level, the multidisciplinary approach is reached by regular clinical-radiological meetings with the wards and by taking active part in sub-specialised clinical work- groups. The introduction of PACS in most hospitals in Israel enables better communication, consultation and joint multi-disciplinary decision making, using the VPN system. It allows parallel evaluation of patients by physi- cians from various disciplines.

By trying to keep updating and being involved on all fronts, especially in cardiac CT, vascu- lar oncological IR and PET/CT, and by being alert to the continuous challenges, radiologists in Israel try to avoid professional vacuum on one hand but provide prompt and effective reaction on the other. Cooperation and timed services are useful in avoiding turf battles.

Since the early 2000s our radiological society has been more actively involved in regulatory processes such as national guidelines and policy making, much of it due to the Israel Medi- cal Association, which is aware of the impor- tance of multi-disciplinary cooperation.

ECRT: Skilled staff are a prerequisite for the implementation and maintenance of high- quality radiological services – what do you do to promote postgraduate education and train- ing in modern imaging methods?

continued on page 27
Radiology is on the critical path of just about every major acute illness

Prof. James H. Thrall from Boston, MA/US, will present the Josef Lissner Honorary Lecture entitled ‘The coming of age in imaging in biomedical research’ today at ECR.

By Mélisande Rouger

Radiologist-in-chief at Massachusetts General Hospital (MGH), Prof. James Hunter Thrall looks back on his career with satisfaction. “In my nearly 40 years in radiology, the field has gone from an ancillary part of medical practice to a necessary part of it. Radiology is on the critical path of just about every major acute illness and has transformed the management and therapy of countless diseases and conditions during my career,” he explains.

Born in 1943 in Ann Arbor, Michigan, he first dedicated himself to mathematics. A brilliant student – he held a bachelor’s degree with high distinction – he then opted for medicine without, he admits, really knowing what he was getting into, “I soon understood that I did not really enjoy doing physical examinations or standing for hours in the operating room,” he confesses. “I somewhat despaired that I couldn’t find a home in medicine”. Fortunately, in his third year, he met the specialty that was going to become the love of his life: radiology. “It was love at first sight,” he vividly remembers.

After his medical degree, he enrolled enthusiastically for a one-year radiology internship, followed by a four-year residency at the Walter Reed Army Medical Center in Washington D.C. “During my residency, we had a teaching conference first thing each morning,” he recalls. “I couldn’t wait to get to the hospital in the hope that someone would choose me to look at a case.” He completed his training with a fellowship in nuclear medicine and began his ascension in the radiology microcosm: from assistant chief of nuclear medicine, to assistant professor of internal medicine and radiology, to full professor at the University of Michigan. He went as far as to become the first person to receive the Juan M. Tavera Professorship of Radiology at the Harvard Medical School, in 1988.

Among his numerous appointments, Thrall served as chairman of the department of radiology at the Henry Ford Hospital in Detroit, Physician trustee, and vice-chairman of the Board of Governors of the Henry Ford Medical staff. He also held a position on the Board of Trustees of the Henry Ford Health Care Corporation.

In 1988, he became radiologist-in-chief at MGH, a position he has held since then. Currently, he serves as a trustee of the Massachusetts General Physicians Organization and chairs the Executive Committee of the Harvard departments of radiology, as well as the International Medicine Committee of the MGH.

Of his work, he says eloquently, “I love the sense of anticipation that comes with looking at each new examination. Where is the abnormality? How can we help this patient? What should we say or recommend? It is powerful and daunting in equal measure to know that another person’s life will be so strongly influenced by what you see in their images.”

This passion gave birth to over 260 publications and reviews and a textbook series, *Requisites in Radiology*, which he founded and still edits. He is part of the editorial board of the *Journal of the American College of Radiology* and Perspectives, and has served on the board of the *Journal of Nuclear Medicine*, *International Journal of Cardiac Imaging*, and *Investigative Radiology*.

His background in mathematics, an advantage he judges “invaluable, especially as radiology entered its digital age,” makes him a strong advocate for a multidisciplinary approach to radiology. “No one is isolated anymore,” he insists.

To gain expertise in other specialties such as molecular biology and the sciences related to drug development, chemistry, pharmacology and pharmacy, will be essential, he says, especially with the advent of molecular imaging.

It will also be increasingly important to understand how working in a digital environment extends the capabilities of radiology, and how it will reshape the business aspects of radiology through telemedicine, according to Thrall, who has been keen on developing these applications throughout his career.

Co-founder of WorldCare Clinical (WCC), an imaging contract research organisation that provides end-to-end imaging services for clinical trials in the pharmaceutical, biotechnology, and medical device industries, he is also the Chairman of the Board of Directors at Mobile Aspects, a leading provider of radio frequency identification (RFID) tracking solutions for the healthcare industry.

His lecture will demonstrate to what extent the specialty has developed. “The focus of research in imaging for the first 100 years was on the development of ever better and more diverse imaging methods. This pursuit was so successful that in the last 15 years imaging methods have been increasingly and widely adopted outside of radiology as tools for basic biomedical research,” he explains. “Young radiologists are coming into an incredibly dynamic field. Looking back, I feel so lucky to have chosen radiology!”

**continued from page 26**

MG: Radiology residency programmes are similar to the Western European and North American models. The academic syllabus is revised every five years. The relatively small size of the country enables a centralised postgraduate teaching programme to be carried out by the Tel Aviv University. This programme is composed of 36 annual sessions (4 hours each), covering all aspects (technological and clinical) of radiology. The participation of all residents in this programme is compulsory. The departments are also regularly inspected every five years by committees appointed by the Israel Medical Council and re-evaluated for the quality of teaching and practice.

In order to be authorised to offer a full residency, the departments are required to meet modern equipment standards, as well as critical demands regarding the quantity and mix of radiological examinations. The postgraduate programme is also very important for the adaptation and incorporation of new technologies as legitimate parts of radiology. It keeps the profession updated on the most recent innovations and enables us to determine and protect its boundaries.

**ECRT:** What do you wish to achieve during the ‘ESR meets’ sessions? Can you tell us more about the contribution of Israeli radiology to projects in medical imaging? And what local scale large radiological projects and surveys do you intend to compare with the international ones?

**MG:** The prime position assigned to Israel at the ECR will enable us to introduce local radiological experience to our European colleagues. Future international exchange of knowledge as well as personal relationships will create a win–win situation for all.

Being a small country restricts the sampling size of surveys, but on the other hand it facilitates communication. We are interested in bringing up our results from relatively large scale surveys in Israel, in order to compare them with other countries and enrich the global database of disease processes.

The Israeli ministry of health started a national breast cancer screening programme 5 years ago, in which all eligible women are requested to attend mammography. The percentage of women undergoing screening mammography increased significantly, from 25% to 60%.

A large scale lung screening programme has screened more than 1,000 smokers or ex-smokers as part of the international ELCAP study. There have been more than 15 cases of cancers detected with continued surveillance of the other participants.

The new technologies of CT colonography and cardiac CTA have gained wide acceptance in Israel. Approximately 20,000 CTCs have been performed – a number similar to that in the UK, a country 10 times more populous than Israel. Cardiac CTA is performed in most hospitals and in other medical centres for symptomatic as well as asymptomatic high-risk patients, with pioneering work done in its assessment.

**ECRT:** What future trends and challenges do you foresee in radiology?

**MG:** Keeping up with the fast innovations and maintaining the balanced integrity of radiology are two of our main challenges. The overwhelming increase in demand for prompt radiological services creates a heavy workload pressure on radiologists and affects their ability to find time for research and academia. This may take a high toll in the future. Careful planning at the level of governments and medical organisations should be carried out in order to anticipate those future problems.
Patient selection proves essential to success in coronary CT angiography

By Frances Rylands-Monk

Despite technological developments in cardiac CT angiography (CTA), the technique remains difficult to learn and implement in clinical practice. While image acquisition has improved, scoring and data evaluation needs operator input after thorough training. Whereas the American College of Cardiology advocates six months of training in CTA, a recent Dutch study showed that doctors’ sensitivity and specificity in the detection of disease improved significantly after one year, suggesting that training might be better measured in terms of number of examinations performed as opposed to length of experience.

The cost effectiveness of CTA compared to conventional methods is another issue to be discussed at today’s state-of-the-art symposium. In Switzerland, for example, conventional angiography costs almost nine times more than CTA (6,000 Swiss Francs versus 700 Swiss Francs, or about €3,700 versus €430), and CTA usually is faster for the patient and involves fewer potential complications such as haematoma, myocardial infarction, and heart failure.

“The bottom line is that there are no definitive answers, as CTA’s clinical benefits are still being studied,” said Prof Mmyriam Hunink, head of clinical epidemiology and professor of radiology at Erasmus Medical Centre, Rotterdam. “CTA is a low-cost test compared to a cardiac angiogram, which in patients with low moderate probability would reveal a lot of negatives. For lower risk patients, the procedure is less expensive and less risky, with high sensitivity and fairly high specificity. Any positive findings, though, would require a follow-up angiogram.”

The cost of the CTA procedure, including patient time costs but not including treatment, is estimated at around €250–350, compared to a coronary angiogram at €1,300–1,600, according to Hunink. This is around 20% of the cost of conventional treatment. However, CTA’s predictive value is too low in high-risk patients, reducing its cost-effectiveness in this area, unless it is used to guide treatment.

Hunink suggests that further studies are needed, and these should focus on evaluating test characteristics and on the data of long-term outcomes.

“Only a small proportion of patients will get longer life expectancy from CTA investigations, but chest pain in most will be reduced.”

Quality of life with or without chest pain is a less easily measured outcome than longer life, but it is a crucial factor for evaluating the usefulness of CTA in the detection of coronary artery disease (CAD), and patient management afterwards, she said. While doubts remain about whether CTA’s clinical benefits outweigh those of established diagnostic methods, doctors agree that when aiming to rule out CAD, patients with lower pre-test probability are likely to gain most from coronary CTA due to its high negative predictive value.

Prof. Stephan Achenbach, cardiologist and professor of medicine at Erlangen University Hospital in Germany, will speak about patient selection for CTA during today’s session. He plans to point out that CTA is not a substitute for the more invasive conventional angiography. Doctors wishing to perform CTA must carefully select those patients whom they believe will generate good images. Those suffering from obesity, irregular heartbeat, or renal failure and needing to avoid contrast injections, are not suitable for CTA. The doctor must also look at the particular patient’s clinical situation. In patients who have already had a stent fitted or who have been diagnosed with stenosis, conventional methods are better. In patients in whose stenosis might exist, the doctor must decide on the likelihood.

“CTA is only a diagnostic tool, and if the likelihood of stenosis is high, then more invasive methods are better because treatment can be performed at the same time. If pre-test likelihood is low, such as in the young, and in those with atypical symptoms and many women (even those with the same symptoms as men), then CTA should be used if the patient is suitable, as in the case of a sporty 55-year-old with a regular heartbeat,” he said.

While improvements in image quality will make CTA a reliable clinical tool for ruling out stenosis, experts still cite catheter coronary angiography as the gold standard for detecting and verifying CAD in high-risk patients. Indeed such patients will sometimes undergo both examinations, whereas low-risk patients may benefit from the simpler CTA examination.

Mistakes will also be discussed during the session. Despite good image quality, CTA tends to overestimate the degree of stenosis, and lesions can look more high grade and often do. Moreover, artefacts can mimic lesions when image quality is substandard, either due to the unsuitability of the patient or sloppily reconstruction during post-processing.

“To avoid this, radiologists should make sure image quality is optimal by keeping up to speed with training and practice. One way is by taking every opportunity to compare CTA...
with conventional angiography in patients who have both sets of imaging performed,” Achenbach said. “You will see where you were right and where you were wrong.”

Looking to the future, new generation multislice CT scanners hold great potential for perfusion imaging, according to Dr. Sebastian Leschka, a CT researcher from Zurich University Hospital. At present, 64-slice CT can cover the heart in 5–10 heartbeats, but 256-slice machines can scan the heart with one rotation, covering about 12 cm in one heartbeat. If used over several heartbeats, practitioners can dynamically track the filling of contrast material in the coronary arteries to determine the direction of coronary perfusion, as is possible in conventional angiography, or they can assess myocardial perfusion. However, clinical studies are ongoing, and the risks involved in the potential increase in radiation exposure from studies taking several heartbeats will have to be evaluated, he said.

At today’s session, Leschka will focus on technical advances in cardiac CT and current and future developments. One such advance is dual-source technology, developed in 2005 and gaining ground in the clinical setting. Dual-source scanners do not give better volume coverage than other multislice scanners, but provide high temporal and spatial resolution, obviating the need for beta blockers commonly given to 60–70% of patients needing coronary examinations to avoid motion artefacts. With the use of two tubes and bi-segmental reconstruction techniques, the temporal resolution could be as low as 42 milliseconds. “Due to the faster gantry rotation, dual-source scanners offer lower radiation doses. For instance, scanning a patient with low heart rate and normal body weight with prospective ECG-triggering saves up to 80% of radiation dose compared to retrospectively ECG-gated scanning protocols. We are moving from high dose cardiac CT to very low dose cardiac CT, which means we could use it for follow-up,” Leschka said.

“With current CT technology, we can scan almost everyone, independent of heart rate. New technology, however, will open up a new spectrum of applications such as the evaluation of coronary contrast filling direction or CT perfusion imaging,” he said.
of exhibitions devoted to composers silenced after 1938. No family represented Viennese musical life better than the Korngolds. In December 1909, the most powerful music critic in the German language, Julius Korngold of the Neue Freie Presse, printed a private edition of a number of works composed by his son Erich Wolfgang. Gustav Mahler, Richard Strauss and Alexander Zemlinsky amongst others assured him that the boy’s gifts were exceptional. Prodigies were not unknown, but even such exceptional talents as Mozart had composed traditionally without extending tonal and harmonic boundaries. What was outstanding about these manuscripts was the advanced musical language employed by the boy. By the time he was 25, Erich Wolfgang Korngold had already been the subject of an extensive biography and was composer of the opera ‘Die tote Stadt’, which by 1921 had become the most performed opera by any living composer. His father Julius believed him to be the dominant musical voice of his generation and the successor to Gustav Mahler. The many circumstances that prevented this from becoming the story of the exhibition.

By the mid 1920s, it was clear that every move Erich made was calculated to contain the actions of his father, the most feared and influential critic of his time. Erich’s ambition conflicted with the actions of the father, the most feared and influential critic of his time. Erich’s ambition conflicted with the force of his native art. Korngold served high art. Korngold not only composed but also conducted his music himself for recordings, which allowed the visitor to both hear and see him at work and insure.

This biography intimate material tells the story of a Viennese family that was exceptionally witty, clever and creative. Korngold studied music from the age of five, under the supervision of his father Erich. He became financially independent from his father’s legacy and able to pursue his own musical path. His compositions were characterized by a sense of drama, a flair for the grand, and a love of color and texture. Korngold’s music is often associated with theateful period of the 1920s and 1930s, when he was one of the most important composers in Vienna, a city that was then at the crossroads of European cultural life. Korngold’s music is often said to be a reflection of the works of his father, Gustav Mahler, who was a major influence on his style.

Korngold was exceptionally witty, clever and creative. He was a patron of the arts, supporting many artists and musicians who were émigrés, including the widow of his father, Julius Korngold. Korngold was also a master of orchestration, and his music is often characterized by its lush, rich sound. He was a master of the operatic form, and his operas, such as ‘In Flanders Fields’, are still performed today. Korngold was also a prolific composer of film music, and his music for films such as ‘The Adventures of Robin Hood’ and ‘The Sea Hawk’ helped to establish the musical style of Hollywood cinema.

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After relocating his classical career when he left the ‘old world’, Korngold wrote original scores to such movie classics as ‘The Adventures of Robin Hood’, ‘The Sea Hawk’, ‘Captain Blood’, ‘Deception’, and ‘The Adventures of Don Blue’. He became financially independent from his family and was able to pursue his own musical path. His compositions were characterized by a sense of drama, a flair for the grand, and a love of color and texture. Korngold’s music is often associated with theateful period of the 1920s and 1930s, when he was one of the most important composers in Vienna, a city that was then at the crossroads of European cultural life. His music is often said to be a reflection of the works of his father, Gustav Mahler, who was a major influence on his style.

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Plaza and see the Jewish Museum. Vienna and think Schoenberg, Schnitzler and Freud! These are just three Jewish names – among countless others – that immediately pop into one’s mind and are associated with our capital, people who have contributed significantly to Vienna’s international reputation as a city of intellectuals and artists. Vienna owes a lot of its cultural diversity to the Jewish community. Many of the Palais on Ringstrasse – such as the Palais Epstein, Schey von Koromly, Königsquartier and many more – were built by Jewish principals who also invested in theaters and opera houses, organised exhibitions and, for instance, participated in the realisation of the Sezession Project. No matter where you walk in Vienna, you will come across monuments of a vibrant Jewish life and history around every corner.

The first district is full of Jewish monuments and Jewish culture. In 1825 the cornerstone of the new Vienna Synagogue was laid at Seestrasse 2. The synagogue was built to the plans of architect Josef Kornhäusel and adhered to the regulations governing the construction of residential buildings – a fact that hindered its destruction in November 1938 in Kristallnacht. Take a walk through Judenplatz and in only five minutes you will find Judenplatz. Here, the Losen monument, which was destroyed by the Nazis in 1939, was reconstructed and put back in its original position in 1982, and on the other side of the square there is the memorial of the victims of the shoa (holocaust), which was unveiled in 2000. The so-called Judenhaus (the house of Jordan) on Judenplatz is the oldest house on the square and was named after its first owner. There is a medi­eval relief on its front commemorating the exclusion and the burning of Jewish citizens in 1420/21. The Museum Judaenplatz is also located on Judenplatz, and as an output of the Jewish Museum Vienna is mainly devoted to medieval Juda­ism in Vienna. On Michaelerplatz you can take a look at the Leopold, which is considered to be the start of modernity in Austrian architecture and was built by Adolf Loos. Emperor Franz Joseph once said that the building was lacking eyes­w brow, and when you look at it, you will understand what he meant. Also on Michaelerplatz, there is the Café Griensteidl, which had reg­ulars such as Felix Salten, who wrote stories and little tales (a fin-de-siècle soft porn) before becoming famous internationally when Walt Disney adapted his book ‘Bambi’. When the original building had to be knocked down in 1897, all the regulars moved on to Café Central in Herrengasse 14. When you enter the coffee house, you will notice an innaminate gentleman reading a newspaper in memory of one of their famous regulars, the writer Peter Altenberg. He consid­ered the place his second home and even stated the Café Central as his postal address.

In 1624 Emperor Ferdinand II ordered all Jews to move to the Ghetto on an island, which is today’s second district. They were not allowed to leave it after 6 pm and not at all on catholic holidays. Go for a little stroll and discover eight centuries of fascinating Jewish history in the Leopoldstadt district. In 1766 emperor Joseph II opened parts of the Prater to the public, so eventually the Prater became one of the hippest streets in Vienna. Visit Schnitzler’s birthplace in Praterstrasse 16. Not far from that, the Praterstrasse 25, which was by the way once inhabited by Theodor Herzl and his family, you can find the former ‘Roli­nhöhe’ (Rolina stage), a very popular theatre where stars like Hans Moser, Armin Berg, and Fritz Grünbaum performed. The Riesenrad (Giant Ferris Wheel) in the Prater was constructed by Cauer Steiner, who had to leave Vienna in 1938 and died in Beverly Hills in 1944.

An enormous part of Viennese architecture and culture is connected to its Jewish community, so much that this article could go on forever, so we invite you to go on a tour of discovery through our city and find out for yourself how famous monuments like Stephens­dom, Musikverein and the State Opera are connected to Judaism.

Zul zayn mit mazel!

Literary encounters

A leisurely walk through Vienna’s past

By Vera Schmidt

The history of Austria’s capital is inseparably connected to the history of the Jewish community. Think Vienna and think Schoenberg, Schnitzler and Freud! These are just three Jewish names – among countless others – that immediately pop into one’s mind and are associated with our capital, people who have contributed significantly to Vienna’s international reputation as a city of intellectuals and artists. Vienna owes a lot of its cultural diversity to the Jewish community. Many of the Palais on Ringstrasse – such as the Palais Epstein, Schey von Koromly, Königsquartier and many more – were built by Jewish principals who also invested in theaters and opera houses, organised exhibitions and, for instance, participated in the realisation of the Sezession Project. No matter where you walk in Vienna, you will come across monuments of a vibrant Jewish life and history around every corner.

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Zul zayn mit mazel!
European Radiology in numbers

By Simon Lee

European Radiology, the flagship publication of the European Society of Radiology, has come a long way since its foundation by Prof. J. Lissner in 1991. Now in its 17th year, the journal is published twice as frequently, its content is accessible from any point on the globe, and it maintains a proud position as the leading European general radiological journal. The past year in particular has also seen some significant changes for European Radiology, as Editor-in-chief Prof. Albert Baert ended his 13-year tenure, ceding the driving seat to Prof. Adrian K. Dixon, another well-known and highly respected figure in the field. The editorial office was incorporated with the ESR Office in Vienna and all activity continues to increase, with some very high standards to be met and hopefully even further improved.

The clearest indicator of a journal’s growth, the ISI Impact Factor, for 2006, was released in June 2007, and European Radiology once again climbed higher up the rankings in the overall imaging field. With an impact factor of 2.554, the journal is now the second highest ranked truly general radiological journal, an impressive 9.1% of papers, very closely followed by Japan. Within Europe, the traditional high-flyers include Italy, France and the UK, but it is once again Germany, with an outstanding 18% of all submitted papers, who topped the chart in 2007.

Because of this high volume of material flowing through the system, the peer reviewers have naturally been hard at work too. Th e pool of around 900 reviewers, in Europe and overseas, allocated their extremely valuable time and expertise to complete their reviews in an average of around 20 days during 2007, with the time period dropping to just 15 days for revised manuscripts. One of the aims of the new editorial team is to reduce this time even further in 2008, along with the average turnaround time between submission and the editor’s final decision, so as to publish topical findings as fast as possible, and of course to provide authors with rapid feedback.

All of these facts and figures give the new editorial team something to consider as they attempt to maintain the high level of quality that European Radiology is now renowned for, and the growing readership will hopefully facilitate this by leading to an even higher volume of submissions. All ESR members (around 30,000!) can now gain electronic access to European Radiology as part of their basic membership fee and a full subscription to the paper copy can also be included in the ESR membership package for a modest additional sum. With a new editor-in-chief and a new home in Vienna, 2008 sees the dawn of a new era for European Radiology, and so far the future looks bright.

~*~

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