NEMA Releases Intraoperative Gamma Probe Standard

The National Electrical Manufacturers Association (NEMA) announced on March 1 the release of a standard that provides uniform criteria for conducting and reporting performance measures and quality control tests on nonimaging intraoperative gamma probes for surgical applications. NU 3-2004, *Performance Measurements and Quality Control Guidelines for Non-Imaging Intraoperative Gamma Probes*, is the first standard to address instrumentation in the rapidly emerging clinical practice of sentinel lymph node detection in diagnosis and treatment planning in cancer.

"This standard will make it possible to compare devices from different manufacturers against the common criteria to ensure that devices operate properly, and it will allow users to be confident in the devices they select," said Carl Bosch, chair of the NEMA Intraoperative Gamma Probe Task Force, which developed the standard.

The advantages of sentinel node identification and biopsy are currently being investigated in breast cancer, melanoma, urologic tumors and a range of other malignancies. Other clinical applications of gamma probes, such as localization of parathyroid tumors around the thyroid gland, are also expected to benefit from the standard's guidance about performance and routine quality assurance.

Information about purchase of NU 3-2004 is available at www.nema.org/r/std/nu3/.

National Electrical Manufacturers Association

NIBIB and CDRH Establish Joint Laboratory

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institutes of Health and the Center for Devices and Radiological Health (CDRH) at the FDA announced on April 1 the signing of an interagency agreement establishing a joint Laboratory for the Assessment of Medical Imaging Systems (LAMIS). The purpose of this effort is to assess and optimize high-resolution, high-dimensional medical imaging systems.

According to a joint press release, the goals of LAMIS are to develop evaluation methodology based on advanced statistical tools, determine fundamental limitations imposed on imaging systems, characterize and optimize medical imaging systems and components, build consensus, provide advanced image evaluation methods, and develop an environment conducive to rapid deployment of improved imaging systems and components to the patient community. In addition, optimal hardware designs and approaches for image reconstruction and extracting features will be pursued.

"The joint agreement with CDRH is an exciting opportunity for the NIBIB and will provide us with another avenue for exploring innovative and high-quality technologies and interdisciplinary research that will lead to improved healthcare. The CDRH medical imaging program is stellar, and we are proud to collaborate with an organization of this caliber," said NIBIB Director Roderic I. Pettigrew, PhD, MD. "CDRH welcomes this opportunity to collaborate with NIBIB," said CDRH Director David W. Feigal, MD, MPH. "Not only will this new agreement strengthen the imaging programs of both organizations, but it will also benefit the public by leading to the earlier availability of safe, effective medical imaging technologies."

To carry out the mission of the new laboratory, a multidisciplinary team of clinicians, scientists, and mathematicians/statisticians will be assembled. The team will work with visiting scientists and trainees who may range from graduate and medical students to senior researchers and clinicians. Visitors to the laboratory will apply assessment methods developed by the group to their own problems, and carry with them the principles and tools for longer-term use when they leave.

Codirectors of the program are Peter Kirchner, MD, acting director of the Intramural Science Program at NIBIB, and David Brown, PhD, director of the Division of Electronics and Computer Science, Office of Science and Technology at CDRH.

National Institute of Biomedical Imaging and Bioengineering

Center for Devices and Radiological Health

March NRC ACMUI Meeting

The Nuclear Regulatory Commission (NRC) held a meeting of the Advisory Committee on the Medical Uses of Isotopes (ACMUI) on March 1 and 2 at its Rockville, MD, headquarters.

A closed session on the first morning focused on ethical and security-related issues. In addition to a briefing for NRC Commissioners, the open segments of the meeting included discussions on proposed changes to abnormal occurrence criteria and defining medical events involving prostate seed implants. Transcripts of the meeting and written comments are available at www.nrc.gov/reading-rm/doc-collections/acmui/tr.

Nuclear Regulatory Commission

NRC Proposes New Fees

The Nuclear Regulatory Commission announced on February 3 its proposed amendments to regulations for the licensing, inspection, and annual fees it charges applicants and licensees for fiscal year (FY) 2004. The agency is required to collect nearly all of its annual appropriated budget from licensing and inspection services and from annual fees paid by licensees. The proposed annual fees were determined under the "re-baselining" method, with some licensees (including transporters) seeing higher

fees, and others, including 2 of 3 nuclear medicine–related licensee categories, seeing lower fees. Proposed fees include: radiographers, $12,000 (down from $12,200 in the second half of 2003); broad scope medical, $25,100 (up from $24,700); and distribution of radiopharmaceuticals, $4,500 (down from $4,700).

Nuclear Regulatory Commission

Government Agencies Accept Comments on Proposed Regulations Online

Private citizens, companies, and others who want to respond to proposed federal regulations, including those affecting the Nuclear Regulatory Commission and the Centers for Medicare & Medicaid (CMS), may now submit their comments electronically via a new Web site, www.Regulations.gov.

The Regulations.gov website was designed to serve as the central online rulemaking portal of the United States government. Regulations.gov enables users to search, view, and comment on proposed regulations from approximately 160 federal departments and agencies. The site allows visitors to search by keyword, department, or agency to find proposed regulations, each with a link to a form for submitting comments directly to the appropriate department or agency.

In addition to comments on proposed or final regulations, the new system, rolled out on January 30, will be open for comment on other documents, including policy notices soliciting public input and notices asking for other information, such as nominations for advisory committees. Federal agencies will continue to consider written comments delivered either by hand or through the mail by the close of each comment period. Individuals filing electronic comments will receive automatic confirmation of timely receipt.

Policies regarding publication of submitted comments can vary from agency to agency. For example, it is the policy of CMS is to post all electronic comments (including personally identifiable and confidential information within the comment) on their Web site for the public to review after the comment period closes. Other agencies may have different policies regarding the publication of comments.

NIBIB Focuses on Optical Technologies, Biomedical Industry

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) and the Department of Energy (DOE) Office of Biological and Environmental Research (OBER) partnered to sponsor a "Joint NIBIB/DOE Workshop on Biomedical Imaging: Optical and X-Ray Technologies" on February 10 and 11 at the Bethesda (MD) Marriott Hotel. Two days of information exchange that included presentations, plenary discussions, and poster displays were aimed at communicating and identifying potential synergies and collaborations based on (l) biomedical research needs that could be addressed using optical technologies at DOE laboratories, (2) related DOE national laboratory capabilities and programs for NIH intramural and extramural staff, and (3) funding opportunities for future research. About 100 attendees participated in the meeting, including DOE national laboratory investigators, NIH intramural investigators, NIH extramural program directors, and representatives from other government agencies. Peter Kirchner, MD, of NIBIB served as chair. A summary of the meeting is available at www.nibib.nih.gov.

NIBIB also announced in February the online availability of the summary report issued for the Workshop on Biomedical Industry Research and Training Opportunities, which was conducted on December 16 and 17, in Bethesda. A total of 45 people attended this meeting, including 23 representatives from a broad range of biomedical industries with total sales of more than $100 million per year. Industry participants were asked to address 2 questions: (1) what is the major problem that needs to be solved or research advance needed that will provide a significant improvement in health care from your industry, and (2) how can NIBIB and industry collaborate to facilitate translation of research results to patient applications and anticipated personnel needs? The final report presents the proceedings, including problems and research needs identified and recommendations for NIBIB and industry activities. The report can be accessed at www.nibib.nih.gov/events/Industry/NIBIB_IndustryWorkshop_FinalReport.pdf.

The National Institute of Biomedical Imaging and Bioengineering

Nuclear Medicine Facilities Struggle in Iraq

During 2003, Iraq's 240 public hospitals and 95% of its private clinics reopened to patients, but scattered reports coming from workers indicate that shortages remain in physicians, nursing and auxiliary staff, pharmaceuticals, equipment, and even furniture such as beds and chairs. Nuclear medicine and radiation therapy are among the hardest hit specialties, with supplies of radioisotopes and radiopharmaceuticals erratic when available at all. "They are talking but we've got nothing since the arrival of the Americans," Baghdad radiologist Shaemaa al-Hiali told Reuters news service on February 4. "Our hospitals are old with old machines and the number of patients are increasing. We are complaining about the deficiencies. We are writing to the minister of health and we are waiting." The problem is compounded by the enormous backlog of cancer patients waiting to be seen in the country. New cancer cases registered at Baghdad's Hospital of Radiation and Nuclear Medicine rose from around 6,000 per year in 1990 to nearly 10,000 per year in 2002. It is widely

believed that this increase was caused in part by carcinogens released during the 2 Gulf Wars, with a dearth of treatment options exacerbated by 13 years of United Nations sanctions. Delivery and transport of radioactive materials remain problematic in the region. Newsline would welcome reports from nuclear medicine specialists in Iraq on efforts to rebuild their diagnostic and therapeutic centers. Correspondence can be addressed to the Newsline editor at: NewslineEditor@snm.org.

PET Isotope Production System with Linac

Hitachi, Ltd., and its subsiduary AccSys Technology, Inc., announced on January 22 the delivery of the first dedicated radioisotope production system for PET incorporating a linear accelerator (linac). Hitachi General Hospital (Ibaraki, Japan) will begin using ^{18}F-FDG produced with the system in PET imaging in the spring of 2004. It is anticipated that the system will reach the market in 2005. AccSys introduced its Positron Tracer Production System line in 1998 as an alternative to older cyclotron accelerator technology. The new linac-supported system will be lighter, more easily installed, and less expensive than hospital-based cyclotrons, according to Hitachi sources.

Hitachi, Ltd.

Gambhir and Townsend Receive AMI Distinguished Scientist Awards

SNM members David Townsend, PhD, and Sanjiv Gambhir, MD, PhD, were honored during the annual meeting of the Academy of Molecular Imaging (AMI), March 27–30, in Orlando, FL. AMI President Michael Phelps, PhD, presented Townsend with the Distinguished Clinical Scientist of the Year award and Gambhir with the Distinguished Basic Scientist of the Year award. These awards are given to those who have made major contributions to the development and enhancement of PET and/or molecular imaging. Each award carries a $20,000 cash prize.

Gambhir is director of the Molecular Imaging Program at Stanford University and chief of nuclear medicine and a professor in the department of radiology at the Stanford School of Medicine. Among his many accomplishments is the development of novel reporter genes and probes used in cell trafficking models, gene therapy models, and in transgenic models for studying cancer biology.

Townsend is a professor in the department of medicine and radiology and director of cancer imaging and tracer development at the University of Tennessee Cancer Institute (Knoxville). Widely known for his work in developing PET/CT technology, he was cited for the 2002 Medical Invention of the Year by *TIME* magazine.

Academy of Molecular Imaging

Newsbriefs from the Literature

Each month the editor of Newsline selects articles on therapeutic, diagnostic, research, and practice issues in nuclear medicine from a range of international publications. Most selections come from outside the standard canon of nuclear medicine and radiology publications. These briefs are offered as a monthly window on the broad arena of medical and scientific endeavor in which nuclear medicine now plays an essential role.

Therapy

^{125}I and Antigene Radionuclide Therapy

Antigene radiotherapy, delivering highly targeted doses of radiation to damage selected genes via a sequence-specific DNA-binding molecule, is a rapidly expanding area of nuclear medicine. As in almost every pioneering medical molecular endeavor, this effort is involving professionals from across the spectrum of scientific research. In a survey article published in the December issue of *Cancer Biotherapy and Radiopharmeuticals* (2003;18:861–877), Bodei et al. from the European Institute of Oncology (Milan, Italy) reported on ongoing research into the use of ^{125}I and other Auger-electron-emitting radionuclides as attractive alternatives to β-particle emitters in the treatment of cancer. The authors surveyed published results in a range of animal tumor models where the thymidine analog 5-radioiodo-2'-deoxyuridine has been shown to be therapeutically beneficial. A limited number of studies in humans have shown promise for locoregional administration of Auger-electron-emitting radionuclides and metabolic modulation of uptake by tumor cells, where the emitters act directly on nuclear DNA. Investigators continue to look for new molecules that can carry radionuclides to provide higher Auger-electron yields.

One such investigation, described by Panyutin et al. from the National Institutes of Health (Bethesda, MD) in December in the *Annals of the New York Academy of Science* (2003; 1002:134–140), focused on research into cellular mechanisms facilitating targeted radiodamage with ^{125}I-labeled triplex-forming oligonucleotides (TFOs). The authors used a TFO labeled with ^{125}I to attempt to produce DNA strand breaks at specific binding sites. They found that double-strand breaks in the target sequence were detected in purified nuclei and digitonin-permeabilized cells but not in intact cells when TFOs were delivered with liposomes. They hypothesized that as yet unidentified cytoplasmic factors succeed in binding such TFOs and delivering them into the nucleus but render them unable to release them inside the nucleus, with the result that the TFOs do not bind with their genomic targets. Subsequent investigations conjugating a nuclear localization sequence peptide with the TFOs suggested a range of new insights

into the intracellular transport of oligonucleotides.

Cancer Biotherapy and Radiopharmeuticals

Annals of the New York Academy of Science

^{125}I-Labeled mAb Treatment of High-Grade Brain Glioma

The results of a decade-long phase I/II clinical trial on the efficacy of ^{125}I-labeled monoclonal antibody (mAb) 425 treatment in controlling high-grade brain gliomas were published in the March issue of the *International Journal of Radiation Oncology, Biology, Physics* (2004; 58:972–975) by Quang and Brady from the Hahnemann University Hospital (Philadelphia, PA). The trial included 180 patients who were diagnosed with glioblastoma multiforme and astrocytoma with anaplastic foci and received a cumulative dose of 140 mCi ^{125}I-mAb 425 as adjuvant treatment after surgery and external beam radiation therapy. Increased uptake was demonstrated in brain tumor cells. All patients were followed for at least 5 years, and the authors concluded that "this adjuvant therapy demonstrates a significant increase in median survival and should be considered in the management of high-grade brain gliomas."

International Journal of Radiation Oncology, Biology, Physics

Diagnosis

Anti-D-Dimer SPECT of Pulmonary Emboli and Venous Thrombi

In an article e-published ahead of print on February 12 in the *American Journal of Respiratory and Critical Care Medicine*, Morris et al. from the University of California San Diego reported on experiments using SPECT and intravenous ^{99m}Tc-labeled deimmunized antifibrin Fab[[rad]] fragments to diagnose thromboemboli. The study included 5 dogs with induced pulmonary emboli (PEs) and lower extremity deep-vein thrombi (DVTs). Thoracic and lower extremity SPECT imaging was performed at 2-hour intervals after injection of ~260 MBq ^{99m}Tc-labeled deimmunized antifibrin Fab[[rad]]. At 4 hours after infusion, all PEs and DVTs with masses $\geq$ 0.4 g were clearly visualized on SPECT. The authors noted that, "the technique reliably identified even peripheral thromboemboli of relatively small size, which are difficult to diagnose with currently available imaging techniques, and may enable imaging of PEs, DVTs, or both in the same patient."

American Journal of Respiratory and Critical Care Medicine

Better Diagnosis = Higher Reported Thyroid Cancer Rates?

A major evolution in clinical practices from 1980 to 2000 led to a significant increase in the reported incidence of thyroid cancer in France. This finding was detailed in the February issue of the *European Journal of Endocrinology* (2004;150: 133–139) by Leenhardt and a consortium of researchers from 6 French endocrinology and nuclear medicine centers. The study focused on a representative selection of 471 patients referred during this time period for evaluation of nodular thyroid disease or thyroid dysfunction. Population characteristics, diagnostic procedures, and changing trends in management were included in the analysis. The authors found a significant increase in the use of ultrasound (from 3% to 84.8%) and cytologic analysis (from 4.5% to 23%) over the time period and a decrease (from 89.4% to 49.6%) in radionuclide scans. The proportion of patients undergoing surgery remained constant at 24.8%. However, the percentage of patients found to have cancer at surgery increased from 12.5% to 37%. The benefits of cytologic analyses on identification of patients for surgery was cited as the most important reason for this change. The authors cautioned that a number of factors, including better access to early diagnosis and more sensitive preliminary testing should be considered when drawing conclusions from these results. They noted that "such changes in medical, as well as in surgical and pathological, practices must be taken into account in incidence measurement."

European Journal of Endocrinology

Ginkgo Biloba Effects on ^{99m}Tc Labeling

Researchers from the Universidade Federal Fluminense (Rio de Janeiro, Brazil) reported in the February issue of the *Brazilian Journal of Medical and Biological Research* (2004;37:267–271) on a study assessing the effects of different concentrations of ginkgo biloba extract on the labeling of blood constituents with ^{99m}Tc-pertechnetate and on the mobility of a plasmid DNA treated with $SnCl_2$ (the reducing agent most often used in ^{99m}Tc labeling). Moreno et al. noted that although ginkgo biloba is widely used as a dietary supplement and over-the-counter remedy, the exact nature of its action is not fully known. $SnCl_2$ and ^{99m}Tc were added to blood incubated with gingko biloba, and soluble and insoluble fractions of plasma and red blood cells were isolated. The plasmid DNA was incubated with gingko biloba and/or $SnCl_2$, then stained and assessed by fluorescence. The authors found that gingko biloba decreased the labeling of red blood cells and insoluble plasma. The supercoiled form of the DNA plasmid was modified by treatment with $SnCl_2$ alone but protected from this modification by the gingko biloba. The authors drew no conclusions about the possible effects that longtime or heavy gingko biloba use might have on nuclear medicine imaging procedures but did hypothesize that the effects associated with gingko biloba in the tests "may be due to its chelating action with the stannous ions and/or pertechnetate or

to the capability to generate reactive oxygen species that could oxidize the stannous ion."

Brazilian Journal of Medical and Biological Research

PET in the Assessment of Radiofrequency Ablation for Liver Metastases

Donckier et al. from the Universite Libre de Bruxelles (Belgium) reported in the December issue of the *Journal of Surgical Oncology* (2003; 84:215–223) on the effectiveness of ^{18}F-FDG PET as a tool for early recognition of incomplete tumor destruction after radiofrequency ablation (RFA) for liver metastases. The study included 17 patients who were treated by radiofrequency ablation for a total of 28 unresectable liver metastases. The patients underwent imaging with both CT and PET before surgery and at 1 week and 1 and 3 months afterward. Imaging results were compared and correlated with follow-up imaging and, in some cases, with pathologic results. Neither CT nor PET showed tumor residues in 24 of 28 metastases sites (in 13 patients) at 1 week or 1 month. None of these patients developed local recurrence at the RFA site during follow-up. In the remaining 4 patients, PET at both 1 week and 1 month showed peripheral hypermetabolic residue, but CT did not show residual tumor. In 3 of these patients, local persistence of viable tumor cells was proven by biopsy at a second surgery. In the fourth, follow-up CT showed subsequent development of a local recurrence. The authors concluded that ^{18}F-FDG PET "accurately monitors the local efficacy of RFA for treatment of liver metastases, as it early recognizes incomplete tumor ablation not detectable on CT."

Journal of Surgical Oncology

Compounded and Proprietary Sincalide Compared

In 2001, as a result of a manufacturing hiatus, sincalide became unavailable to the nuclear medicine market for evaluation of gallbladder ejection fraction during hepatobiliary scintigraphy. Many imaging centers turned to the use of pharmacy-compounded sincalide, with the assumption that its effects were equivalent to those of the proprietary product. Guarasci et al. from the University of Buffalo (New York) reported in the March issue of the *Annals of Pharmacotherapy* (2004;38:428–432) on 2 case studies comparing proprietary and pharmacy-compounded sincalide. Two patients who were referred for imaging for hepatobiliary dysfunction underwent scintigraphy first with the adjuvant use of compounded sincalide and 72 hours later with proprietary sincalide. Gallbladder ejection fractions in the 2 patients were 11% and 24% with the compounded product and 32% and 72% with the proprietary product. The authors concluded, however, that "significant differences in gallbladder ejection fraction between compounded sincalide and sincalide in our patients are likely due to the intrinsic variability in response to sincalide."

Annals of Pharmacotherapy

PET and MRI in Early Diagnosis of Creutzfeldt-Jakob Disease

Tsuji et al. from Kyoto University (Japan) reported in the January issue of the *Journal of Neuroimaging* (2004;14:63–66) on the potential of combined PET and diffusion-weighted MRI, along with visual evoked potential recording and cerebrospinal fluid analysis in the early diagnosis of Creutzfeld-Jakob disease (CJD). In this case study, the patient presented with visual disturbance and rapidly deteriorating global cognitive function. After imaging and additional testing, findings suggested a diagnosis of the Heidehain variant of CJD. PET revealed hypometabolism in the parieto-occipital cortices, where diffusion-weighted MRI showed marked hyperintensity. Cerebrospinal fluid was positive for the 14-3-3 protein, and pattern-reversal visual evoked potentials showed prolonged P100 latencies and increased N/5/P100 amplitudes. The ability to associate these assessment parameters with early diagnosis does little to alter the inevitable course for patients with CJD. It does, however, illuminate the course of clinical deterioration, avoid extensive testing for differential diagnoses, and allow for earlier initiation of supportive measures.

Journal of Neuroimaging

^{99m}Tc-ECD SPECT in Acute Stroke

Mahagne et al. from the Hôpital Pasteur (Nice, France) reported in the January issue of the *Journal of Neuroimaging* (2004;14:23–32) on a study designed to correlate tracer uptake in ^{99m}Tc-L,L-ethyl cysteinate dimer (ECD) SPECT in patients with acute stroke with the extent of irreversibly damaged tissue. The authors used an automatic, voxel-based approach for probabilistic mapping of irreversibly damaged tissues to validate the previously observed 40% ^{99m}Tc-ECD uptake threshold below which tissues is considered irreversibly damaged. The retrospective study included 10 patients who had experienced acute stroke. ^{99m}Tc-ECD SPECT images were coregistered with MRI data. Irreversibly damaged tissue, "at risk" tissue, and the percentage of voxels ultimately infarcted and noninfarcted on late brain MRI were recorded. They compared this data with assessments of subsequent neurologic recovery. The predictive capabilities of visual SPECT analysis were compared with this more complex mapping approach. The authors found that an average of 84% of the voxels defined as irreversibly damaged using the uptake cut-off of 40% evolved toward infarction, whereas an average of 89% of at-risk voxels escaped infarction. The authors concluded that these results support the validity of the ^{99m}Tc-ECD uptake threshold definition of irreversibly

damaged tissues, suggesting that "ECD SPECT can be useful for the early detection of potentially salvageable tissue and irreversible damage." They noted the special benefits of such abilities when fast decision making is necessary after stroke.

Journal of Neuroimaging

^{18}F-FDG PET and Restaging of Cervical Carcinoma

Lai et al. from the Chang Gung Memorial Hospital and Chang Gung University College of Medicine (Taoyuan, Taiwan) reported in the February 1 issue of *Cancer* (2004;100: 544–552) on a study designed to assess the diagnostic efficacy of ^{18}F-FDG PET in restaging cervical carcinoma at the time of first recurrence. The study included 40 patients with cervical carcinoma whose previous treatment had failed but who were considered candidates for curative salvage therapy. Patients were restaged after undergoing CT and/or MRI and dual-phase PET performed by adding 3-hour delayed images to 40-minute scans. Results were analyzed on the basis of 2 endpoints: percentage improvement in restaging as indicated by treatment modification with PET and 2-year overall survival in the study group compared with comparable previously treated patients who did not undergo restaging with PET. The authors found that treatment was modified in 22 patients (55%) as a result of PET findings. PET was significantly superior to CT and/or MRI in identifying metastatic lesions. Those women who proceeded to surgery on the basis of PET findings experienced a significantly better 2-year overall survival rate than did the comparable group of patients who underwent no PET imaging. The authors concluded that not only is dual-phase ^{18}F-FDG PET superior to CT and/or MRI in restaging recurrent cervical carcinoma, but that PET facilitates an optimal choice in management for physicians and patients.

Cancer

Prognostic Value of ^{99m}Tc MPI in Elderly Patients

In a study published in the February issue of the *International Journal of Cardiology* (2004;93:137–143), Lima et al. from the Universidade Federale de Rio de Janeiro (Brazil) reported on a study to assess the predictive value of ^{99m}Tc-sestamibi SPECT in diagnosis and risk stratification of coronary artery disease (CAD) in individuals 74 years of age or older. The study included 328 patients with suspected CAD who underwent either exercise- or dipyridamole-induced stress imaging with ^{99m}Tc-sestamibi SPECT. The mean follow-up was 34 ± 15 months. During the follow-up period, 24 cardiac deaths, 11 myocardial infarctions, and 21 revascularizations were reported. Not only were abnormal scans significantly associated with cardiac events, but multivariate analysis showed that an abnormal scan was the most important independent predictor of cardiac events. The authors concluded that "^{99m}Tc-sestamibi SPECT was demonstrated to be a powerful tool for the prognostic evaluation of elderly patients with suspected CAD."

International Journal of Cardiology

SPECT/CT Fusion Guides Robot in Parathyroidectomy

In a study e-published ahead of print on 2 February in the journal *Surgical Endoscopy*, a team of Austrian surgeons reported on the use of SPECT and CT to guide a robot-assisted thoracoscopic resection of a mediastinal parathyroid in the aortopulmonary window. Profanter et al. from University Hospital Innsbruck based their intervention planning on separate preoperative CT and ^{99m}Tc-sestamibi SPECT image coregistered to provide precise localization of the parathyroid. The images were superimposed on a reproducible model of the patient's head and neck. A DaVinci operating robot was then used to perform minimally invasive surgery. The patient did well in recovery. The authors concluded that, "Precise preoperative imaging enables the careful planning of robot-assisted surgery for ectopic parathyroids located at relatively inaccessible regions such as the anterior mediastinum."

Surgical Endoscopy

SLN Detection in Gynecologic Cancers

The accuracy of detection of sentinel lymph nodes (SLNs) in gynecologic cancers using ^{99m}Tc-labeled tracers and intraoperative gamma probes is currently being assessed in a number of centers, along with subsequent effects on patient management. In an article published in the February issue of *Gynecologic Oncology* (2004;92:669–674), Niikura et al. from the Tohoku University School of Medicine (Sendai, Japan) reported on a study of 27 patients with endometrial cancer scheduled for total abdominal hysterectomy, bilateral salpingo-oophorectomy, total pelvic lymphadenectomy, and paraaortic lymphadenectomy. ^{99m}Tc-labeled phytate was injected into the endometrium the day before surgery. Intraoperative gamma probes detected at least 1 SLN in 23 (82%) of the patients. The sensitivity and specificity for detecting lymph node metastases were both 100%. The authors concluded that the technique may prove especially useful in early-stage endometrial cancers.

Van Dam et al. from Sint Augustinus Hospital (Antwerp, Belgium) reported in the January issue of *Gynecologic Oncology* (2004;92:89–92) on SLN detection in 4 patients with primary and recurrent stage I or II vaginal carcinoma. ^{99m}Tc-labeled colloid was injected at 4 sites in the vaginal mucosa, and a hand-held gamma probe was used to detect the SLNs during laparascopy. One patient, in whom the sentinel nodes proved to be negative, was treated with a wide local excision of the tumor, pelvic and groin lymphadenectomy, and adjuvant radiotherapy. The sentinel node contained tumor metastases in the second patient, who un-

derwent combined chemo- and radiotherapy. In a third patient, no sentinel node was identified. The authors concluded that, "Laparoscopic detection of sentinel nodes using ^{99m}Tc-labeled colloid is feasible in patients with primary and recurrent vaginal cancer and may provide important information to direct further management."

Gynecologic Oncology

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of the likely dose. This, however, is beyond the scope of this case report.

All licensees should expect the NRC to perform dose calculations using state-of-the-art dosimetry methods that result in realistic and not overly conservative dose estimates. This is especially important because these dose estimates are used for risk assessment. The large discrepancies in methodology, criteria used, and estimated dose demonstrated in this case raise important issues. We therefore recommend that the NRC Commissioners consider a case-by-case review of staff dose calculations by an outside expert panel to gain valuable perspectives and appropriate calculation strategies to assure that these dose estimates are realistic and represent values that not only comply with regulatory requirements but also can be used for appropriate risk assessment.

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at Camp David that would result in an accord between Egypt and Israel. Attendees at our meeting were fascinated by glimpses of Senator Ted Kennedy, Israel's Prime Minister Menachem Begin, and other dignitaries passing through the hotel lobby.

As would be expected from a meeting in the nation's capital, the opening ceremony included a letter from President Jimmy Carter and talks by Nobel laureate Rosalyn Yalow and Donald Frederickson, director of the National Institutes of Health. On September 18, the Preservation Jazz band gave a special Kennedy Center concert for the attendees, followed by a rooftop reception. On September 20, the National Gallery of Art opened its doors for a private showing, with a performance by the National Gallery Orchestra.

The meeting was an overwhelming success and was greatly rewarding for attendees, individuals presenting scientific papers, and the dedicated organizers, which, in addition to those mentioned already, included: Anne Wagner and Arlene Reba, who chaired the Social Program Committee; Cecil Barrett, the Hilton employee who "made the trains run on time" throughout the meeting; and Beatrice Smith, who kept detailed minutes during the planning.

Is It Not Time Again?

An important question is whether it is time again for the United States to host the World Congress of the WFNMB. Six years before the date of each Congress, the WFNMB assembly meets to choose a host city. Should the SNM submit a proposal to the assembly for the meeting to be held in the United States in 2014? At that time, 36 years will have passed since the meeting in Washington in 1978. Some believe that the World Congresses of the WFNMB should be held only in developing countries. Others believe that, with respect to nuclear medicine, we are all developing countries and that the goals of the Second World Congress are as worthy today as they were in 1975.

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