On the occasion of the ECR-Meets Hungary 2005, we decided to publish a supplement of our Journal of the Hungarian Society of Radiology to demonstrate to the outside world of the technical and professional capabilities we hold in the field of radiology, in Hungary.

In the following pages you can briefly learn about our history, professional and social life in radiology, the everyday problems we face, aspects of our work which we are proud of and those which we would like to forget in a hurry. You can read articles from different departments of radiology, from organisations, our connections abroad, and also about Hungarian presentations in foreign radiological meetings.

You can meet Hungarian radiologists in different parts of the world. Some of them left Hungary for political reasons, some because of their reputable scientific work which was widely acknowledged abroad.

More recently, since joining the EU in May 2004, we have realised our new challenges. Salaries of Hungarian radiologists are still not comparable with their European colleagues, the difference is 5-10 fold. That, coupled with the insufficient technical facilities, prompt the Hungarian radiologist to move to “greener pastures”. Since the expansion of the EU, Hungarian radiologists are looking for better pays and an improved standards of living to realise their dreams, or to simply make ends meet. In certain cases western european countries are recruiting Hungarian doctors for their professional worth. In normal circumstances, this would be a good sign for us, but at present it is on the contrary. Why? With the current state of manpower in radiology, our system cannot bear any further “brain-drain”. The worsening situation means that the total number of radiologists has declined, salaries are still significantly lower than our counterparts in other European countries, women make the bulk of the workforce and are thus being unnecessarily burdened – though this is beneficial at times, and only few prospective radiologists joining force.

In the face of all adversities, we have managed to nurture good results as well.
- We support the so-called “long-life education”, and we have contributed on our part.
- We have made efforts in streamlining the high-level of graduate and postgraduate education in radiology.
- We have regularly organised CME session in different regions.
- Changed the criteriae for specialisation according to the future needs.

We think that our society is strong and our members support the need to achieve more and better results on national and international forums.

Fortunately, companies participating in radio-
logical fields support our members and their participation in national and international radiological meetings. I must confess that without this generous support, our work would be mainly unrealised.

Unfortunately, the future of radiology in Hungary is not so clear. The health care politics has had its share of financial and organisational difficulties and the state would rather prefer private party being at the helm of affairs. This, in their view, would keep the monetary aspect mobile. We are not so optimistic about this approach. How can we influence the future? By nurturing our young talent and pushing them to greater heights. This is the reason we are here. We would like to exhibit our future talent to you.

You are welcome to our session, and more importantly, to Hungary.

          dr. Béla Lombay

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Tyco Healthcare MALLINCKRODT
Like books, scientific journals have their fate, i.e., their history. No exception to this is the journal of Hungarian radiology.

It is usual with European countries that regular radiological activities of scientific value are performed in connection with the medical branches of universities. Obviously, the scientific reviews of the trade, too, emerge from the same workshops. The case has been the same with Hungary, too.

It is a mere commonplace that the discovery of Röntgen rapidly spread in Hungary, too. Franz Serafin Exner, professor of physics, who had been a student of professor Kundt together with Röntgen in Zurich, received from the latter a copy of his manuscript of Vorläufige Mitteilung and a picture in late December, 1895. He presented them at one of the regular Saturday review meetings of his Vienna institute on 4 January, 1896. One of the persons present at the meeting was Franz Lechner, a Prague professor of physics. His father happened to be the editor-in-chief and proprietor of the Vienna paper, Die Presse. The next day, on 5 January the editor-in-chief published what he had heard from his son in his article titled: Eine sensationelle Entdeckung. The article was reviewed by Pester Lloyd (Budapest) under the same title on 7 January (Tuesday). The same paper published the whole text of the Würzburg preliminary study – Eine neue Art von Strahlen – on 16 January (Thursday). And from this point on a continuous series of events took place. As a result of an unbelievably rapid process, medical radiology came into being. Röntgen’s faint idea became reality. His feeling that he gave an account of talking to his wife, Bertha one night a few days after his discovery, “… Ich bin nur durch eine seltsame Entdeckung länger als sonst im Institut zurückgehalten worden. So, nun kann der Teufel losgehen!” was right. “… Der Teufel ging los!”

The fact that roentgenology spread so rapidly in our country had several reasons, it did not happen by mere chance. There was a well-developed network of active contacts within the Austro-Hungarian Monarchy. 1896 was the year of Hungarian millenary celebrations. As an achievement of the up-to-date concepts of several great politicians (Ürményi, Eötvös, Trefort) the education of math-
emastics, chemistry and physics was of high level, both at secondary schools and at universities. A great number of professors had the chance to study at foreign universities, those of Vienna, Munich, Heidelberg, Berlin etc. Their professors were scientists like Bunsen, Helmholtz, Hertz, Planck etc. It was just natural that the country, proud of its thousand-year history and confident about its place among the leading nations of Europe, took its way following Röntgen. This is the reason why in our country the case was not only the significance of the discovery being realized, the new method quickly accepted. The application of X-ray improved as well.

On 16 January, 1896 Jenő Klupathy delivered a lecture titled A Röntgen-sugarakról (On X-rays) at the Hungarian Association of Mathematics and Physics. No later published Orvosi Hettilap (Medical Weekly) in its feuilleton column Endre Hőgyes “Csontváz-photographálás testen keresztül Röntgen szerint” (Taking photographs of skeletons through the human body according to Röntgen). And this is the very minute when Hungarian roentgenology was born.

The new knowledge spread rapidly in the country of the period (different in size and population from the current Hungary). Here, too, the development led to the separation of diagnostics and therapy, and the first cases of roentgenism were recorded. Medical journals of the time are full of articles of this kind. And, of course, forensic medicine took its first steps, too. Several lawsuits of the age deal with cases of roentgenism. There was an urging demand for making medical activity with X-rays organised and safe, and educated, first of all at the medical branches of the universities. At this time there was no demand for any special examination for roentgenologists but it was deemed necessary that no person without some special education should work with X-ray equipment.

The earliest hint at medical radiology is to be found in the minutes of the Board of professors of the Medical Branch of the Budapest Pázmány Péter University. This tells us that Károly Kétly, professor of internal medicine asked for 1000 forints to be granted by the Ministry of Religion and Education for the cost of X-ray equipment. This proves that in 1896 it was considered a task of the university.

On 12 March, 1906 Árpád Bókay and Ottó Pertik, professors of the same university, submitted to the Medical Branch their suggestion On establishing a central institution for drawing, photography, and X-raying within the Budapest Medical Branch. No later than 27 March, the dean of the Branch appointed members of the committee that was to analyse the above-mentioned suggestion and to elaborate the final version of the plan. The manuscript of the suggestion is the birth certificate of Hungarian radiology. (These documents had been sought for for more than 90 years until László Molnár, director of the Archives of the Semmelweis University found them attached to the files of some construction
The first director of the institute was Béla Alexander (1857–1916), a renowned physician of the age.

After Alexander’s death the institute got the name of Central Roentgen Institute. At this time it was based in the central building of the medical school. The new director was Béla Kelen.

Béla Kelen (1870–1946) is an outstanding figure of the history of Hungarian radiology. He created a school, wrote coursebooks, established a scientific journal, and was a renowned representative of the physical-dosimetric principle. He was appointed full professor in 1927 and at the same time the Central Roentgen Institute was transformed into a University Chair. The consequences of this move were the following: 1. university studies of roentgenology got the framework of a chair, 2. the education was realized by a full professor, 3. the first university coursebook in Hungarian was compiled, 4. the number of the exact subjects based on mathematics and physics increased. A clinical roentgenological diagnostic school (Czunft, Molnár, Gajzágó, Róna, Bárány, Mészöly, Etelka Antal, Végh etc.) was set up at the medical school of the Budapest university that dealt with physics, technical conditions and research on the same level as radiological (X-ray, radium) therapy. They attended conventions abroad and published their achievements in leading European medical journals. The first and best examples were set, the first “headquarters school” (Zsebők) came into being. Scientific workshops, trainings, lectures at the medical association, invitation of foreign experts for presentations, publishing roentgenological results in Hungarian medical journals, revealing cases of roentgenism, problems of the increasing amount of uncontrolled and unprotected equipment in private consulting rooms of the age were all initiated by and dealt with by the department led by Béla Kelen. All this made the claim unquestionable that a medical roentgenological association and a journal of the trade were needed.

It was this claim that Kelen realized when he founded the MORE (Magyar Orvosok Röntgen
Egyesülete – Röntgen Association of Hungarian Medical Doctors). This society included mostly radiologists who worked for the Medical Branch. Several famous clinical radiologists (Czunft, Ratkóczi etc.) came from this association.

Parallel to this association, another talented group of radiologists, that of the Hospital of the Jewish Community founded the Magyar Röntgen Orvosok Társasága (Society of Hungarian Radiologists).

An outstanding organizer, a sort of general factotum of the MORE led by Kelen was József Végh. He and his wife, Etelka Antal, a medical doctor herself, were faithful members of the department led by Kelen until the death of the latter.

The main characteristics of the “headquarters school” were the following: 1. there was a solid academic basis that the association provided and that gave impetus to the others, 2. up-to-date trends were present in university education (e.g. the first ionization chamber of Béla Szilárd, Seeman’s roentgen spectrograph, Császár’s ergometer etc.) and the tools of protection were continuously improving, 3. it became a model of national significance which has been referred to ever since. This is true both of Kelen and members of his school.

At this point of time there was an effective association of university background for the first time. The original emblem of the MORE has been used ever since, even by the Hungarian Society of Radiologists, the successor in right.

The next important step to be taken was creating a strong national roentgen industry and a journal of the trade. (This was emphasized by Kelen in the text quoted at the beginning of this article.) In order to found a journal, you need capital. There can be no other source of this than an effective industry. But it had to be established as well. Professor Kelen was active and successful at this, too. He had Vendel Szighard (a mechanical engineer) build the experimental radiological equipment designed by himself (Kelen) in the cellar of the building, and he made an engineer, Árpád Keszely manufacture Szighard’s radiological equipment in the factory of Martin and Sigray. The telephone factory started to produce the
machines designed by Géza Varga and Károly Hatscher. This was the starting point of developing Hungarian roentgenological technique and industry supported by Kelen, based on high level electrotechnics, and highly competitive. This achievement of Kelen’s was rewarded with the rank of titular professor. (He was appointed a full professor in 1929.)

It was in 1926 that the national roentgenological industry was effective and strong enough to support a journal. After all in September the first issue of Magyar Röntgen-Közlöny (Hungarian Röntgen Bulletin) was published with the direction of Kelen. The Bulletin was owned by the MORE and published by Egyetemi Nyomda (University Printing Office). Its editor-in-chief was one of the most successful national linguists, a purifier of academic Hungarian. Finally, the Association and Hungarian roentgenology had its high standard, up-to-date, successful, very popular, and well prepared journal. The names of senior officers, the main functions, academic achievements; time, venue and decisions of conventions and general meetings, balance of the previous term, the number of members, committees and their tasks, radiological accidents, professional faults, courts’ decisions, time and venue of trainings, costs of the latter, and the state of affairs concerning member fees were all published in it.

The journal also gave regular high-level information concerning current achievements and records of physics, the biological effects of X-ray and radium, roentgen diagnostics and therapy, roentgenism, radium therapy. A great achievement was that they recorded current scientific news in due course. Hungarian roentgenologists had the chance to get all up-to-date information by reading the Bulletin. Of course, it got all the high appreciation it deserved. Both the original articles or accounts, translations of outstanding foreign authors’ (e.g., Guido Holzknecht) essays were of the highest level, even looking back. Kelen was said to be keeping a tight hand on his staff. Excellent accounts were published from László Rhorer about the radiotherapy of cancer, about biliary diagnostics (Frigyér) and the role of roentgenology in forensic medicine (already at that time!), about the technical aspects of nozzles, new Belgian radium plants, the novelties of dosimetry, and current problems of radiobiology etc. There were separate columns for News of the Association, general news and accounts of books on radiology.

After Kelen retired, the Bulletin remained to be effective for a while.

In 1942 Nándor Ratkóczy was appointed to be chair of the department. He took over the Bulletin as well (from the 7–8th issue of volume XVI, 1942). At first, the layout did not change. The new editor-in-chief enriched the journal. Clinical radioprotection was also dealt with. We might say that the challenges of the age were answered. I myself was well acquainted with professor Ratkóczy. He was one of those great scientists of the renaissance type. On 18 March, 1947 Zoltán Zsebők, under-secretary of state issued the regulation that made it possible to transform the university chair into a separate University Hospital. Soon medical roentgenology became part of the curriculum of medical university studies. Students had to pass a high-level examination in this subject at the end of the 4th year of their studies. This fact increased both the tasks of the professors and the role of the professional journal, the latter having a complementary function to the coursebook.

Following the Soviet example, in 1948 a professional group of radiologists within the Trade Union of Medical Workers was created as a replacement of the Association. On 4 October, 1948 Nándor Ratkóczy was elected chair of the group. It was in 1949 that as a successor of the Bulletin, the new journal, Radiologia Hungarica was first published. The editor-in-chief was Ratkóczy, while Hrabovszky, Wald, and Hajdu were the editors, and József Végh was the publisher. The main features, just like the quality of the journal more or less reflect the overall political situation of the time. (Nowadays you can’t help smiling at the fact that radiologists were forced to set special goals and promise special achievements in honour of the following congress of the Communist Party.) But as for the editors, they did their best to create the highest possible level scientific journal.

Ratkóczy retired in 1962. His successor in all his functions – as professor of the University Hospital, as chair of the Association of Hungarian Radiologists, and as editor-in-chief of the professional journal – was Zoltán Zsebők. (Two changes had taken place during the Ratkóczy era: 1. the professional group of radiologists became Magyar Radiológus Társaság (Association of Hungarian Radiologists), while 2. Radiologia Hungarica changed its title to Magyar Radiológia (Hungarian Radiology).

During the period of Zoltán Zsebők, both the Association and the professional journal developed
a lot. The latter was published on excellent printing paper which improved the quality of pictures. The number of pages increased, the topics became more up-to-date. At the same time, there was no significant change in the basic editorial principles or structure of the journal. The editor-in-chief and József Végh, the editor did an enormous job of excellent quality, a milestone in the history of radiology. Professor Zsebők as editor-in-chief was followed by professors Gyula Varga, Ferenc Horváth and Mózes Péter. For a few decades the chair of the Association and the editor-in-chief of the journal have most of the times been different persons. The current editor-in-chief is Béla Lombay, who is also the president of the society.

There are a few other facts to be mentioned. Mention has been made of a second association of medical radiologists, called Magyar Röntgen Orvosok Társasága (Society of Hungarian Radiologists). There are memories of a professional journal published by them under the title Röntgenológia (Roentgenology). Unfortunately, not a single copy of it has been found so far.

When looking at the volumes of Magyar Röntgen-Közlöny, Radiológia Hungarica, and Magyar Radiológia, we should not only think that they incorporate the classical way of storing data according to Gutenberg’s method. They mean more to us. This treasury of international and Hungarian radiology was cre-
ated by human beings, now already dead or still alive, in order to save the ideas of the past for future generations. And they did so among sometimes difficult circumstances, not always appreciated by their contemporaries. Now we wish to pay tribute to the editors-in-chief, the editors, and all the contributors with the following idea, never to be forgotten, of Samu Benkő an old pathologist, member of the Hungarian Academy of Sciences:

“... It is the example of the laureates and that of the lives and work of those long forgotten that proves that in this historical area those who tried to lead their honest lives identified with the fate of the community somehow in an intellectual way had to suffer from troubles and bitterness. Nevertheless, their example has shown their successors the brightness of the pleasure of creation, and the number of variations of it which are still to be experienced.”

(Benkő, 1784)

Should the founders of Hungarian Radiology become part of this brightness of the pleasure of creation just as they deserve the appreciation of their readers, colleagues and successors who also find their pleasure in learning. The honesty of the ancestors’ enterprise has a never ending effect. It educates – as it sets an example.

dr. Szabolcs Mózsa

Radiologists in Hungary
Graduate-postgraduate teaching program and system in Hungary

The officially registered number of radiologists in Hungary is approximately 1300, representing 7500 habitants per radiologist. In the international comparison this number seems to be more or less optimal, but the regional distribution exposes significant discrepancies.

In some of the eastern counties, the number of radiologists is lower than 1 per 22 000 habitants, which generates a lot of problems in effective patient care.

The age distribution is also suboptimal since vast majority of the radiologists in Hungary are between 50–65 years of age. The incoming residents are much lower than the adequate number needed for correction and compensation.

The male to female ratio is around 3:7, slightly changing in the different age groups.

The intake of resident radiologists during the last two years has shown a slight increase; in 2004 the total number of residents was around 30–35.
The major issue among young radiologists after specialization is to work abroad, modify working environment, or in extreme cases, job interruption. Generally, the main source of problems in Hungary is the continuous loss of prestige in the medical profession, a problem precipitated by low-salaries (the lowest in EU countries).

The “suboptimal” technical basis of radiology in Hungary may also be responsible for the actual situation. Unfortunately, the proportion of digital equipment is not more than 15–20% of all roentgen units working in Hungary.

Conventional X-ray equipments make majority of the technical pool, with old fashion analogue units. The situation is similar in the ultrasound, 65–70% of the units are out of date. CT units also lag behind. The state of the art equipment, a small number of multidetectors (3-4 units against a total number of CT units appr. 80), but there still persist several sequential type equipments. The number of MR systems in Hungary is around 30, 10 units with 1.5 T and no unit over 1.5 T. Most of the MR units are in private hands and – in unique a way – university institutions in Hungary do not own MR units.

PACS–IMACS systems persists just in a few hospitals with limited services of terminals installed in involved clinical departments.

Teleradiology service is also accessible in limited numbers. The technical environment of radiology in Hungary can be categorized into the lower-middle decimal.

The graduate radiological teaching in Hungary has a big tradition, among the first in Europe. It was introduced into the official curriculum of the University of Budapest.

Radiology was integrated as a specialization through an examination by the University Board.

Radiology is taught in the fourth year of university education throughout the four medical schools in the country. All universities have Hungarian and English-language programmes, with Semmelweis University also conducting German-language teaching programme.

We also changed our specialization programme during the 1988–1990 period by adopting the EU directives (UEMS), and in 2000 we introduced the resident system in postgraduate training. We changed the period of postgraduation to five years, the first two years are devoted to general education, supported by state budget, while the second three years are divided by radiological practice and theoretical education. The first experiences and results show dramatic improvement in quality and effectivity of education.

We also regard extremely important the CME in Radiology.

Similar to other European countries, all radiologists must collect 250 credit points in a five year period for validation of his or her further certification.

We have a general educational program organized by the Hungarian Society of Radiologists under the auspices of the Regional Educational Programme of Hungarian Radiologists.

The society organizes a biannual National Congress of Hungarian Radiologists, the biggest scientific event in radiology.

Countrywide, we have two-three radiological meetings and several local scientific events held annually which help to serve up-to-date preparation for local radiologists.

Ernő K. Makó, professor of radiology
In Hungary, each of the clinical discipline has its own professional college. These boards are on the one hand acting as advisory boards of the Ministry of Health and the National Health Insurance Fund, and on the other hand they are the leading expert bodies responsible for many different professional aspects of their specialty.

The College of Radiologists consists of 21, partly elected, partly delegated, members who elect the secretary and the subcommittee chairpersons and members, respectively. Subcommittees take care of different subspecialty areas such as interventional, pediatric, digital radiology, neuroradiology, management of radiology, training and research in radiology, etc. Usually, the Ministry of Health appoints one of the chairpersons of the four university radiology departments president of the college.

The objectives of the college are decided by the health authorities, but the body may also select tasks for itself. The main goals of the college are as follows:

- to create professional guidelines, protocols, therapeutic and diagnostic algorithms;
- to evaluate and improve financing of radiology;
- to advise the health authorities in respect of legislation and other decisions affecting our specialty;
- to regulate comprehensive specialty training of radiology residents;
- to organize and control postgraduate training of radiologists;
- to create and maintain connections and cooperation between the College of Radiologists and Colleges of other specialties;
- to cooperate with other expert advisory bodies of the health authorities;
- to make strategic decisions regarding distribution and deployment of major radiology equipment;
- to evaluate applications for Head-of-the-Department positions;
- to create and control technological and technical standards for procedures of radiology with special respect to radiation safety.

The President of the College reports on activities and results achieved in a given period to the Ministry of Health. Similarly, he or she is supposed to give account on events of the year to the community of radiologists as well, thus each member of the college may form an opinion on recent developments and give proposals on further activities to the body.

Dr. András Palkó PhD, professor of radiology, head of the department, Szeged University, Faculty of General Medicine, Department of Radiology, Szeged
This section is one of the youngest part of the Society of Hungarian Radiologists. It was founded in 2000. Actual number of section members is not too large, altogether 145, since interventional radiology is a very special field of radiology. However, the development is most dynamic in this area.

The executive committee has seven members. The actual president of the Section is Endre Nagy MD, PhD from University of Szeged and the secretary is Attila Doros, MD from Semmelweis University, Budapest.

Main purpose of the section is to coordinate the different interventional radiology activity (education, scientific research, professional protocols etc.) in Hungary in close cooperation with the Hungarian Cardiovascular and Interventional Radiological Society. Anyone with a valid membership of the Society of Hungarian Radiologists can be a member of the section.

The most popular annual training event is organized by the section, known as the “Szeged Interventional Training Course” for radiologists and technicians. This course has been held in the month of February, in Szeged, ever since 1996. Szeged is a university town with unique atmosphere situated on the two banks of Tisza river. This course is an ideal place to learn and relax for the participants.

Moreover, the section actively participates in different scientific and educational meetings:
- 2001. October, in cooperation with the 2nd Congress of the Hungarian Cardiovascular and Interventional Radiological Society, Gyor.
- 2002. October, Round table on “Diagnosis and therapy of abdominal and pelvis tumors”, Szombathely, in cooperation with Scientific Council of County Hospital of Szombathely.
- 2003. September, Forum of the Youth Committee of Hungarian Radiologists, Debrecen.
- 2004. October, Sopron’s Ultrasound Days, Interdisciplinary panel on “Interventional Radiology in liver diseases”.

Several members of the section were coauthors of the newest official Hungarian-language book of Radiology for students. This book was published in October of 2004.

Several members participate regularly and actively in different international congresses (ECR, CIRSE, EUROSON etc.) and courses (PCR, Prague Workshop on Interventional Radiology etc.).

We hope that this really young, but dynamically developing, section will be a very useful, successful and valuable part of the Society of Hungarian Radiologists. And, the activity of the section can help to join forces with European interventional radiology.

Dr. Endre Nagy PhD, University of Szeged, Faculty of General Medicine, Department of Radiology, Szeged
The Ultrasound Section of our Society was founded 20 years ago and the current number of our members is 553. The president is Zoltán Harkányi and the Secretary General is Zita Morvay, holding this function already for eight years. Diagnostic, vascular and interventional ultrasound represents one of the most important activities of the Hungarian radiologists, since the vast majority of this type of work is performed in radiology departments in Hungary. The Ultrasound Section has close cooperation with other ultrasound related non-radiological organizations (gynecologist, gastroenterologists, ophthalmologists, orthopedists etc.).

Our regular meetings and conferences are always well attended. The annual Sopron Ultrasound Days is the most popular one. This year we are going to organize the 20th meeting in October 2005. The main organizer of the Sopron Ultrasound Days is Tibor Baranyai, the chief radiologist of the Sopron Hospital and also the director of the hospital. For years, besides getting the most relevant knowledge of ultrasound, we can also update our knowledge in other fields of diagnostic imaging. The three-day meeting is always focused on special topics, e.g. oncology imaging, newest technical developments in ultrasound (US) etc. Papers are presented by invited speakers from Hungary and guest speakers from abroad. Efforts are made every year to invite outstanding experts from different countries of Europe and also from USA. Among others, some memorable speakers of the past years include: Hans Peter Weskott (Hannover), Luigi Solbiati (Milano), Boris Brikljacic (Zagreb), Nirvikar Dahiya (Coimbatore), Radu Badea and Soren Dudea (Cluj), Sasa Rainer (Slovenj Gradec), Ji-Bin Liu, Vijay Rao, David Levin (Philadelphia), Brian Coley (Columbus, USA). All major manufacturers are always present for the technical exhibition with the latest US equipments. On the last day of the meeting, participants from the whole country present interesting cases and the best presentations are awarded.

In the past 14 years we have established excellent connections with the radiologists of Jefferson University, Philadelphia. Barry Goldberg has been a great support for our exchange programs between Hungary and the Jefferson University. Several young Hungarian radiologists received some training in new fields of US at Jefferson and teachers visited our conferences, conducted courses, lectures and presentations.

Another successful and popular biannual meeting is the “Lélek Imre” Ultrasound Conference organized by Gyöngyi Nagy, the chief radiologist of the County Hospital in Zalaegerszeg. The Conference is held in Hévíz, at a pleasant resort close to the Balaton Lake. This meeting emphasizes the education in different fields of ultrasound and tries to find the place of US in the complexity of diagnostic and therapeutic procedures in a certain disease. For that reason, multidisciplinary participation of clinicians is always required in these meetings. One can never forget the experience to look into the valley next to Zalaegerszeg in the middle of May and see the unique blooming of “Azaleas”.

A foundation was made in memory of Lélek Imre, the famous radiologist who was one of the first in performing and educating sonography in Hungary. The “Lélek Imre” medal is given every second year to those members of the Ultrasound
Section, who made a special impact on ultrasound practice and education in Hungary.

Since we relish challenges, we organize several quiz meetings based on ultrasound. We have had great success in these meetings – borrowing the title from a popular TV show “Be a Millionaire? Be a poor Radiologist!”. Case presentations held from time-to-time have motivated young radiologist to conduct presentations.

The Ultrasound Section is also dealing with the hotspots of diagnostic US, like: suggestions for regulation and licensing of US practice in our country, recommendations to purchase modern US equipments, educational requirements for postgraduate doctors and sonographers, recommendations for the Hungarian College of Radiologists related to US practice.

The executive board of the Ultrasound Section is also willing to introduce new applications and development of US. The potential role of US contrast agents, 3D ultrasound, and new software applications has been discussed on meetings organized and sponsored by the Ultrasound Section of the Radiological Society.

dr. Zoltán Harkányi, dr. Zita Morvay

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**Thoracic Workgroup**

Following is a brief history of the Thoracic Workgroup of HSR (HSR-TWG). The period is not ripe to form a section yet, thus the term workgroup.

The initial goal of the Thoracic Workgroup was first to collect radiologists interested in thoracic radiology.

Four meetings have been held to date in different regions of Hungary – first in Budapest, then Szeged (South East), Mosdós (South-West), Szombathely (North-West). The meetings are organized twice a year. This year meetings will be held in Deszk (South-East) and Veszprém (Middle West). Next year, the meeting is going to start in Eger (North-East).

Basic concept of the HSR-TWG is to review one particular topic with clinical-radiological correlations and additional lectures from invited clinical partners. Each of the sessions is oriented to different special focus topics: Digital imaging, AMBER, pediatric chest, CT, PET and MRI, MRA, pulmonary embolism, SARS, thoracic interventions.

In the future, we shall try to follow the concept of ESTI (European Society of Thoracic Imaging). Thus far, we have conducted only refresher courses with “scientific hot-topics” to be included in the near-future. The ESTI meeting this year will be a joint meeting with the Society of Thoracic Radiology, Fleischner Society, Japanese Society of Thoracic Radiology and Korean Society of Thoracic Radiology in May, in Florence.

The other vital task of the HSR-TWG will be to participate in the regional postgraduate and continuous medical education of radiologists, coordinated by the HSR.

dr. Ádám Mester

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Dr. Ádám Mester PhD, associate professor, Semmelweis University, Department of Diagnostic Radiology and Oncotherapy, Budapest
The Osteology Section (HSR-OS) was founded 16 years back, in 1998, three years before the ESSR (European Musculoskeletal Society). The members are not only radiologists, but all specialists interested in skeletal diagnostics are welcome. Annual meetings were organized in Budapest, Miskolc, Sálgótarján. Since recently has a permanent venue: Balatonfüred.

In the last six years, the annual meeting has become one of the most popular events in the country, with joint meetings organized with the Hungarian Osteoporosis and Osteoarthrology Society. These joint meetings, with CME accreditation, offer interdisciplinary approach of musculoskeletal diseases, including diagnostics, therapy and patient education. Refresher courses, scientific sessions, categorical courses, special focus sessions, posters, workshops and a large industrial exhibition offer numerous parallel activities. Annually, the most visited session is the “case reports in three minutes”. Other popular occasion is the ultrasound hands-on course during the meeting days. There are regular parallel morning and afternoon sessions as well.

Along with the annual meeting, the Osteology Section started an additional new annual special focus postgraduate course with CME accreditation since 2002: Radiology of metabolic bone disorders.

The Osteology Section has its own peer reviewed quarterly Journal in the Hungarian language for 12 years: “Oszteológiai Közlemények” with an international Editorial Board. The journal offers forum for scientific activities on the one hand and broad scientific information service via reports about national and international meetings for those, who could not participate. The journal is a forum, first of all, for Hungarian articles. There is a tradition every year: the winner of the “Best Paper Prize” gets financial support to participate in the ESSR meeting. Some high level papers from Europe are published in the journal as well, in English. The electronic version of the journal can be reached at www.mrt-os.hu page.

Active participation of the Osteology Section is evident in courses for both residents in training and postgraduate education of radiologists, in strong collaboration with radiology departments of various universities. The Osteology Section has been active by giving numerous talks in the frame of Regional Postgraduate Education Program of the HSR and for specialists of other medical disciplines.

A strong historical collaboration with ESSR is the important goal of the Osteology Section. There were two founding members of ESSR in Bonn (1992), Sándor Forgács and Ádám Mester. Sándor Forgács was elected and re-elected as Chancellor of the Executive Committee. Later, Ádám Mester was elected to the post of Chancellor. The 8th Annual Meeting was organized in...
Hungary, Budapest, in 2001. Adam Mester was chosen Vice President, and then President in 2002–2003. Sándor Forgács was elected honorary member of the Society in 2004. Active bilateral collaborations with other European societies and universities exist. We have especially long and strong links with the Royal College of UK. Numerous excellent invited speakers from Europe and USA have given refresher courses. A few of them are: Judy Adams, Alain Chevrot, Mark Davies, Ljubomir Djankov, Harry Genant, George Greenfield, Adam Greenspan, George Hermann, Herwig Imhof, Vladimir Jevtic, Kjell Johnson, Franz Kainberger, Carlo Masciocchi, Iain McCall, Simon Ostlere, Holger Pettersson, Victor Cassar-Pullicino, Thomas Rand, Maximilian Reiser, Jenő Sebes, Daniel Vanel and Iain Watt.

There is a long history of the Osteology Section participation in ISS (International Skeletal Society). The ISS is a special society, since its membership is based on elections, unlike most other organizations. Sándor Forgács is currently not only member of the society, but he is also a member of the “Committee for Promotion of refresher course outside of North America”.

The HSR-OS, chaired by Sándor Forgács, represents in all its activities the interest of HSR and has very active collaboration with HSR and other subdiscipline societies. Last year, at the 22nd Meeting of HSR, a musculoskeletal pre-congress course was organized in English with UEMS CME accreditation.

dr. Sándor Forgács, dr. Ádám Mester

Committee of the Young Hungarian Radiologists

The purpose of the committee is to represent the interests of radiologists below the age of 37 years. There are six committee members, having a four-year term. The elections were last held in June 2004.

One the most important responsibilities of the committee is to organize a biannual meeting (forum for and by young radiologists). This provides a good opportunity for the younger generation to present papers and case-reports. Several film-reading sessions and hands-on workshops are also held simultaneously. The meetings are livened up by culture and sports program.

Earlier, a successful youth club existed, which was temporarily suspended. This will be reactivated in the near-future. It is our aim to collect under one umbrella as many young radiologists as possible, and also to effectively deal with their academic and work-related issues.

The committee has been assured of continuous support in all fields by the Society of Hungarian Radiologists.

dr. Rita Somogyi

Dr. Rita Somogyi, County Teaching Hospital, Zalaegerszeg
Section of Pediatric Radiology

THE PAST

In 1898 three articles concerning pediatric radiology were published in the journal Medical Weekly. One was written by Géza Faludy and illustrated by an X-ray picture taken by Károly Kiss, an assistant at the Technical University of Budapest.

A central X-ray unit was established at the Medical University of Budapest in 1907, under the direction of Béla Alexander. From 1925 prof. Bókay, the head of Pediatrics Clinic in Budapest, was aware that radiology could not merely be carried out as a secondary or subordinate activity. The first specialized pediatric radiologist was Károly Gefferth. He qualified as a radiologist in 1933 and retired in 1971. His activity and energy did not subside till his death in 1992. He was an honorable member of the European Society of Pediatric Radiology.

In the 1960’s there was a worldwide revolution in the technical development of X-ray equipment. Many new and modern machines were adapted for pediatric practice too, mainly in the developed countries. Unfortunately, Hungary was not able to follow this trend and for several years clung on to the “old” technical level in both general and pediatric radiology. Despite the handicapped circumstances, there was progress in the scientific field thanks to profs. Zoltán Zsebők and Mihály Erdélyi, directors of the Radiologic Clinic and Postgraduate Medical School, Department of Radiology in Budapest. Meetings and consultations for pediatric radiologists were held regularly in the Postgraduate Medical School in Budapest and in other clinics around the country.

A milestone in the history of Hungarian pediatric radiology was reached in 1977. By accepting the suggestion of dr. Erzsébet Schläffer, the Pediatric Radiology Section was established within the Hungarian Radiological Society. Dr. Schläffer was the first president of the section and was reelected twice for a total of eight years. During this period there were about 60 members in the section, most of whom had specialized in both pediatrics and radiology with a special interest in new methods and results of radiology.

THE PRESENT

In 1976 a new Child Health Center was established in the Borsod County Teaching Hospital in Miskolc with 500 beds and included a pediatric radiology department (within the frame-work of The Diagnostic Imaging Center). The Department of Pediatric Radiology was initially headed by Magdolna Ormoshegyi. She was followed by Béla Lombay, who is currently in-charge.

The Diagnostic Imaging Center of the County Hospital provides all new diagnostic imaging...
modalities for the pediatric radiology department, giving the department a more versatile look.

Separate pediatric radiology departments are working in Budapest in the First Pediatrics Clinic of Semmelweis University (dr. Éva Kis), in Heim Pál Children’s Hospital (dr. Katalin Bitvai, dr. Zoltán Harkányi), Madarász Children’s Hospital (dr. Mariann Újvári), Children’s Hospital Buda (dr. Erzsébet Petrovics), the Pediatrics Clinic of University in Pécs (dr. János Weisenbach), the Pediatrics Clinic of the University in Szeged (dr. József Beviz), Bethesda Children’s Hospital, and the Second Pediatrics Clinic of Semmelweis University (dr. Gábor Rudas is currently working in Austria).

Since 2003, pediatric radiology has become a separate subspeciality. That means an opportunity for the general radiologists, after two years, and pediatricians, after three years, to take theoretical and practical examination in the topic of pediatric radiology.

Gefferth’s prize

The pediatric radiology section founded this prize for the most prominent pediatric radiologist who is announced every other year on the occasion of the international meeting of the section. To date, the following physicians have been awarded for their service to Hungarian Pediatric Radiology: Erzsébet Schläffer, György Köteles, Béla Lombay, Katalin Bitvai and József Beviz.

Scientific work, meetings

In 1988, an annual English-language international journal, Year Book of Pediatric Radiology, edited by Béla Lombay, was founded. It aimed at providing an opportunity to publish articles by colleagues not only from Hungary but from anywhere in the world. It has proved to be a great success.

Several articles from the topic of pediatric radiology are published in the journals of “Hungarian Radiology” and “Pediatrics”, too. On occasions, Hungarian articles have been published in Pediatric Radiology.

Biannually, the section organizes an international symposium with postgraduate courses for pediatric and general radiologists. Frequently, invited speakers from Europe and United States lecture in these symposium (Paul Kleinman, Alan Daneman, Peter Kramer, Hans Blickman, Elisabeth Sweet, Helen Carty, Veronica Donough, Fred Avni).

Each year special pediatric radiology scientific sections are organised at the Sopron Ultrasound Days and other Hungarian Radiology Meetings. Also, we have successfully organized half-day meetings twice a year in Budapest to discuss interesting cases.

Pediatric radiological postgraduate courses are organised for radiologists and pediatricians every year at the Semmelweis University in Budapest (dr. Éva Kis).

One of the most important event for our Society was the 29th Annual Congress of the European...
Society of Pediatric Radiology (ESPR), organized in Budapest in 1992 with 400 participants from Europe and overseas. It was certainly a memorable and successful meeting.

In 2002, a successful international Musculoskeletal Course of ESPR was organised in Budapest for young radiologists (dr. Béla Lombay, dr. Éva Kis). Many Hungarian pediatric radiologists annually participate in the ESPR and ECR with papers, posters or as invited chairmen. They also attend the international courses of ESPR every year.

International connections

With the help of the Soros Foundation, between 1989–1992, eight Hungarian pediatric radiologists spent six week in Toronto at the Imaging Department of the Sick Children Hospital. During that period, four Canadian radiologists spent some weeks in Hungary. The European Pediatric Radiology Society have seven Hungarian members with prof. Béla Lombay as the honorary member of the society. In recent times, Béla Lombay has been the member of the Pediatric Subcommittee of ECR. Éva Kis has been selected to serve on the Pediatric Subcommittee of ECR in 2005 and 2006.

As a result of cordial relationship with the international faculty, the Hungarian Radiology Society gave the title of honorable member to the following: Alan Daneman (Canada), Charles Gooding (USA), Paul Kleinman (USA), Hans Ringertz (Sweden), Elisabeth Sweet (Scotland), Eberhard Willich (Germany) and Helen Carty (England).


dr. Éva Kis, dr. Béla Lombay

Breast Diagnostic Section

The continuous development in breast diagnostics and screening made it necessary to bring together the Hungarian breast radiologists in a section which dealt with the problems of this subspecialty. The section was founded in 1998. By 2004 it had 256 affiliated members (21% of the Hungarian radiologists). The board consists of nine members, with elections every four years.

In the past six years, the section was very successful. As the first step towards providing quality care in breast diagnostics, we surveyed the professional and technical facilities available to us in Hungary. Thereafter, we made contacts among Hungarian and international breast organisations and professionals to seek their help and advice.

Main steps taken to ensure quality care in breast diagnostics:
– At the beginning, a review of the technical background and radiological knowledge in the field of Hungarian breast diagnostics.

Katalin Ormándi, president of the Breast Diagnostic Section

Gábor Forrai, secretary general of the Breast Diagnostic Section

Dr. Katalin Ormándi, consultant radiologist, International Medical Center, Szeged
Dr. Gábor Forrai PhD, head of the department, National Medical Center, Department of Radiology, Budapest
E-mail: forrai@qwertynet.hu
– Creation of a “minimum requirements” list for screening and diagnostic examinations.
– Revision of the clinical codes for breast diagnostics, with suggestion to create a uniform coding system.
– Preparation of the Hungarian Breast Screening Program with the help of screening expert professor Zoltán Péntek.
– National Screening initiated in December 2001.
– Creation of the 1st version of the National Screening Protocol, including QC details (edition of the 2nd version of the National Screening Protocol currently in progress).
– Permission of Health Authorities for acceptance of breast vacuum core biopsy examination is under consideration.
– Important issue of training and refresher courses were instituted with the intention of providing uniform breast diagnostics knowledge and patient care. Significant number of refresher courses were organized by our section, on occasions with other disciplines. Members and leaders of our section are regular instructors on different meetings, for eg.: National Congress of Radiology, Hungarian Congress of Oncology, Hungarian Society of Sonology courses, Lelek Imre, St. Agathe meeting etc.
– Quality courses regularly organized by Szeged University (Szeged), the National Medical Center (Budapest) and in the framework of the annual French-Hungarian Radiology Symposium.
– Secretary General of our Section (Gábor Forrai) has been elected as a member of the Breast Subcommittee of the European Congress of Radiology for four years, with responsibility of presenting refresher courses.
– We have organized events in 1999 and 2004 where professors Tabar and Tot (Sweden) have conducted courses for Hungarian screening centers. Experts from Nijmegen, Netherlands (prof. Holland), France (Chopier, Dilhuydy), Nottingham, UK (prof. Wilson, Ellis), Sweden (Bone) and many others have shared their knowledge with us in the recent years.
– Our section’s annual meeting is held regularly with participation of more than 100 physicians and health-care professionals. The meeting is coupled with a scientific program and case discussions. Also, we regularly give importance to the questions arising in the medico-legal arena. Leaders of our section have participated as authors in educational books dealing with topics in breast cancer, ultrasonography and breast screening. The main goal of the Hungarian breast diagnostics is to achieve full EU compatibility.

dr. Katalin Ormándi, dr. Gábor Forrai
Honorary members of the Society of Hungarian Radiologists, 1968–2004

L. Heinz, Germany, 1968
J. Becker, Germany, 1968
F. Gietzelt, Germany, 1968
B. Lagunova, Soviet Union, 1968
J. Sokolov, Soviet Union, 1968
M. Smokvina, Yugoslavia, 1968
C. E. Unnérus, Finland, 1968
A. Vallebona, Italy, 1968
E. Vogler, Austria, 1968
F. Wachsmann, Germany, 1968
A. Ratti, Italy, 1969
L. Psenner, Austria, 1970
W. Fromhold, Germany, 1972
J. R. van Ronnen, The Netherlands, 1974
W. Sváb, Czechoslovakia, 1975
R. Barke, German Democratic Republic, 1976
J. Holy, Czechoslovakia, 1976
G. Liess, German Democratic Republic, 1976
P. Virtama, Finland, 1976
L. Oliva, Italy, 1977
O. Olsson, Sweden, 1977
L. Sz. Rosenstrauch, Soviet Union, 1977
E. Baudisch, German Democratic Republic, 1978
J. Kolár, Czechoslovakia, 1979
W. Frick, German Democratic Republic, 1983
E. Boijsen, Norvay, 1987
E. Gedgauads, USA, 1987
A. Belán, Czechoslovakia, 1980
W. Angerstein, German Democratic Republic, 1980
K. Bitter, Czechoslovakia, 1980
M. A. Wiljasalo, Finland, 1981
L. Diethelm, Germany, 1982
W. Kröger, German Democratic Republic, 1982
A. S. Pavlov, Soviet Union, 1984
Z. Chudacek, Czechoslovakia, 1985
H. W. Heuck, Germany, 1985
K. H. Karcher, Austria, 1985
J. Lissner, Germany, 1985
I. Obrez, Yugoslavia, 1985
E. Schumann, German Democratic Republic, 1985
K. Köhler, German Democratic Republic, 1986
M. Lüning, Germany, 1986
G. Veréb, Czechoslovakia, 1986
J. Doppman, USA, 1987
J. P. Mans, Germany, 1987
H. Kuttig, Germany, 1988
P. Hermann, USA, 1988
J. E. Rabkin, Soviet Union, 1988
J. Tavera, USA, 1988
A. F. Tsyb, Soviet Union, 1988
E. Willich, German Democratic Republic, 1988
R. J. Zajgner, Poland, 1988
A. Cardinale, Italy, 1988
W. Castaneda-Zuniga, USA, 1988
W. Moldenhauer, German Democratic Republic, 1989
O. Billiewicz, Poland, 1990
K. Brezina, Austria, 1990
H. Pokieser, Austria, 1990
E. M. Sweet, United Kingdom, 1990
L. Diankov, Bulgaria, 1991
B. B. Goldberg, USA, 1992
A. Ny. Kishkovszky, Soviet Union, 1992
F. Olbert, Austria, 1992
H. Ringertz, Sweden, 1992
C. Gooding, USA, 1993
G. A. W. Gooding, USA, 1993
L. Dalla Palma, Italy, 1993
A. L. Baert, Belgium, 1994
J. M. Bigot, France, 1994
A. Daneman, Canada, 1994
A. Fueredi, USA, 1994
T. M. Gyepes, USA, 1994
F. K. Kleiman, USA, 1994
C. G. Standertskjöld-Nordenstam, Finland, 1994
H. Imhof, Austria, 1996
N. Besensky, Croatia, 1997
J. M. Caillet, France, 1997
I. Lovasic, Croatia, 1997
S. Simunic, Croatia, 1997
M. Blery, France, 1998
R. Müller, Austria, 1998
S. Giorgescu, Romania, 1998
F. Joffre, France, 1998
K. Glavina, Croatia, 1998
M. Kasbarian, France, 1998
J. C. Fromment, France, 1998
V. Jevtic, Slovenia, 1999
C. Flower, United Kingdom, 1999
A. Dixon, United Kingdom, 2002
N. C. Gourtsoyiannis, Greece, 2002
G. Krestin, The Netherlands, 2004
G. Hermann, USA, 2004
H. P Weskott, Germany, 2004
H. Carty, United Kingdom, 2004

Pro Radiologia Hungarica Medal

A. Baert, Belgium, 1996
L. Dalla Palma, Italy, 1996
J. M. Bigot, France, 1996
A. Pokieser, Austria, 1996
A. Fueredi, USA, 1996
Visit our website!
http://www.socrad.hu

The site is meant to provide information for Hungarian radiologists. It contains information on society activities and resources.

On the site you can obtain information about radiology, the structure of the society and training requirements for careers in radiology.

This site is open to all users, but the members area is only available for medical professionals with a valid password. Through the members area you get access to a wide range of information and services provided by the society and associated organizations:
– calendar,
– annual scientific meetings,
– information related to standards,
– accreditation program,
– Journal of Hungarian Radiology,
– Year Books of Pediatric Radiology,
– online registration.

You can navigate this site by using a menu, shortcut menu or keyword search engine.

dr. Péter Bágyi

Dr. Péter Bágyi, consultant radiologist, Regional Hospital, Department of Radiology, Mátészalka
E-mail: radiologia@doki.net
The Institute of Diagnostic Imaging and Radiation Oncology at the University of Kaposvár was founded in 1989 with the aim of providing research, education and health care. This concept is represented by the design and location of the facility that is now part of the university campus located outside downtown Kaposvár. Today, the institute is a major site for modern diagnostic imaging in Hungary, equipped with the latest technologies in computer tomography and magnetic resonance imaging. Three years ago the radiation therapy unit opened with two linear accelerators and additional equipment supporting 3D conformal radiation therapy methods. It is of crucial importance that the institute has close working relationship with the Faculty of Animal Sciences at the university that provides the technical basis and human resources required for high volume of animal experiments (also performed on domestic species). In fact, University of Kaposvár has been applying cross-sectional imaging methods in animal breeding research and production since the late 80s. For this reason the institute is internationally recognized as involved in some EU research projects recently.

Through the years, a section for experimental radiology was developed comprising of two animal operation suites, a DSA and CT laboratory and a 0.35 T MR scanner. Nevertheless, in principle it is also possible to use the latest generation CT and MR scanners (Siemens Sensation and Avanto) for experimental purposes. Other than our own scientific projects, several research collaborations are currently running that involve medical and non-biomedical studies. The collaborations in medical research reach out to other disciplines, like cardiac and orthopedic surgery and ENT. The most important non-biomedical application is the study of geological samples for the Hungarian Oil Company. The experimental facility is also hired by companies for projects that require animal experiments for testing e.g. implants or interventional tools. Among many of the past and present collaborators, the long-standing scientific relationship with the Department of Radiology of Brigham and Women’s Hospital at Harvard Medical School has to be emphasized.

The institute has a leading health-care role to play in the south-west of Hungary. Over 25,000 patients are examined yearly in the imaging facility and about 2,000 patients are treated at the radiation therapy unit. There have been several methods applied for the first time at our institute in Hungary – some are still only employed at our centre. The technical basis of a close partnership with the local county hospital is currently under discussion. This would possibly enable common digital image archiving system that can be used by all...
departments of the hospital using teleradiology protocols.

The institute is a well-known site for graduate and post-graduate education in Hungary for radiology and radiography. In addition, we also train professionals from neighbouring countries, like Croatia and Yugoslavia. The radiologists from the institute initiated a B.Sc. level radiographer training program two years ago in Kaposvár, Hungary. Also, there are courses in cross-sectional imaging for the students of the animal sciences faculty.

dr. Imre Repa, dr. Péter Bogner

Zala County Teaching Hospital
Radiology and Nuclear Medicine Department

The Zala County Teaching Hospital was founded in 1848 with 12 beds. During the next 150 years it had become a highly-developed, prominent health institute in western Hungary. Since 1974, the institute has been functioning as a teaching hospital of the Pécs Medical University. These days, the hospital is furnished with 1229 beds and is responsible for the health-care of more than 300 000 people. Since 1993, ISO 9001 quality standards have been implemented.

The radiological department was established in the fifties. The department demonstrated rapid development under the direction of prof. dr. Lélek Imre during 1968–1986, who came from the Medical University of Szeged. He established the conditions for angiography in 1971. He founded the country’s famous ultrasound laboratory with the first real-time US equipment in Hungary in 1978 – this became the first training center.

In 1985, the Zala County Hospital had the first DSA in the west of Hungary. Professor Lélek Imre organized the DSA laboratory suitable for diagnostic and interventional procedures such as peripheral and carotid stent implantations, PTA, chemoembolisation, biliary interventions.

The diagnostic equipment has been under continuous observation and upgrading since 1992. This year, dr. Gyöngyi Nagy became the head of the department. Dr. Nagy specialized in radiology in 1987 and ever since then she has played an important role in the development of the department. She organized several local, national and international meetings and is serving a second four-year term as the secretary general of the Hungarian Society of Radiologists.

In western Hungary, our department inaugurated the first modern mammographic laboratory in 1993. Since then, the mammography team has been able to use complex diagnostic methods in breast diseases. Not long after that we introduced the breast cancer screening in 1995. At the beginning, the screening was financed from grants, later sponsored by the World Bank. We could widen the

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Dr. Gyöngyi Nagy, head of the department, Zala County Teaching Hospital, Radiology and Nuclear Medicine Department, Zalaegerszeg

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We introduced the low dose technique in the virtual colonoscopy, too.

Today 12 units exist: conventional radiography, US diagnostic and interventional laboratory, CT, MR, DSA, mammography unit and nuclear medicine department.

Presently the staff consists of 15 specialist radiologists, 50 assistants, 12 clerking officials and one engineer.

The doctors are working on daily rotational system. The routine diagnostic examinations are performed by all radiologists. Smaller groups work in different subspecialities like neuroradiology, US-, DSA-intervention, mammography, diseases of GI tract, pediatric radiology. Regularly, once a week, there are paper presentations from the recent literature. We are also present at the national and foreign scientific meetings.

It is very important for us to keep in contact with the clinicians. Weekly consultations, film-demonstrations are held in our department for the urologist, internist, oncologists. For many years, a so-called “onco-team” has been working to draft diagnostic and therapeutic plans. The team consists of a surgeon, a pathologist, an oncologist and a radiologist, who meet once every week.

As a teaching hospital of the Medical University of Pécs, great attention is paid to the education of assistants and operators. Graduate education is an ongoing process in our department – 14 assistants received diploma in diagnostic imaging techniques.

Our department is the organizer of the Lélek Imre memorial conference biannually in Hévíz, where we remember the pioneering work of prof. Lélek. Several invited lecturers present the newest techniques in radiology and we display our own results.

Besides the professional work, the members of the enthusiastic staff sometimes organise family programs and meetings. Few years back, a dance club called “Sugar girls” (sugar means radiation in Hungarian) was organised by the workers. This team traditionally has performances in different professional and social meetings.

Every year at Christmas time and in May, when the rhododendrons are blooming, we regularly organise meetings, where the retired colleagues are invited to attend.

Dr. Gyöngyi Nagy
Technical innovation in the area of clinical diagnostics has accelerated incredibly, primarily as a result of the steady development of information technology. However, in Central and Eastern Europe, insufficient budget (state and municipality) funding lead to a 10-15 years technological lag in both branches of imaging diagnostics, i.e. in radiology as well as in nuclear medicine. The elimination of this difference and keeping up with the pace of this accelerated development requires significant investments and a change in our way of thinking. The expensive equipment can only be operated economically with a properly qualified staff, the right number of patients and only if they work 24 hours a day, seven days of week. This goal can only be achieved in large diagnostic centers with a versatile profile. The Euromedic company group was created in 1991 with the purpose of establishing and operating such centers. Our company was the first in Hungary, who used all possibilities of the PPP (private – public – partnership).

In strategic cooperation with General Electric Medical Systems, the company created and operates imaging diagnostic centers in the region. Today, Euromedic is already the leading private company in Central and Eastern European health care market and the largest investor in the imaging sector in the region.

Within the scope of the “Turn-Key Project”, Euromedic would:

- provide planning and create a location for the project;
- provide complete reconstruction;
- equip the centers with state of the art instruments;
- provide modern IT equipment and teleradiology connection between centers;
- organize health-care and administrative management;
- educate, train and employ health-care, technical and administrative staff, with help of predominantly local experts;
- arrange for the procurement of materials, assets and external services necessary for operation as well as equipment repair and maintenance.

The company has operated in Hungary since 1991 under the name of International Medical Centers (IMC). Its first center was created in Budapest which was followed by centers in Szeged and Győr. Currently, our company provides comprehensive imaging diagnostic services in eight centers, including two universities (Debrecen and Szeged) (figure 1). Approximately 700 people are employed full- or part-time in the centers and we perform about 5-600,000 examinations on our 55 radiology and nuclear medical modalities. Among our top equipment are five MRI, twelve CT and two DSA equipments. These machines provide 19-20% of the diagnostic services of this area (figure 2). The number of investigations and the financial turnover of our centers increased dynamically in the past twelve years (figure 3).
The owners of our multinational company are General Electric Medical, Dresdner Kleinwort Benson (the investment house of Dresdner Bank), the US investment group Global and several individual investors. The most important activities of the company include cooperation with governments, governmental institutions and health funds. In addition to Hungary, the company operates diagnostic and dialysis centers in Poland, Romania, Bosnia and Russia – a total of 36 units. Currently, negotiations are in progress on the creation of centers in the Czech Republic and Croatia.

IMC does not trade machines but provides services. Our goal is to completely satisfy patients with the services provided by our colleagues. We provide guaranteed quality services and operate with quality assurance system internationally attested with the latest professional protocol. We are open to development and are pioneers in the introduction of new methods and new imaging procedures. Our teleradiology system helps in rapidly forwarding of the images and results of examinations, consultations involving several experts, procedure-specific supervision and even the replacement of temporarily absent colleagues with the right experts possible.

To ensure high-level patient treatment and to maintain our position in the market, we perform continuous techni-
cal developments on the basis of the 15–25 year service agreements conclud-
ed with the owners of the institutions (the government or municipalities) requiring long-term, appropriate professional and business cooperation.

The activities of the Euromedic centers are not limited to diagnostics. The large number of examined patients, the professional experience gained, the information gathered for scientific purposes and the good qualifications and expertise of our colleagues enables us to transfer our knowledge primarily at the universities within the scope of graduate and post-graduate training courses and at professional forums. In recent years, we have provided training to several hundred medical students and practicing physicians and many of our colleagues acquired academic degrees (four of them received PhD-s). Our professional expertise is ensured by six university professors and 13 colleagues holding academic degrees (PhD).


dr. Zoltán Katona, dr. László Csernay

Waiting room in a diagnostic center of Euromedic

HUNIKO Health Servicing and Trading Ltd.

From 1989, following a change in the state system in Hungary, there were some changes in certain spheres of the National Health Care. The main features of the Hungarian Health Care Service at that time were the deficiency of funds and outdated infrastructure (equipment).

The sphere of imaging diagnostics was always an area with big investment needs, and purchase of digital equipment would have meant an especially huge expenditure for the state budget. This is why this area of medicine was launched early into the process of privatization. The process could be

Dr. János Gyarmati PhD, director, Dr. Béla Fornet PhD, managing director, HUNIKO Ltd, H-3530 Miskolc, Petőfi street 13.
materialized through so-called “functional privatization”, which meant that within the state hospital only the radiological function was privatized. The buildings, infrastructure and equipment remained the property of the state, which would rent these out to private partners. The settling of accounts was being done on the base of a contract between the hospital and municipal body, or was done through a direct contract with the National Health Insurance Office.

During the change in the political system of the country, health insurance policies were also revised. These changes were initiated by separate Health Insurance financing of CT and MR. In 1991, the first private Diagnostic Center – International Medical Center – was established, which started its activity with the CT-MR and SPECT cameras and ESWL. These first few steps helped pave the way for private radiological activity in the country. Similar centers were inaugurated all over the country, at times involving whole departments run by radiologists.

HUNIKO Ltd. was established in 1995 and started to operate imaging diagnostics and was involved in different research activities. It was the first company in Hungary to operate with a complete range of radiological activity. Company has three regional centers for the medical attendance: “Jósa András” Regional Hospital in Nyíregyháza, Miskolc city Hospital in Diósgyőr and Flór Ferenc Hospital in Kistarcsa (Pest region).

The hospital in Kistarcsa started to operate high capacity MR equipment, which could be further used for spectroscopies. On this site first and foremost was performed examination of children with MR equipment and MR intervention activity in several scientific competition forms was also started.

All above three regional centers assure a 24-hour 7-days a week care. All three sites have a CT and a MR machine each, operating. These three centers provide diagnostic-care to 600 000 people in Nyíregyháza area, 400 000 people in center of Kistarcsa and 200 000 people in Diósgyőr.

Each year we perform 15 000 CT and 13 000 MR examination in Nyíregyháza, 10 000 CT and 10 000–11 000 MR examination in Kistarcsa. A total of 400 000–450 000 radiological examinations are performed per year. Our human resources are made up of 130 health technicians, 40 doctor radiologists, three-four residents. Eight people have PhD degree.

It should be emphasized that since 1998, hospital of Kistarcsa for the first time in Hungary started digital radiological activity with phosphorus plate technique. Regional Hospital of Nyíregyháza saw the introduction of digital radiology in 2004. It operates on eight sites together with the complete PACS system, gradually switching over to radiology without film use.

Each center also has the facilities for interventional radiology (especially, angiological), bone densitometrics, breast diagnostics and medical filter examination. In 2003, hospital of Nyíregyháza was the biggest workplace for the prevention filter examination in Hungary.

For the purposes of research activity, we established cooperation with the following enterprises: Budapest University of Technical and Economic Sciences, Department of Electric Engineering and Information, and University of Kaposvár (Department of Veterinary Medicine, Institute of Diagnostics and Oncoradiology). The main theme of research is prevention of re-stenoses (following stenting). The Medical Center of Debrecen University, Institute of Clinical Biochemistry and Molecular Pathology also participates in this research.

HUNIKO Ltd. has the following goals for its work: digitalizing of the whole diagnostic work and refurbishment of the equipment, provision of tele-radiology between the sites and the users, and wider cooperation with the regional university centers in the spheres of research and education. Our goal is also to participate in both practical and theoretical education of diagnostic imaging technicians and nursing radiologists at college level, a system which was initiated a year back.

dr. János Gyarmati, dr. Béla Fornet
Hungarian participation in ECR

Hungarian radiologists have participated in ECR meetings regularly, rising both in quantity and quality of participation. In 2003, there were 291 Hungarians out of a total of 7614 ECR participants. This increased to 321 out of 8677 in 2004, in Vienna.

Numerous invited speakers, Committee and Subcommittee members and chairpersons of different sessions have been Hungarians.

Prof. Ernő K. Makó was the member of the highest board: ECR’ 2000 Committee. Prof. András Palkó is the member of the Program Planning Committee this year. András Vargha was the member of the ECR Program Planning Committee in 2000–2002. Musculoskeletal Subcommittee chairperson this year is Ádám Mester. In 2006, the Abdominal and Gastrointestinal Subcommittee chairperson will be András Palkó. Hungarian members (past, present and next year) of multiple subcommittees: prof. Béla Lombay and Éva Kis (Pediatric), Sándor Forgács, Ádám Mester and Kinga Karlinger (Musculoskeletal), Péter Barsi (Neuroradiological), Gábor Forrai (Breast), András Palkó and Zsolt Tarján (Gastrointestinal), Károly Hrabák (Maxillo-facial), András Vargha (Urogenital).

The following have been invited speakers of postgraduate courses (PS, RF, CC, WS):

Ernő K. Makó: Imaging of small intestinal tumors by enteroclysis and CT (1997),
Zoltán Harkányi: Doppler ultrasound in the pediatric abdomen (1997),
Zoltán Harkányi: Advances in pediatric imaging – US Doppler of the abdomen (1999),
Zoltán Harkányi: Pediatric gastroenterology US and CT in pediatric liver tumors: Diagnosis and follow-up (2000),
Kinga Karlinger: Image Interpretation Panellist in chest and gastrointestinal topics (2000),
Ádám Mester: Image Interpretation Panellist in musculoskeletal topic (2001),
Károly Hrabák: Imaging of the larynx and hypopharynx. Technique and anatomy (2001 and 2002),
Zoltán Harkányi: Pediatric liver masses: An update on imaging (2002),
Ernő K. Makó: Causes of errors in radiology. Special focus session (2002),
András Palkó: Image Interpretation Panellist in gastrointestinal topic (2003),
Gábor Forrai: Postoperative imaging and interventions (2003 and 2004),
Zita Morvay: Shoulder and upper limb ultrasonography (2004),
Ernő K. Makó: Crohn’s disease of the intestinal tract, advances in imaging – CT and CT enteroclysis (2005),
István Battyány: Arterial and venous liver intervention – Chemoembolization (2005),
Ágnes Séllei: Junior Image Interpretation Panellist (2005),

Special session for this year is the “ECR meets Hungary” on Sunday, March 6, 10.30–12.00, in Room A.

The session will highlight about the present and future of Hungarian radiology. It will be chaired by ECR president prof. Antonio Chiesa and HSR president, prof. Béla Lombay.

The introduction lecture will be delivered by prof. András Palkó.

Speakers and topics are:
Péter Bogner: What do we see on diffusion MR images? A lesson learned from model experiments.
Péter Barsi: Epilepsy patient: The complex neuroradiological approach.
Réka Szentgyörgyi: Radiological diagnosis and treatment of carotid artery stenosis.
István Lázár: Interventional radiology in portal hypertension.
Zsolt Tarján: Results of the virtual colonoscopy CAD project.

Hungarian radiologists have been active in multiple sub-discipline societies of ECR as well:
Tibor Baranyai, board member of European Society of Urogenital Radiology: ESUR.
Sándor Forgács, re-elected board member of European Society of Musculoskeletal Radiology, and became honorary member of ESSR in 2004.

Gábor Forrai, organizer and speaker at the 2nd Central East European Francophone Congress, Budapest 1998 and congress-president and speaker in 2005 (5th Congress)


László Horváth, board member of Cardiovascular and Interventional Radiological Society of Europe: CIRSE, and he was congress president in Budapest (1993).

József Kenéz, board member of European Society of Neuroradiology: ESNR.

Béla Lombay, society president and congress president of the European Society of Pediatric Radiology in 2002.

Ernő K. Makó, congress president of European Society of Gastrointestinal and Abdominal Radiology: ESGAR’ 2003. He will also be the congress president of Management in Radiology: MIR’ 2006. He was the first chairperson of “Central-, South European and Turkish Collaboration in Radiology” branch.


The above data gives clear evidence of Hungarian radiologists being active partners of European radiology for much longer than becoming full-members of the European Union last year.

Hungary works actively in EAR and UEMS. One of the four speakers of the Annual EAR Leadership Meeting this year was invited from Hungary to give a lecture on national radiology training. There was a Hungarian lecture in Rome at the Telerradiology Meeting of UEMS Radiology Section in 2004.

We cherish the strong collaborations we have had with the Royal College of Radiologists in the UK and with the French Society of Radiology. We traditionally hold annual trilateral meetings with the Croatian and Slovenian societies of radiology. We are going to organize the next meeting in 2006 together with the Austrian Society of Radiology.
The present and future of Hungarian radiology: Contribution by the new generation

Dr. András Palkó professor of radiology, head of the department,
University of Szeged, Department of Radiology; Szeged
and
dr. Béla Lombay, head of the department, Borsod County Teaching Hospital, Department of Radiology; Miskolc

Being invited by the president of ECR 2005 as one of the countries “meeting ECR” is among the most important successes in more than a century old history of Hungarian radiology, thus we can be very proud to have the honor to introduce the session “ECR meets Hungary”.

The list of speakers and topics discussed by them were selected to express the rich traditions of Hungarian radiology today. These, in turn, may be best represented by those young scientists who belong to the new generation, having the opportunity to spend the most productive period of their professional life as citizens of a new member country of the European Union.

The lectures discussing results of experiments on diffusion MR imaging and automated colon CT diagnostics, applied clinical research on epilepsy diagnostics and interventions in the liver and the carotid vessels give good examples of the wide range of ongoing scientific activity in university and hospital departments and research labs indifferent regions of Hungary.

We hope that the ninety minutes of the session will give a good impression and provide a lot of valuable new information regarding Hungary and Hungarian radiology at the time of our second homecoming to Europe.

**Learning objectives:**
1. To introduce significance of being one of the countries invited to the ECR Meets program.
2. To introduce principles of speaker and topic selection to the ECR Meets Hungary session.

What do we see on diffusion MR images? — A lesson learned from model experiments

**Purpose:** Diffusion imaging is highly sensitive to detect changes in water movement that is characteristically reduced in ischemic stroke as a consequence of cytotoxic edema. In addition to changes in water diffusion, the osmotic properties of ischemic brain tissue is progressively altered. In cellular model experiments, the impact of cellular volume changes on water diffusion as well as the relationship of diffusive and osmotic characteristics of cellular water were investigated.

**Methods and materials:** Mammalian erythrocytes with different protein hydration levels were used.
Along with cellular volume changes, the osmotic resistance and the amount of osmotically unre sponsive water were determined. Water diffusion was measured with the Stejskal–Tanner sequence (b-factor: 0–17.684 s/mm²) on a Varian Inova Unity MR microimaging system.

Results: It was shown that a two-fold change in cellular volume (protein hydration) results in only about 20% change of water diffusion in human erythrocytes. However, cellular volume change causes a significant alteration in the osmotic behavior of the cells that – in this experimental model – is a consequence of the change of protein hydration and most likely protein aggregation.

Conclusion: Water movement is restricted in living tissues due to three major reasons, namely: 1. the presence of biological membranes, 2. molecular obstruction, and 3. water binding mainly to macromolecules (protein hydration). It seems likely, that the osmotic behavior is closely related to protein hydration but water diffusion depends also on other mechanisms as mentioned above. The possible mechanism of reduced water diffusion and altered osmotic behaviour in brain ischemia will be discussed.

Learning objectives:
1. To define parameters that characterize the osmotic behavior of a cell – membrane characteristics, osmotically inactive water, protein hydration water.
2. To introduce the relationship of osmotic and diffusive characteristics of cellular water.
3. To implement experimental results in diagnostics of DWI and suggest possible therapeutic consequences.

Epilepsy patient: The complex neuroradiological approach

Material and methods: We examined more than 1000 epilepsy patients by MRI (from 0.5 Tesla to 1.0 and 1.5 Tesla), and some by CT. We used the protocol containing thin T2 and proton density/FLAIR slices perpendicular to the hippocampus, and 3D acquisition with multiplanar and surface reconstructions to rule out important causes: hippocampal pathology and cortical dysplasia. We used the same protocol for postoperative cases. We performed 3D MRI for the anatomic localization of intracranial EEG electrode buttons detecting epileptic discharges during EEG monitoring. We used T1 IR instead of 3D for patients below two years of age – age where myelination ends. CT’s only role was to detect calcification. We discussed our findings in detail with clinicians and nuclear medicine experts.

Results: 1. The commonest causative pathologies were hippocampal sclerosis and cortical dysgenesis. 2. Focusing on the hippocampus resulted in the
identification of dual pathology in 15 cases, and, hippocampal malrotation in 40 cases. 3. Evolving hippocampal sclerosis in seven cases of SMEI. 4. A subtype of extensive closed lip schizencephaly with mild clinical picture. 5. A characteristic feature in cases of anterior and posterior dominant lissencephaly. 6. MRI of invasive EEG electrodes proved to be useful in the focus localization of dubious focal epilepsies. 7. Postoperative analysis of unsuccessful cases is a work in progress based on volumetric approach.

Conclusions: 1. The proper epilepsy MRI protocol is essential in the pre-, perioperative and postoperative diagnostics of epilepsy. 2. The protocol should be used even in cases of other pathologies or generalized epilepsy cases. 3. Imaging results reach their final value through the close cooperation with the clinicians.

Radiological diagnosis and treatment of carotid artery stenosis

Dr. Réka Szentgyörgyi, consultant radiologist,
Szeged University, Department of Radiology; Szeged

Stroke is the No. 1 cause for disability, and No. 3 among all causes of death, preceded only by diseases of the heart and cancer. Thromboemboli originating from stenosed carotid bifurcation are the cause of stroke in 12–60%. Noninvasive imaging techniques are widely available for the diagnosis of internal carotid artery (ICA) stenosis. Carotid artery stenting (CAS) is slowly being favoured over surgical endarterectomy (CEA) for the prevention of stroke.

Duplex Doppler examination is the standard tool for screening of carotid artery stenosis. For pre-procedural evaluation (before CAS), however, it has to be augmented with CT angiography or MR angiography for more precise stenosis measurement and additional pathological findings in the region of supraaortic vessels.

Indications for CAS are similar to those of CEA, but more importantly, it is also feasible for patients considered high risk for surgery. Complication rates much lower than those with CEA if careful pre-procedural planning and endovascular equipment selection is undertaken. Risks of anesthesia, wound infection, cranial nerve palsy and complications related to relatively long clamp-time are avoided with stenting. Peri-procedural patient care is vital for the success of CAS. Restenosis can be successfully managed with cutting balloon.

Learning objectives:
1. To learn the aspects for preprocedural evaluation for carotid artery stenting.
2. To learn the indications for CAS.
3. To learn the significance of “passive protection” for CAS.
INTERVENTIONAL RADIOLOGY IN PORTAL HYPERTENSION

Background: Viral and alcohol induced cirrhosis are the principle causes of PH in Europe. The remaining causes of cirrhosis are the sequelae of various metabolic or idiopathic disorders of the liver. Ultrasonography (US) is the most widespread diagnostic procedure in PH, combined with invasive mesenteric angiogram. In early stages of cirrhosis, PH symptoms threaten the patient more than the parenchymal impairment of the liver. Transjugular intrahepatic portosystemic shunt (TIPS) is indicated in that stage or later as a bridge to liver transplantation.

Procedure details: When clinical and endoscopic signs of PH are present, an assessment of portal hemodynamics is performed by US. It is important to assess pre- and post hepatic PH. Portosystemic collaterals and frequent incidental hepatocellular carcinoma are evaluated by computed tomography, or recently, MR. Our single center has an experience of 80 TIPS and 27 revision including 12 stent-graft procedures, pediatric case and TIPS in patient with portal cavernoma.

Conclusion: Interventional radiology is the method of choice in the treatment of patients with PH. Up-to-date imaging methods and continuously growing experiences make the TIPS procedure safe and reproducible. The use of e-PTFE covered stent-graft, compared to bare stents, reduces the rate of repeating the procedure and thus prolonging TIPS patency. Procedural and technical problems can almost always be overcome but more important obstacles like restenosis and hepatic encephalopathy have still not been solved to satisfaction.

Learning objectives:
1. To remember the most frequent etiology and imaging methods for portal hypertension (PH).
2. To become familiar with the indications and techniques for the interventional radiological management of PH.
3. To illustrate the results and complications of transjugular intrahepatic portosystemic shunt.
4. To outline the pros and cons of PTFE covered stent in TIPS procedure.

Result of the Colon Cad project

The aim of the project was to develop a PC-based virtual colonoscopy application which needs minimal user interaction, with automated functions that may be used as a screening modality as well. ColVis is a PC based virtual colonoscopy application developed for in-house use by two universities. It does not require high-end workstations, but runs on desktop PCs or laptop computers. The software handles DICOM inputs from all the major vendors. The colon is not segmented, but interactive real time ray casting is used, which allows high speed, high resolution volume rendering. To locate the position of the virtual camera, semiautomatic region growing algorithm segments the colon and cast or transparent volume rendered view is used. Besides orthogonal MPR views, for fast evaluation of suspected lesion composition of an oblique image perpendicular to the virtual camera plane may continuously be used, which can be adjusted to the lesion. The algorithm allows automatic cen-
terline extraction and generates automated videos of the whole colon. For noisy, low or ultra-low dose CT data, a filter volume enhancement with edge preservation is used.

For better patient compliance, the patient may eat normally the days before the examination. Electronic cleansing is applied. Digital subtraction bowel cleansing uses the combination of selective regional thresholding and seed growing. This enables smooth, reliable endoscopic views after electronic cleansing also in patients without cleansing bowel preparation and acceptable image quality generated from non cleansed low or ultra-low dose data.

The automated lesion detection CAD, which enables to detect polypoid lesions, is based on robust shape and density analysis algorithms. It detects all simulated polyps in plastic and pig colon fantoms without false positives, and also shows promising results in patient data. The lesion size threshold may be adjusted and algorithms help to discriminate residual stool balls from polyps.

The presentation demonstrates the features of ColVis in phantom models and in patients with colorectal diseases with colonoscopic correlation. Examples of primary 2D or 3D based colon evaluation and features shortening evaluation time are demonstrated.

Learning objectives:
1. To evaluate how PC based software may aid the reading of CT colonography data.
2. To learn the 2D and 3D based evaluation methods in colonography.
3. To understand features, which are needed for greater patient compliance examinations and get familiar with features shortening the evaluation time.
Since the iron curtain came down, a lot has changed in our home country. The change is seen not only in the fields of economy and politics, but is also manifested in the field of radiology.

As its aim, the European Association of Radiology went about raising the standard of radiological diagnostics in Central and Eastern Europe. From 1991 onwards, for about six-eight years, the EAR supported the participation of young radiologists at the ECR meetings in conjunction with the Hungarian Society of Radiology. This way, the EAR could finance around 20 radiologist at the ECR along with another 30 participants on the behest of Society of Hungarian Radiologists.

The Halley project took off, an initiative of prof. Ludovico Dalla Palma and associates. This allowed us to participate in 2-day program of lectures delivered by Europe’s best. With the help of Schering and Bracco Pharmaceuticals, this extremely popular event was held in Hungary of four occasions. The last occasion of this event was held in Budapest and Tihany in 1996. Here 20 candidates each from Bulgaria, Romania, Poland, the Czech Republic and Slovakia participated.

Such an occasions, based on academic worth and friendly environment, further paved the way for our radiologists who could now travel on exchange programs, gain personal experience and improve theirs linguistic abilities. This also improved our post graduate program.

With the help of the Royal College of Radiologists (UK), Bracco Pharmaceuticals and Mr. Peter Cox, senior radiologists visited us and conducted lectures and tutorials for our younger generation of radiologists. Every visiting group was composed of one senior and two younger radiologists. The response was overwhelming.

Also, prof. Rainer Rienmüller organized a two week postgraduate course annually. The course was made up of theoretical and practical session.

Further, the French–Hungarian connection needs on essential emphasis. This is an association which began in 1991 under the auspices of prof. Jean Michel Bigot and dr. Béla Fornet. This link is based on an annual two-day postgraduate training session. The postgraduate training takes place in the French Institute of Budapest, where 300-400 participants are yearly present. This is our largest postgraduate training event – I am glad to say that this is an ongoing process.

Yearly five-ten Hungarian radiologists are invited to participate in the French National Congress of Radiology, free of cost. Also, yearly, one young Hungarian radiologist is given the Sauvegrin Scholarship for an all-expense paid trip for the above mentioned Congress. To date, three French–Hungarian symposia have been organized along with three European Francophone Congresses in Budapest, with 17 participating countries and 400 delegates. The GREF and the French Association of Radiologists made it possible for 32 Hungarian radiologists to go on 6-12 months scholarships to France over a period of 14 years. In addition, six candidates were accommodated for a month-long stay.

The cordial conjunction of the French–Hungarian Societies of Radiologists made French radiological books available in Hungarian.

Since 2002, dr. Gábor Forrai and dr. Endre Balogh
have taken up the reigns of this group on the Hungarian side. The men in charge are constantly revising the French–Hungarian “connection” and update the new scholarships. The Society of Hungarian Radiologists is in constant touch with their French counterparts. We sincerely extend our gratitude to the French Society of Radiology, to the GREF and to the CERF.

The Royal College of Radiologists, Bracco Pharmaceuticals and the Society of Hungarian Radiologists worked together with dr. Adrian Dixon and dr. Christopher Flower to accommodate young radiologists on a two-week scholarship in Cambridge. In Cambridge alone, 12 physicians could enjoy the English hospitality. Several others have been on trips to various other centers in the UK. Our radiologist enjoy such open avenues due to the inception and running of the Halley project. This project has helped us make friends and nurture relationship abroad.

I would like to also thank the following professors: Ludovico Dalla Palma, Albert Baert, Jean Michel Bigot, Rainer Rienmüller, Adriane Dixon, Ian Watt, Christopher Flower, Michel Blery, Guy Frija, Francis Joffre, Michel Kasbarian and Alain Chevrot. These individuals have gone to great extents to support and help develop Hungarian radiology. Besides them, I would also like to extend my gratitude to professors Pokieser, Hervig Imhof, Pasariello, Hans Ringertz, Armstrong, Daniel Vanel, Jean Pierre Pruvo, Jean-Claude Fromment and Claude Marsault – they have contributed by participating in the development of our continuous radiological education. This list of names is by no way complete. The leadership of the European Radiological Association and ECR deserve a sincere mention because it was them who, in the face of all adversities facing the profession of radiology, volunteered to support our younger generation of radiologists in the past 15 years, extended moral and financial support to our cause and spared to effort in going an extra mile for us. As a senior radiologist, I see that their efforts are bearing fruit.

We have managed to nurture close contacts with our neighboring countries. The Croatian Association of Radiologists represented by professors Slavko Simunics, Ivan Lovasics and Nada Besensky came together on a single forum with the Society of Hungarian Radiologists represented by professors Fornet Béla, Vadon Gábor, József Kenéz and László Horváth. This mutual interaction took a trilateral face when Slovenia also joined this forum through the person of professor Jevtic. This forum continuous to build through a generation change – professors András Palkó, Gyöngyi Nagy and Béla Lombay are responsible for organizing the congresses on the Hungarian side.

Our cooperation with the Slovakian Association of Radiologists also developed progressively with the friendly participation of professors Jan Grunt, Josef Biliczki, Slavko Belan and Rudolf Kadlecik. Unfortunately, in the past few years this association has shown a decline.
The Romanian and Hungarian radiologists have shown good working relationship through professors Butnaru, Serban Giorgescu and Vladimir Ene. The strength of our relationship was evident at the Francophone Meeting.

The Society of Hungarian Radiologists and its foundation, Pro Radiologia, has made it a point to nurture good links with its neighboring countries and to invites delegates to participate in our congresses as guests.

The Society of Hungarian Radiologists would like to once again acknowledge the help of the following individuals by extending the Honorary Membership of the Association to: Hervig Imhof, Rainer Rienmüller, J. M. Bigot, M. Kasbarian, Francis Joffre, Adam Fueredi, Christopher Flower, Hans Ringerz, Adrian Dixon, Nicolas Gourtsoyianis, Ludovico Dalla Palma, Albert Baert, Vladimir Jevtic, Ivan Lovasic, Slavko Simionics, Nada Besensky.

Professors Albert Baert, Ludovico Dalla Palma, J. M. Bigot and dr. Adam Fueredi (USA) have received the Memorial Medal of the Pro Radiologia Foundation. This is the highest honor bestowed on an individual by our foundation.

We thank all those we have named, and all those who have not been mentioned by name but have contributed to the development of Hungarian radiology and promoted the younger generation.

The chosen list of honorary members to the Society Hungarian Radiologists is a token of our appreciation to all the helping hands.

– dr. Béla Fornet

The Ghanaian connection

It all begun in Debrecen where, as a student, dr. István Lázár, now a neuro-interventional radiologist in Miskolc, lauded over how things could look like if we decided to go and work in Ghana after completing our university education.

We concluded it couldn’t be a bad idea; something I guess might have been thought of by many in all parts of the world – good classmates wanting to be of help to the less privileged. Many such plans might have failed owing to unforeseeable factors.

Ours may not be an exception to the rule, though a substance in the pipeline cannot be ruled out. We ended up as working colleagues in Miskolc at the Borsod County Teaching Hospital. Thanks to dr. Dr. Alex Akoto Yeboah, head of the Department of Radiology, Korle-Bu Teaching Hospital, Accra, Ghana.
E-mail: ayeboah@libr.ug.edu.gh

Dr. Alex Akoto Yeboah

Alex Yeboah with his Hungarian colleagues

42 Alex Akoto Yeboah: The Ghanaian connection
János Gyarmati who saw the need in allowing me to do my Postgraduate Program there at the time when it was becoming more difficult for foreigners to be engaged.

Shortly after, I met prof. Béla Lombay who as a president of ESPR co-opted me into a committee tasked to get the Congress in Budapest organized at the Hilton Hotel.

Ever since, the arrangement to get back home after Board Certification was always on my agenda. At one stage, some doubted my initiative but I always knew I was coming back home where my service was better “needed”. I also reminded myself about the difficulties that awaited.

I arrived in Ghana early 2000 and had to take over the radiological department after one and a half years. This was because my only senior colleague, a professor proceeded on retirement from active service. This gave me the opportunity to become head of radiological services in Ghana being the only full time employee and head of the radiology department of the University of Ghana Medical School.

Equipment situation was not the best at that time. Meanwhile, a residency program had started and needed to continue, with postgraduate doctors having to go to Nigeria to write their West African College Examinations.

The first four have completed their training program. Three have joined me at the Medical School and the fourth at the Military Hospital, where the infrastructure is better. In fact, wards at the Military Hospital are comparable to some of the best in Europe.

As of now, I have 16 residents in various stages of their training towards the college examinations in Nigeria. However, with the introduction of the Ghana College of Physicians and Surgeons, it is likely things are going to be less cumbersome e.g. traveling difficulties to Nigeria.

Arrangements are also far advanced to get a multisliced equipment in the country to replace the old CT. During the year, we took delivery of two color flow ultrasound equipment from the JUREI Program of Jefferson University, USA, which in collaboration with the existing Fonty’s University Program in Ghana is helping to train doctors from the district hospitals to handle basic things in their own localities.

A 1.5 Tesla MRI equipment is being purchased to be installed by the middle of 2005. This together with the interest being shown by young doctors in the field of diagnostic imaging, is very likely to turn things around for the better.

Coming home has given me the opportunity to do comparative studies showing the high incidence of avascular necrosis in all ages in sickle cell patients and spondylolisthesis in adults with prominence in women in my country.

One area that I continue to collect data on is the finding seen in grown-ups with a comparatively narrowed ventricular system. Four years working in Hungary and almost four in Ghana, has shown it to be a finding associated with headaches and papilla edema.

In all the cases, other causes of headaches were excluded and the only thing that prevailed was the narrowed ventricular system. I hope to publish my findings next year after closing my research by December 31, 2004.

One thing I desire to see in our sub-region is the Halley project, as was operated in Eastern Europe to promote continued education for radiologists sponsored by Bracco.

With all the difficulties here, I must say I have been extremely lucky. Things have not been too bad though the best is yet to come.

I got married in March 2003 and had a baby girl in August 2004. I aim at promoting close ties with other colleagues through my Hungarian connection.

dr. Alex Akoto Yeboah
Greetings from friends

Ferenc Jólesz

There has been a 20 years long fruitful relationship between Hungarian radiologist community and me. In my Radiology Department at Harvard Medical School Brigham and Women’s Hospital several Hungarian radiologists had research Fellowship training. They have significantly contributed to several research projects and publications. Several long lasting, successful research collaborations have developed in magnetic resonance imaging, image guided therapy, cardiovascular research and neuroimaging. Since 1991, when the Department of Radiology at the Brigham and Women’s Hospital in Boston first entered into a formal research relationship with the Faculty of Animal Sciences at the University of Kaposvár; collaborative scientific ventures between Hungary and my department have flourished. I have tried to introduce new technology in imaging and image guided therapy by helping the establishment of MRI guided focused ultrasound facility at the Semmelweis Medical School and an open MR facility at the University of Kaposvár. The installation of a General Electric 1.5 T MR equipped with the focused ultrasound treatment system from InSightec and the 0.35 T open magnet at the Institute of Diagnostic Imaging and Radiation Oncology at the University of Kaposvár is the natural fulfillment of over a decade of productive scientific collaboration. Both have created a research environment that complements the work in Boston in our group. The Hungarian teams are now equipped with the essential tools to advance MRI research—specifically research in image-guided interventional procedures and related imaging techniques. In 2004, we renewed the well-established research partnership between at Harvard Medical School Brigham and Women’s Hospital and the University of Kaposvár overseen by dr. Ferenc A. Jólesz, director of MRI at BWH, and professor of radiology at Harvard Medical School and dr. Imre Repa, professor of radiology at Kaposvár University. This collaboration and continued partnership with Hungarian radiologists will ensure cutting edge research with state-of-the-art imaging devices and multidisciplinary radiological training of the highest caliber.

László Tabár

It is a great pleasure and inspiration for me to keep in constant contact with my radiologist colleagues and friends in Hungary. They have always been at the cutting edge, striving for providing better care for their patients, even if the circumstances have been difficult sometimes. I would like to congratulate them for the introduction of the nationwide, high quality mammography screening program which is going to produce results that will give the Hungarian radiology an international recognition.

Ferenc Jólesz, professor of radiology, Department of Radiology, Brigham and Women’s Hospital, Harvard Medical School, Boston, USA

László Tabár, professor of University School of Medicine, Uppsala, Sweden, Medical director, Department of Mammography, Falun Central Hospital, Falun, Sweden
For over more than a decade I have been impressed by the energies of the Hungarian radiologists relative to their organizational skills. More importantly, I’m impressed by their successful attempts to upgrade the knowledge of radiologists throughout their country since the breaking apart of the eastern communist block. From a personal point of view, I have been involved with a number of these radiologists in establishing an ultrasound education center in Hungary and have participated in a number of meetings with them; this includes teleconference sessions for their young radiologists to update them on the latest developments in ultrasound with connections established between the Jefferson Ultrasound Institute and a number of Hungarian radiologists. I have observed them to be a mature, sophisticated group of physicians. They have given numerous excellent presentations at the RSNA. As a new member of the European Union, their active participation in the European Congress of Radiologists in 2005 speaks to their continued success.

I was most pleased to learn of their plan to publish a special English edition of the Hungarian Radiology Journal. I wish to congratulate them on the many successes that I have witnessed over more than a decade, and look forward to continuing working with them to ensure the success of their organization and helping them to achieve their goals of improving the knowledge of imaging throughout their country in the years to come.

Barry B. Goldberg, professor of radiology, director, Division of Ultrasound Jefferson Ultrasound Institute, Philadelphia, USA
2004 World Medical and Health Games

A Hungarian radiologist won the gold medal in table tennis

Open to all members of the medical and health profession, the World Medical and Health Games are an occasion for all those working in the field of health-care, whatever their standard, to come together in a warm and fraternal atmosphere while practising their favourite sport(s).

Each year since 1978, close to 4000 people participate in this large sporting and professional event, where more than 40 countries are represented.

Dr. Zsuzsanna Kis, a consultant radiologist at the Heves County Teaching Hospital in Eger (North-East Hungary), is an excellent player of table tennis and won a gold medal in 2002 in the ladies singles.

She repeated this feat in Stirling (Scotland) in 2003, and in Garmischpartenkirchen (Germany). In addition to this, she won another gold medal in the mixed-doubles and a bronze in the ladies – double in Garmischpartenkirchen.

Congratulations, and we wish her another gold medal this year too.

ACKNOWLEDGEMENT

The editors would like to thank all their colleagues, working in different radiology departments around the country, for providing the photographs published in this special issue of Hungarian Radiology.
## Forthcoming Events

### Radiology Meetings in Hungary, 2005

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<td>Ultrasound Section Election</td>
<td>March 18. Budapest</td>
<td>dr. Harkányi Zoltán, Budapest <a href="mailto:harkanyi@heim.sote.hu">harkanyi@heim.sote.hu</a> Fax: 1-459-9150</td>
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<td>and Case Demonstration</td>
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<td>Pediatric Radiology Section Case</td>
<td>April 2. Budapest</td>
<td>dr. Bitvai Katalin és dr. Kis Éva, Budapest <a href="mailto:halmos@heimpalkorhaz.hu">halmos@heimpalkorhaz.hu</a> Fax: 1-459-9150</td>
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<td>Demonstration</td>
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<td>6th Lélek Imre Ultrasound Conference and</td>
<td>April 28–30. Hévíz</td>
<td>dr. Nagy Gyöngyi, Zalaegerszeg <a href="mailto:radiologia.rad@zmkorhaz.hu">radiologia.rad@zmkorhaz.hu</a> Fax: 92-501-567</td>
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<td>Postgraduate Course</td>
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<td>6th Hungarian Congress of Osteology</td>
<td>May 25–28. Balatonfüred</td>
<td>dr. Forgács Sándor, Budapest <a href="mailto:fors@matavnet.hu">fors@matavnet.hu</a> Fax: 1-220-9949</td>
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<td>14th Pediatric Radiology Symposium</td>
<td>September 8–10. Siófok</td>
<td>dr. Borbás Éva, Miskolc <a href="mailto:dr.lombaysr@axelero.hu">dr.lombaysr@axelero.hu</a></td>
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<td></td>
<td>(Balatonszéplak)</td>
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<td>Mistakes and Failures in Radiology</td>
<td>September 17. Szeged</td>
<td>prof. dr. Palkó András, Szeged <a href="mailto:palko@radio.szote.u-szeged.hu">palko@radio.szote.u-szeged.hu</a> Fax: 62-545-742</td>
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<td>20th Sopron Ultrasound Days</td>
<td>October 6–9. Sopron</td>
<td>dr. Baranyai Tibor, Sopron <a href="mailto:baranyait@sopkorh.elender.hu">baranyait@sopkorh.elender.hu</a> Fax: 99-312-693</td>
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<tr>
<td>FIRAFÓ Young Radiologists’ Forum</td>
<td>October 20–22. Hévíz –</td>
<td>dr. Somogyi Rita, Zalaegerszeg <a href="mailto:radiologia.rad@zmkorhaz.hu">radiologia.rad@zmkorhaz.hu</a> Fax: 92-501-567</td>
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<td>Alsópáhok</td>
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Body of the paper should include introduction, objectives, materials and methods, results, discussion and conclusion.


Should be no longer than maximum 18 A/4 pages or 4500 words, without figures.

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