European Nuclear Medicine Congress Examines Clinical Demands and Efficacy

New European Association Rises to Challenges Facing Nuclear Medicine

Leaders of the European nuclear medicine community officially decided to "speak with one voice" as they founded the European Association of Nuclear Medicine (EANM) on September 4, 1986.

Scientists and physicians from 36 countries assembled that week in the medieval town of Goslar, Federal Republic of Germany (FRG), where German emperors resided during the 11th–13th centuries, for the European Nuclear Medicine Congress 1986.

Approximately 500 scientific presentations (see page 1653) were discussed among 1,500 attendees at the congress—the 24th annual meeting of the Society of Nuclear Medicine—Europe (SNME), and the 9th annual meeting of the European Nuclear Medicine Society (ENMS)—hosted by the German Society of Nuclear Medicine. The two European societies plan to dissolve next year as the EANM takes over responsibility for advancing the field of nuclear medicine.

To place the growing sophistication of nuclear medicine technology in perspective, Prof. Dr. Dr. e.h.K. Magnus of Munich was invited to address attendees at the opening ceremony of the European Nuclear Medicine Congress on the subject of "Technology in Medicine, a Challenge for Physicians." According to Prof. Magnus, "physicists and engineers have always been criticized for their excessive use of high technology, and now physicians sit in the same boat." Instead of allowing the "doctor-patient relationship to be taken over by equipment," the medical community could ultimately use high technology to integrate the medical specialties into a reunified health care delivery system, he said.

Orientation to Clinical Demands

"There is no doubt that the development of nuclear medicine reached a plateau at the beginning of the 1980s," said Prof. Dr. med. Dieter Emrich, of the University of Göttingen, FRG, and president of the SNME and of the congress.

"There are several reasons for this state of affairs, namely the progression of other imaging techniques as well as limitations in radiopharmaceuticals, but also some disappointment in that some nuclear medicine procedures could not fulfill earlier expectations," explained Prof. Emrich.

This plateau encouraged the profession to concentrate more on the "unique possibilities of nuclear medicine to assess function and its disturbance noninvasively in the living organism," said Prof. Emrich.

In addition to advances in methodology and improved efficacy, however, the nuclear medicine profession must orientate itself to the clinical demands of the primary care specialties. Even when a certain procedure is found to be very efficacious, physicians must also consider the overall picture of health care delivery, which includes the procedure's availability and how many patients actually need it, explained Prof. Emrich.

Bertil Nosslin, MD, PhD, of the General Hospital in Malmö, Sweden, and president of the ENMS, said that the European community will work toward more recognition of nuclear medicine as a full specialty. "Of course, this goal should not be an end in itself.

"The purpose of this goal is to ensure that nuclear medicine applications are made available to clinicians, and that they are continuously being informed about how the nuclear medicine department can contribute in the evaluation and treatment of patients," said Prof. Nosslin.

Surrounding the exchange of nuclear medicine research results, the overall theme of the congress addressed the broader issues of clinical demands and efficacy. Prominent clinicians in neurology and oncology lectured in plenary sessions on the services required of the nuclear medicine department by their specialties. (The congress organizing committee had also scheduled a session on cardiology, but the speaker was unexpectedly unable to attend.)

The final plenary session featured a lecture on "Efficacy of Nuclear Medicine," given by Eugene L. Saenger, MD, director of the E.L. Saenger Radioisotope Laboratory at the University Hospital in Cincinnati, OH.

"In the United States, there has been a revived interest in efficacy over the last 10 years, largely for reasons of economy and public health," said Dr. Saenger, expressing some concern that the emphasis now is shifting too much toward marketing.

Dr. Saenger described a prospective study of over 2,000 patients that quantitatively determined the efficacy of lung scanning (*1–2*). The results directly contradicted a previous study's conclusion that lung scans overdiagnose pulmonary embolism and increase the use of anticoagulant therapy (*3–4*).

Many retrospective studies are done that compare the interpretation of a nuclear medicine test to an angiogram. "These studies have been of great value in elucidating the criteria for improving interpretation of nuclear medicine scans, but they don't quite answer the question of a 'gold standard,' " said Dr. Saenger.

Proper design in accord with well-defined epidemiologic requirements is also of great importance, said Dr. Saenger. In general, case-control studies with small numbers of patients do not answer the question of efficacy as well as prospective studies of large groups, he added.

Also during the final plenary session, Prof. Dr. med. Dietrich P. Pretschner, of the Nuclear Medicine Institute in Hannover, FRG, presented an overview of nuclear medicine in Europe in 1986. There has been significant growth since 1979, when Dr. Pretschner published his last overview (*5*).

Seven years ago, there were 1,400 gamma cameras and five positron emission tomography (PET) units in Europe; today there are 3,500 gamma cameras and 14 PET units.

"At The Society of Nuclear Medicine's 33rd Annual Meeting this year in Washington, Dr. Henry N. Wagner, Jr., summarized the scientific presentations by saying, 'PET is it, but SPECT [single-photon emission computed tomography] is also it.' This statement applies to this meeting in Goslar as well," said Dr. Pretschner.

Hevesy Medals

Two medals were awarded at the congress: the Hevesy Medal to Prof. Dr. med. Dr. h.c. Cuno G. Winkler, of the University of Bonn, FRG; and the Hevesy Lecture Medal to Prof. Dr. med. William E. Adam, of Ulm University on the Danube, FRG.

In his lecture on "Functional Imaging in Nuclear Medicine—Its Story and Future Aspects," Prof. Adam categorized these procedures for imaging: (1) physical motion of an organ, such as heart beat; (2) excretory functions, as in the kidney or liver; (3) one-compartment enzymatic reactions; and (4) two-compartment enzymatic reactions.

While the first two categories face competition from other modalities, "the third and fourth areas will remain the domain of nuclear medicine," said Prof. Adam.

"Although impressive results have been obtained with nuclear magnetic resonance spectroscopy (NMRS), so far this procedure can only assess function in organs globally or for large regions, whereas radionuclide imaging can assess smaller regions of interest with the pixel device presentation," said Prof. Adam, who began his career at the University of Heidelberg under the late Prof. Dr. med. Kurt-E. Scheer, the first person in Europe to attain a full professorship in nuclear medicine.

Unification in Europe

Many congress participants were congratulated on the achievement of creating one European umbrella organization for nuclear medicine, with members from diverse cultural and political backgrounds agreeing on the statutes after three years of negotiation (see *Newsline*, Nov. 1985, p. 1229).

It had become apparent that the existence of two European societies was not efficient in utilizing available resources and, before the SNME and ENMS began holding joint meetings in 1984, the science was divided between two annual meetings.

For the first time, the European

(continued on page 1664)

At the edge of the Harz Mountains, the 1,000-year-old West German town of Goslar was once the most important ruling seat of the Holy Roman Empire. The town hall (above), built in the 15th century, faces the marketplace where medieval festivals were held.

(Courtesy of Kur-und Fremdenverkehrsgesellschaft Goslar-Hahnenklee mbH)

(continued from page 1663)
nuclear medicine community can use one organization to interact with other groups, such as the World Health Organization (WHO), the European Economic Community (EEC), the International Atomic Energy Agency (IAEA), the World Federation of Nuclear Medicine & Biology, and The Society of Nuclear Medicine, according to the proposed statutes for the EANM.

"One of the priorities is to find sources of research funding to explore more actively the potential applications of PET, SPECT, and radiolabeled monoclonal antibodies in the investigation of mental disorders, stroke, cancer, and other diseases," said Peter J. Ell, PhD, MD, MSc, MRCP, FRCR, of The Middlesex Hospital Medical School in London, United Kingdom.

The European organizations that distribute resources for health care are now making some decisions about how much money to invest in various areas of medical research, said Dr. Ell, who is also secretary of the ENMS. "If we approach these organizations as a unified community, we have a much better chance of obtaining funding and achieving something worthwhile," he added.

Software Proposal

A proposal has already been drafted, for example, to obtain funding from the EEC's Co-Operation in Scientific and Technical Research (COST) for the development and standardization of computer software for nuclear medicine. Erkki Vauramo, PhD, of the Helsinki University of Technology, Finland, is coordinating this project through an SNME-ENMS joint committee, which will become the EANM's Task Group on Software.

Some of the problems facing the more than 1,800 users in Europe include "lack of adequate documentation, unknown relationships between algorithms and clinical results, and the lack of quality assurance," Dr. Vauramo explained.

His group proposes to establish quality assurance standards; promote collaboration with industry; create organ-based software phantom systems with databases, standards of acquisition, and maintenance procedures; and create, evaluate, and standardize algorithms.

Nine other EANM task groups, formed from joint committees of the SNME and ENMS, will carry on work in the areas of: international affairs, education and training, radiopharmaceuticals, symposia, pediatrics, radionuclide therapy, monoclonal antibodies, NMR, and PET. The by-laws mandate that the membership of each task group represent several countries. The structure of the task groups will also be used for multicentered clinical trials, and will facilitate agreement on protocols, noted Prof. Nosslin.

"We need to promote the training of young people, and create an environment in which these people have career structures," said Dr. Ell. "At present, there is no career structure for radiopharmacists or radiopharmacologists, and in many countries there is no career structure for nuclear medicine physicians," he explained.

[The term "radiopharmaceutical science," used in North America, encompasses the European definitions of "radiopharmacy," which involves synthesis and labeling techniques, and "radiopharmacology," which involves studies of biodistribution and pharmacokinetics.]

Prof. Dr. med. Georg Riccabona, of the Universitätsklinik für Nuclearmedizin in Innsbruck, Austria, is working to address these problems through the Task Group on Education and Training. "Medical student training is very inhomogenous," said Prof. Riccabona, "and there seems to be a close correlation between the inclusion of nuclear medicine in regular curricula of medical schools and the development of nuclear medicine as a specialty." (*6*)

The Task Group on Radiopharmaceuticals evolved from a joint committee that holds symposia and a yearly course on radiopharmacology for physicians, and that created an adverse reactions reporting service four years ago. Peter H. Cox, PhD, of the Rotterdam Radiotherapeutic Institute, The Netherlands, heads the task group.

"Within the next year," said Dr. Cox, "we're going to make a concerted effort in publicizing the adverse reactions reporting scheme to increase participation." Knud Kristensen, director of the Isotope-Pharmacy at the National Health Service of Denmark, runs the adverse reactions reporting service.

Growth of Radionuclide Therapy

Since many diagnostic nuclear medicine tests face competition from other modalities, "I believe our future is in the culmination of diagnostics and treatment," said Prof. Dr. med. Helmuth Rösler, of the University of Bern, Switzerland.

The Task Group on the Use of Radionuclides for Therapy is searching for new treatments that take advantage of metabolic pathways. Prof. Rosler said that the group is also pursuing embolizing treatments of tumors with radionuclides—such as erbium-169, rhenium-186, and yttrium-90—administered by catheters.

"There is also great interest in using radium-224 for treatment of Bekhterev's disease, although there are some emotional barriers because, in the 1950s, some physicians used high doses of radium-224 to treat children with benign bone disease, and more than 50% of them died within eight years of higher-grade malignant tumors," he explained.

This congress finalized the adoption of English as the official lan-

(continued on page 1665)

(continued from page 1664)
guage, explained Prof. Emrich, by his decision not to provide simultaneous translation into German, French, or Spanish, as in past congresses.

Official Language—English

"This required a great amount of compromise and cooperation in an effort to become fully unified," said Dr. Vauramo. Meetings of the SNME in the past were sometimes conducted in German.

An early advocate of unification, Dr. Vauramo was president of the Finnish Society of Nuclear Medicine in 1984, and invited the ENMS and SNME that year to hold their congresses in Helsinki.

Call for a New Generation

Dr. Vauramo said that he hopes to see "young and eager scientists take over responsibility for the new association." The European nuclear medicine community is on the verge of a "generational shift" in leadership, which would invigorate the new organization, especially if younger people are nominated for office, he explained.

Nevertheless, other leaders expressed a more cautious attitude, pointing out that the negotiations have been complicated and time-consuming, and the new association needs leaders who understand the recent history from experience.

They must understand, for example, the practical aspects of working with Eastern-Bloc countries. "Although our money is not convertible for paying membership and registration fees, a balance has been worked out by paying these fees to local banks and using the money later for training courses and congresses [Czechoslovakia in 1969, Hungary in 1987], open to all European members, held in socialist countries," explained Prof. Dr. Harald Deckart, of the Städt Klinikum in East Berlin, German Democratic Republic, and vice president of the ENMS.

For the past three years, both societies have directed their organizational energies toward the merger, said Dr. Vauramo. "It's time to stop discussing our own politics and steer our efforts toward the advancement of nuclear medicine," he added.

Jan Van der Schoot, MD, the next president of the ENMS, said that he would like to see more individuals join and participate in the new association. "Many people don't yet understand that there's more to nuclear medicine than their individual jobs, and they do not realize how much work it takes to organize congresses and publish journals," said Prof. Van der Schoot, of the Academic Medical Center in Amsterdam.

The governing body of the EANM will incorporate the organizational systems of both societies: the Members' Assembly, adopted from the SNME, will consist of all members; the Delegates' Assembly, adopted from the ENMS, will consist of two members from each country. Members are invited from Western and Eastern Europe, the Soviet Union, the Middle East, and the Mediterranean region. Written nominations for officers of the EANM may be submitted now, and elections will take place at the European Nuclear Medicine Congress 1987 in Budapest, under the presidency of Prof. Dr. L. Csernay, of the University Medical School of Szeged, Hungary.

[For more information, contact: Prof. Dr. H.A.E. Schmidt, Evang. Krankenhaus Bethesda, Nukl. med. Klinik u. Poliklinik, Heerstrasse 219, 4100-Duisburg, FRG; or Dr. P.J. Ell, Institute of Nuclear Medicine, The Middlesex Hospital, Medical School, Mortimer St., London W1N 8AA.]

Linda E. Ketchum

TRANSLATION SERVICE

"I think that scientific communications without a language barrier is possible," said Günter Knauss, a representative of Amersham-Buchler in Frankfurt, FRG, for over 20 years until his retirement last month. Mr. Knauss has also edited and translated the abstracts for the program of the annual meetings of the Society of Nuclear Medicine—Europe, for 20 years, and he will continue this type of work with his newly formed private business.

A translation service for nuclear medicine is needed, explained Mr. Knauss, because most medical translators are not familiar with nuclear medicine terminology. "Authors in nuclear medicine do so much work correcting the translation that they are practically doing the translation themselves," he added. Scientific papers often do not include references from journals outside the authors' language—one indication that language barriers inhibit the exchange of scientific findings, noted Mr. Knauss. His new service will provide: abstract booklets and proceedings; and translation (English/German, German/English, French/German).

[For more information, contact: Günter Knauss, Eichenweg 1A, D-6072 Dreieich, FRG, tel. 06103/81741.]

References

1. Saenger EL, Buncher CR, Specker BL, McDevitt RA: Determination of clinical efficacy: Nuclear medicine as applied to lung scanning. *J Nucl Med* 26:793-806, 1985
2. Gift DA, Schonbein WR, Saenger EL, Potchen EJ: Application of an information-theoretic method for efficacy assessment. *J Nucl Med* 26:807-811, 1985
3. Robin ED: Overdiagnosis and overtreatment of pulmonary embolism: The emperor may have no clothes. *Ann Intern Med* 87:775-781, 1977
4. Patton DD: The efficacy of lung scans: The emperor had clothes all along. *J Nucl Med* 26:812-814, 1985
5. Pretschner DP: Nuclear medicine in Europe. *Eur J Nucl Med* 5:175-184, 1979
6. Riccabona G: Training of medical students in Europe. *Nucl Med Comm* 7:551-554, 1986