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Launching an Image Study of Polycystic Kidney Disease
Small, water-filled balloons in a kidney-shaped mold of near-boiling agar mimic the cyst-riddled kidneys of patients participating in a multi-institutional study. For more information about Mallinckrodt Institute of Radiology’s role in this research, turn to page 12.
THE PEREZ SYMPOSIUM
Carlos Perez has made significant and lasting contributions to the field of radiation oncology. The symposium “Current Topics in Cancer Treatment” honors Dr. Perez for his clinical, academic, and research expertise.

WHEN BREAST CANCER BECOMES PART OF A WOMAN’S LIFE
An educational booklet and video produced by breast cancer specialists at Washington University Medical Center provides newly diagnosed breast cancer patients with a straightforward, supportive approach for addressing concerns about their disease.

LAUNCHING AN IMAGE STUDY OF POLYCYSTIC KIDNEY DISEASE
After nearly a year in planning and development, a multi-institutional study is evaluating the accuracy of magnetic resonance imaging in determining the progression of the most common genetic kidney disorder—autosomal-dominant polycystic kidney disease.

IMRT UPDATE
Armed with state-of-the-art imaging equipment and the best available computer planning system, radiation oncologists are using a novel radiation treatment called intensity modulated radiation therapy to effectively treat head and neck cancers while reducing significant side effects, including xerostomia (dry mouth).

ON THE COVER: Ty Bae, MD, PhD, draws upon his expertise in body imaging, as well as image analysis, quantification, and processing, as he leads a National Institutes of Health study that eventually may affect more than 600,000 people in the United States who have polycystic kidney disease. Photograph by Tim Parker.
Perry Grigsby, MD, MBA, professor of radiology, was selected as the 2000 Radiation Oncology Teacher of the Year, making him a three-time recipient of the award (including 1991 and 1995). The radiation oncology residents select the award recipient by nominating and voting for the MIR faculty member who makes a significant contribution to radiation oncology resident education during the academic year.

During the presentation of the award—traditionally given each year in December—Imran Zoberi, MD, radiation oncology chief resident 2000-2001, said “Doctor Grigsby’s teaching abilities are known nationally, which is evident by the number of out-of-state residents who come to the Radiation Oncology Center just to rotate through his gynecology service.”

Grigsby joined the MIR faculty in 1986 as an assistant professor of radiology, after completing four years of training in radiation oncology (chief resident 1985-1986) at Mallinckrodt Institute. He has served as chief of the Radiation Oncology Center’s gynecology service since 1987. As changes in the healthcare environment began to dramatically affect patient care, Grigsby joined the growing trend of physicians earning business degrees and received an MBA in 1990 from Olin School of Business at Washington University in St. Louis.

Grigsby is regularly listed among the nation’s medical experts in references such as The Best Doctors in America, Who’s Who in Medicine and Healthcare, and Guide to Top Doctors. He has authored and coauthored more than 180 scientific articles and book chapters and has served in editorial positions for several scientific journals, including The International Journal of Radiation Oncology, Biology, and Physics.

Grigsby has served since 1993 as chairman of the Radiation Therapy Oncology Group’s Economic Impact Committee, chaired the American Society of Therapeutic Radiation Oncology’s Long Range Planning Committee from 1988 to 1996, and was appointed in 2000 to the Gynecologic Task Force of the American Joint Committee on Cancer. He is a member of several medical organizations, including the American Society of Clinical Oncology and the American Brachytherapy Society, and is a fellow of the American College of Radiology.

Since the award’s inception in 1989, the following faculty have been selected as teacher of the year:

- 1989—Susan Shapiro, MD
- 1990—Carlos Perez, MD
- 1992—Jeff Michalski, MD
- 1993—Russell Gerber, MS
- 1994—Mary Graham, MD
- 1995—James Purdy, PhD
- 1996—Marie Taylor, MD
- 1997—David Gius, MD, PhD
- 1998—Jeffrey Bradley, MD
- 1999—Jeffrey Bradley, MD
Kotner elected ACR fellow

In recognition for his distinguished accomplishments in service and teaching, Lawrence Kotner, MD, associate professor of radiology, was elected a fellow of the American College of Radiology (ACR). The induction ceremony will be held in September during the ACR’s 78th Annual Meeting in San Francisco.

The ACR, comprised of more than 30,000 radiologists, radiation oncologists, and medical physicists, supports programs focusing on the practice of radiology and the delivery of comprehensive radiological health services. Fellowship is one of the ACR’s highest honors given to its members.

Kotner joined the MIR faculty in 1975 and has served as course master for the Senior Medical Student Radiology Elective since 1988. He was director of the Radiology Residency Program at Jewish Hospital from 1989 to 1994, when the program merged with Barnes Hospital’s training program. He now serves as associate director of Mallinckrodt Institute’s four-year diagnostic radiology training program, the largest of its kind in the United States.

In 1989 and in 1991, he received Washington University’s Sydney S. Pearl MD ’32 Award for Inspirational Teaching. In recognition of his leadership quality and important contributions to medical student and radiology resident education, Kotner was elected in 1998 as an alumni member of the Washington University Chapter of Alpha Omega Alpha Honorary Medical Society.

Perez receives national cancer award

Carlos Perez, MD, professor of radiology and director of the Radiation Oncology Center, received The National Children’s Cancer Society Legacy Award 2001 for his “significant and lasting contributions in the fight against cancer” and for his “exceptional and distinguished leadership in the field of radiology.” The award was presented in March at the Society’s International Humanitarian Award Dinner 2001.

Founded in 1987, The National Children’s Cancer Society is a not-for-profit organization that provides direct financial assistance to children with cancer and to their families. Headquartered in St. Louis, the Society was founded on the belief that no child with cancer should be denied access to quality medical care because of a lack of funds.

Perez’s career spans four decades, and during those years he has become one of the most highly regarded radiation oncologists in the world, particularly in the management of patients with gynecologic tumors and carcinoma of the prostate and of the breast. Perez tends not only to the physical needs of patients but also to their emotional and psychological needs. He has received numerous recognitions, including the American College of Radiology’s Gold Medal Award and the American Society for Therapeutic Radiology and Oncology’s Gold Medal.

Perez joined the MIR faculty in 1964 and was named director of the Radiation Oncology Center in 1976. Under his leadership, the Radiation Oncology Center is a premier radiation treatment center with a strong research core. In 1977 Perez established the Cancer Information Center (CIC) for patients and their families and friends, as well as for physicians. The CIC was the first resource facility of its kind worldwide and has served as a model for similar centers in the United States and abroad.

WUSM among top five in U.S.

Washington University School of Medicine (WUSM) was named one of the top five medical schools for research in the United States, according to the U. S. News & World Report 2001 annual rankings of best graduate schools. WUSM ranked fourth (tied with University of Pennsylvania), following Harvard, Johns Hopkins, and Duke.

Now in its fifteenth year, U. S. News & World Report rankings are based on varying criteria, including a school’s reputation, research activity, student selectivity, and academic surveys.

Matching Program results announced

As part of the Matching Program, 17 physicians are slated to join MIR’s Diagnostic Radiology Residency Program; one of the 17 will participate in the Research Residency Program. These promising young trainees represent excellent medical schools: Yale University, Johns Hopkins University, University of California at San Francisco, Saint Louis University, Medical College of Virginia, Texas Tech University, University of South Florida, Northwestern University, University of Wisconsin, Hahnemann University, University of Alabama, University of North Carolina, University of Arizona, and Washington University in St. Louis.
Mintun appointed to Center for Scientific Review

Mark Mintun, MD, professor of radiology and of psychiatry, was appointed to a three-year term as a member of the Integrative, Functional and Cognitive Neuroscience Study Section of the Center for Scientific Review, sponsored by the National Institutes of Health (NIH). Founded in 1887, the NIH is one of the world’s foremost medical research centers. It is comprised of 25 separate institutes and centers that focus on acquiring knowledge to help prevent, detect, diagnose, and treat disease and disability.

Center for Scientific Review members are selected on the basis of demonstrated competence and achievement in their scientific discipline, as evidenced by the quality of their research accomplishments and scientific publications. Study sections contribute to the national biomedical research effort by reviewing grant applications submitted to the NIH and then making recommendations to the appropriate NIH national advisory council or board.

After completing a research fellowship in neurology at Washington University and a nuclear medicine residency at Mallinckrodt Institute, Mintun joined the MIR faculty in 1985 as an assistant professor of radiology. In 1989 his research took him to the University of Michigan and then to the University of Pittsburgh. He returned to MIR in 1997 to continue his research using positron emission tomography to study the metabolic needs of the brain during the neural process and to investigate the biology of depression treatment.

Welch dedicates Imaging Center

In June of 1999, Yoshiharu Yonekura, MD, director of the High Energy Medical Research Center at Fukui Medical University, and Ronald Evens, MD, then director of the Institute, signed a five-year academic exchange and cooperation agreement (one copy in English, the other in Japanese) between the two institutions. Michael Welch, PhD, professor of radiology and codirector of the Division of Radiological Sciences, was instrumental in coordinating the exchange of researchers and scientific information, materials, and publications necessary for the joint research activities. Welch’s long-time collaboration with the Japanese university on radiopharmaceutical research includes the development of an imaging agent for hypoxia that was used in clinical studies at Mallinckrodt Institute. He recently travelled to Japan to participate in the dedication of the Biomedical Imaging Research Center at Fukui Medical University.

Welch (third from right) and other Fukui University officials cut the ceremonial ribbon at the opening of the new imaging center.
THE PEREZ SYMPOSIUM
CURRENT TOPICS IN CANCER TREATMENT

In honor of Carlos Perez, M.D.,
professor of radiology and
director of the Radiation Oncology Center.

Friday • June 1, 2001
7:30 a.m. to 5:30 p.m.

Sponsored by
Washington University School of Medicine in St. Louis
Mallinckrodt Institute of Radiology
The Radiation Oncology Center

Held at
The Eric P. Newman Education Center
320 South Euclid Avenue (on the medical center campus)

Dr. Perez is being honored for his many contributions to the scientific knowledge of radiation oncology in the education of radiation oncologists, physicists, dosimetrists, nurses, and therapists, and for the highest quality clinical care he has provided for more than 40 years to thousands of patients. We hope you will attend this symposium in recognition of Dr. Perez.

There is no charge for the symposium, lunch, or reception. Pre-registration is encouraged to guarantee seating; however, registration at the door will be accepted.

Program
7:30 a.m.—8:00 a.m.
Registration and Continental Breakfast in the Newman Center Lobby

8:00 a.m.—8:15 a.m.
Welcome

8:15 a.m.—8:45 a.m.
Proton Radiation: The Ultimate in External Beam Therapy?
Herman Suit, MD
Chairman Emeritus
Department of Radiation Oncology
Harvard University

8:45 a.m.—9:15 a.m.
 Cardiovascular Radiation: The New Frontier
Philip Rubin, MD
Chairman Emeritus
Department of Radiation Oncology
University of Rochester

9:15 a.m.—9:45 a.m.
Radiation Therapy for Benign and Not So Benign Disease
Luther Brady, MD
Professor and Chairman Emeritus
Department of Radiation Oncology
Hahnemann University
Program continued

9:45 a.m.—10:15 a.m.
Alpha/Beta Really Is Small for Prostate Tumors
Jack Fowler, DSc, PhD
Department of Human Oncology
University of Wisconsin

10:15 a.m.—10:30 a.m.
Break

10:30 a.m.—11:00 a.m.
Multidisciplinary Therapy of Pediatric Cancer
Teresa Vietti, MD
Professor Emeritus
Pediatric Oncology
Washington University in St. Louis

11:00 a.m.—11:30 a.m.
Combined Modality Therapy at Cervical Center
William Hoskins, MD
Chief, Gynecologic Oncology
Memorial-Sloan Kettering Cancer Center

11:30 a.m.—12 noon
Combined Modality Therapy for Head and Neck Cancer
Bahman Emami, MD
Professor and Chairman
Department of Radiation Therapy
Loyola University

12 noon—12:30 p.m.
Metastatic Bone Cancer
William Powers, MD
Radiation Oncology
Professor Emeritus
Sarasota, Florida

12:30 p.m.—1:30 p.m.
Box lunch provided at Newman Center

1:30 p.m.—2:00 p.m.
Multidisciplinary Treatment of Breast Cancer
Bernard Fisher, MD
Professor, Department of Surgery
Allegheny University of the Health Sciences

2:00 p.m.—2:30 p.m.
Clinical Uses of Chemotherapy/Radiotherapy
John Durant, MD
past Executive Director of the American Society of Clinical Oncology

2:30 p.m.—3:00 p.m.
Benefits of Improved Accuracy in Radiation Treatment of Prostate Cancer
Gerald Hanks, MD
Chairman
Department of Radiation Oncology
Fox Chase Cancer Center

3:00 p.m.—3:15 p.m.
A Phase II Study of Gemcitabine Combined with Radiation Therapy in Patients with Localized Unresectable Pancreatic Cancer
Avraham Kuten, MD
Professor and Head Radiotherapy Unit
Rambam Medical Center
Haifa, Israel

3:15 p.m.—3:30 p.m.
New Directions in the Management of Rectal Cancer
Vincenzo Valentini, MD
Professor Department of Radiotherapy
Catholic University
Rome, Italy

3:30 p.m.—3:50 p.m.
Break

3:50 p.m.—4:20 p.m.
Cancer Centers in the 21st Century
Robert Young, MD
President
Fox Chase Cancer Center

4:20 p.m.—4:50 p.m.
The Significant Contributions of Carlos A. Perez, MD
James Cox, MD
Chairman
Department of Radiation Oncology
M. D. Anderson Cancer Center

4:50 p.m.—5:00 p.m.
The New Radiation Oncology Center
Todd Wasserman, MD
Professor of Radiology
Mallinckrodt Institute of Radiology at Washington University in St. Louis

5:00 p.m.—5:30 p.m.
Final Remarks

5:30 p.m.—7:00 p.m.
Reception
New Radiation Oncology Center
Alvin J. Siteman Cancer Center
4921 Parkview Place, Lower Level

Registration

THERE IS NO CHARGE FOR THE SYMPOSIUM, LUNCH, OR RECEPTION. PRE-REGISTRATION IS ENCOURAGED TO GUARANTEE SEATING; HOWEVER, REGISTRATION AT THE DOOR WILL BE ACCEPTED.

Please respond by May 22, 2001, by mailing this registration to Washington University School of Medicine, Office of Special Programs, Campus Box 8512, 660 Euclid Avenue, St. Louis, MO 63110-9825.

Or register by calling The Office of Special Programs at 314-286-0073.

Please check the events you will be attending.

☑ Symposium
   Number of persons attending
   Name(s)

☑ Lunch
   Number of persons attending
   Name(s)

☑ Reception
   Number of persons attending
   Name(s)
When Breast Cancer Becomes Part of a Woman’s Life

Breast cancer specialists provide straightforward, supportive resources that address concerns accompanying a diagnosis of breast cancer.

When a woman is told she has breast cancer, it is often a terrifying time, causing her to rush to the library, the Internet, and other resources to become better informed and to calm her fears. The resources available do not always meet a woman’s needs, though, as Deborah Price will agree.

by Barbra Rodriguez
Diagnosed with breast cancer in 1998, Price remembers the anxious moments spent in the waiting room of a local breast imaging center before her cancer diagnosis was confirmed. “What I remember seeing when I was having a second mammogram was a videotape that was really impersonal and rather sad,” Price says, adding that she had no one with her to help process that experience.

Now thanks to women like Price, a team of physicians from Mallinckrodt Institute of Radiology, and the staff of the Barnes-Jewish Hospital Breast Health Center, a new booklet and companion video are available to provide a straightforward, supportive approach for addressing concerns that arise when breast cancer becomes part of a woman’s life.

The factual booklet, “One Step at a Time,” covers a host of topics in 10 brief chapters. The first five chapters focus on basic breast cancer facts and myths, health team members, treatment types, and what to expect from breast reconstruction surgery.

Chapters 6 through 8 address a woman’s feelings after diagnosis, her legal and other rights, and what she can expect in follow-up care.

To round out the booklet, a glossary and list of support groups are included, as well as a pocket on the back page for storing information. All of this, plus illustrations, comes in a span of 32 pages that can fit inside a woman’s handbag.

“We really wanted something that was useful and easy to read. Information that could be used in time of need, when the patient is too distraught to sit down and plough through a lengthy book,” says Maria Schmidt, MD, assistant professor of radiology, who directed the project to produce the booklet and video.

The 8-minute video, “Between Friends,” delves into emotional issues, using breast cancer survivors and medical specialists to convey six core messages. These include reminders that many women do survive breast cancer, they should not be afraid to ask questions, and they should be practical in their expectations of themselves during treatment. A positive attitude also is emphasized, as are the importance of developing a support team, celebrating life, and moving on after being diagnosed.

The booklet and video are the culmination of more than a year of work by Schmidt; Dione Farria, MD, MPH, assistant professor of radiology; and Jill Bokern, RN,
nurse coordinator of the Breast Health Center. They received a grant from the St. Louis affiliate of the Susan G. Komen Breast Cancer Foundation, Inc., to develop the educational material. The grant also covered production of 1,000 copies of the booklet and 1,000 copies of the video, which are available through the Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine. The booklet information also is on-line at www.barnesjewish.org.

The breast cancer specialists say conversations with patients—particularly minority women and those with little formal education—convinced them to create the material. Many of these women locally receive cancer treatment through the Breast Health Center at Barnes-Jewish Hospital.

But these educational materials are appropriate for all women who are newly diagnosed with breast cancer. As Farria notes about other breast cancer books, “Some of them, frankly, would be overwhelming even for a physician who had been recently diagnosed with the cancer.”

Schmidt echoes that concern and says that hearing a diagnosis of cancer causes many women to go into shock. “Some of the normal cognitive functions just shut down,” she says. “We wanted to emphasize the importance of asking questions and of bringing someone along to the doctor appointments who can help the patient ask questions and remember the answers and maybe take some notes. Although the doctor may explain choices and recommendations at length, the patient often cannot remember what was said because her anxiety level is so high.”

Farria started the project before she officially came to Mallinckrodt Institute in November of 1999. After arriving at MIR, she collaborated with Schmidt and Bokern on gathering ideas (with the help of a resource collection Bokern had developed) for their own undertaking.

The trio also met one Saturday in the spring of 2000 with the Breakfast Club, a local support group of African-American women who have breast cancer. During a breakfast meeting in the basement of the Centennial Christian Church, not far from the Washington University Medical Center, Deborah Price and about a dozen other club members shared their experiences and the advice they would give women. “They just opened up their hearts and told us what they felt,” Bokern said.

The women spoke about their treatment concerns, how family members reacted to their situation, and other sensitive topics. And they emphasized what had helped them handle their breast cancer diagnosis, such as being patient with themselves and turning to others for support.
Sherril Jackson, the club president, said African-American women frequently have trouble accepting that last piece of advice, since they often are in charge of nurturing others. "It is a difficult role for African-American women to be the patient. I think it is really hard for us to say that we need some help."

In addition, the support group emphasized the importance of celebrating life and staying active after the diagnosis. Schmidt notes that people define an active life in different ways. "For many of these women, it has been involvement in a breast cancer support group, being active in the community, such as the breast cancer community, helping others, or beginning a new project."

The key comments of Breakfast Club members shaped the topics in the video. Jackson and some other club members also were among those interviewed in the video, which was designed and produced—as was the booklet—with pro bono assistance by staff from Fleishman-Hillard Inc., a St. Louis-based communications company.

For the video, the women were asked questions and allowed to give unrehearsed answers. Medical specialists were interviewed using this same approach. These specialists included Washington University School of Medicine’s Virginia Hermann, MD, professor of endocrine and oncologic surgery, and Gerard Doherty, MD, associate professor of endocrine and oncologic surgery and director of the Breast Surgery Service at the Breast Health Center. In addition, Lannis Hall-Daniels, MD, a former radiation oncology resident at Mallinckrodt Institute, and Savannah Davis, LCSW, a social worker at Barnes-Jewish Hospital, participated in the video.

To prepare the educational booklet, Schmidt and her colleagues divided up the parts of each chapter, focusing on brevity and using simple language to convey what women should know. Schmidt worked with the medical illustration office (MedPIC) to develop illustrations of breast cancer concepts, reconstructive surgery, and other subjects.

For example, a dandelion shedding its seeds was used to illustrate cancer’s ability to spread. The image was borrowed from a previous cancer educational program, "Learn, Share and Live," developed...
by researchers at Mallinckrodt Institute. The team also chose some new illustrations, including several of female models that they hoped minority women would feel comfortable viewing. "We really wanted women who looked multicultural, who had typical, middle-aged bodies," Schmidt said. "Not someone with an idealized body shape—like a Barbie doll."

[Barbie is a registered product of Mattel, Inc.]

To help ensure the booklet's appropriateness, the team called on a medical, a surgical, and a radiation oncologist plus a low-literacy specialist to review it. Katherine Jahnige, MD, instructor of obstetrics and gynecology and community outreach coordinator for the Siteman Cancer Center, oversaw an advance showing of the "Between Friends" video to a breast cancer support group for African-American women sponsored by ConnectCare, the regional health care safety net for the poor and underinsured.

Schmidt and her colleagues did not attend the advance showing for fear that the women would be reluctant to speak honestly in the specialists' presence. Jahnige received positive feedback, though, and only minor changes were made in the video.

A follow-up review of the educational materials began in March. Bokern telephoned several dozen women who had been diagnosed very recently with breast cancer.

The women, two thirds of whom were from minority groups, were asked if they would mind receiving the video and the booklet by mail and responding to a phone questionnaire a few weeks later. A three-month review of the Web site also is scheduled.

The trio have additional projects in the works, including educational flip charts that will help breast cancer specialists provide women with a better understanding of what a biopsy, lumpectomy, and other treatment options entail.

Farria notes that the team's enthusiasm for that effort is partly inspired by the resilient spirit of the women who helped create the booklet and video. "While some of the women were still going through issues of continued treatment or a tumor recurring, they were working actively with the American Cancer Society or helping us with the project. They were amazing."
LAUNCHING AN
IMAGE STUDY OF

polycystic

kidney disease

Magnetic resonance and
US imaging assess disease
progression in polycystic
kidney patients

by Candace O'Connor
In 1998, Ty Bae, MD, PhD, assistant professor of radiology, was selected as a principal investigator for a Data Coordinating and Image Analysis Center in a five-year, multicenter study to use magnetic resonance imaging (MRI) and ultrasound (US) imaging for assessing the progression of autosomal-dominant polycystic kidney disease (PKD). PKD is a serious renal disorder characterized by the development and gradual enlargement of cysts in both kidneys.

The four-year patient recruitment process started in January of 2001 and already more than 50 patients with PKD have agreed to participate in this new effort, called the Consortium for Radiologic Imaging Studies of PKD—or CRISP.

PKD: A PROBLEMATIC PROGNOSIS

The CRISP team is targeting the most common genetic kidney disorder that affects some 600,000 people in the United States. PKD can cause impaired renal function, breathing problems, and bloating. When cysts burst, patients also may have bleeding, pain, and infections. PKD patients are more likely to face other serious problems as well, such as early-onset hypertension, cerebral aneurysms, and diverticular disease. As the disease progresses, patients may develop end-stage renal disease (ESRD) and require dialysis or a kidney transplant. PKD is the fourth-leading cause of kidney failure requiring dialysis for survival and accounts for five percent of the ESRD population in the U.S. The cost of PKD-related dialysis therapy exceeds $200 million annually.

Not all patients with PKD progress to ESRD. In fact, about 50 percent of PKD patients will have a milder form of the disease, with no impairment in renal function. Some of the risk factors for progression to ESRD have been identified, and the genes responsible for PKD (PKD-1 and PKD-2 genes) have been discovered. The patients with the PKD-1 gene, accounting for 85 percent of PKD population, tend to have an earlier presentation of the disease and a worse prognosis. The PKD-2 patients consist of 10 to 15 percent of the population and have a milder, late-disease manifestation. Other high-risk factors for disease progression include males, African-Americans, people with larger kidneys, and women who have had three or more pregnancies.
Patients with PKD are usually in their 40s or 50s before they go to a doctor for diagnosis. And by that time, their kidneys are consumed with cysts. Currently, there is no medical therapy to slow or stop the progression of this disease, but medications currently being evaluated in clinical trial may change that, says Bae.

Surgical alternatives also are being investigated. Ralph Clayman, MD, a well-known endoscopic surgeon at Washington University Medical Center, is evaluating the efficacy of laproscopic cystectomy, a minimally invasive procedure that reduces cyst burden. While 50 percent of patients with PKD may not require medical or surgical treatment, how can physicians determine at an early stage which patients are destined to develop ESRD and do need some kind of intervention?

THE CRISP STUDY

Currently, the imaging method most often used to evaluate these patients is ultrasound, an easily accessible evaluation tool. But ultrasound is not as reliable or as accurate as MRI, which provides high-resolution, three-dimensional images with excellent tissue contrast. However, no large-scale trial has ever been done to evaluate the accuracy or validity of MRI in assessing the progression of PKD.

"Presently, we cannot predict whether a person will be in a high-risk group or a low-risk group," says Bae. "We can surmise that because a patient is male and PKD-1, he is at higher risk, but this is not enough."

Bae is a radiologist with expertise in body imaging as well as image analysis, quantification, and processing. However, when he first responded to the National Institutes of Health request for
participation in the PKD study, he was a first-year MIR faculty member with no experience in managing a large, multicenter trial. Bae had to convince the NIH that he could handle the job.

Within months, he assembled a team of experts at Washington University: Saulo Klahr, MD, is a prominent nephrologist and editor of the journal *Kidney International*. Phil Miller, Paul Thompson, and Sarah Littlewood, from the Division of Biostatistics, have extensive experience in web-based systems and in coordinating multicenter studies. Paul Commean, a senior research engineer; Steve Moore, a research assistant professor; and James Blaine, DSc, director of the Institute’s Electronic Radiology Laboratory (ERL), provide expertise in image transfer. Mary Virginia Gaines, an MIR research patient coordinator, serves as project coordinator. Bae’s can-do attitude and expertise in image acquisition and analysis convinced the NIH to award him a $3 million grant.

The goal of the study, says Klahr, is “to conduct a prospective, longitudinal trial to evaluate the accuracy and validity of MRI in determining the progression of autosomal-dominant PKD, defined as a change in both renal and renal cyst volumes over time.” In this trial, he says, MRI-based measurements become “the gold standard in determining the extent of cystic involvement over time.”

Four institutions known for PKD research and with existing patient databases were brought in to recruit and image the study participants: Emory University, University of Kansas, the Mayo Clinic, and University of Alabama. Bae then oversaw the development of a strong imaging protocol, along with a state-of-the-art, web-based system for transferring images. Mallinckrodt Institute was established as the study’s Data Coordinating and Image Analysis Center (DCIAC). The DCIAC would collect images from the collaborating institutions, segment and analyze the images, make the statistical analysis, and then properly store and record the results using a sophisticated data entry system.

To complement the imaging data, each of the clinics is also collecting clinical data to correlate with the image analyses. Using a web-based technology created by Phil Miller and the group in Biostatistics, the clinic coordinators enter the data into a database at the DCIAC. This data will be used to compute statistical correlations between clinical, laboratory, and genetic parameters and the progression of PKD as shown in the images sent. From these analyses it will be possible to answer ques-
polycystic kidney disease

It took nearly a year to complete the final planning and development of the project as participants met every six to eight weeks at the NIH to discuss their progress. Scanning techniques, which varied slightly from one institution to the other, had to be standardized. As a quality control measure, four patients were recruited to travel from one site to another, undergoing scans at each site.

From the outset, the team did not want to send patient films by surface mail. Instead, they built a secure network system, using software developed at Mallinckrodt Institute, for transferring these images electronically. “Once a patient is scanned at any one of the four participating institutions, the MR and US image data first are sent to a dedicated CRISP PC workstation at that institution. The confidential patient information is ‘scrubbed’ from the image headers, and the image data are encrypted for transmission via the Internet to Mallinckrodt Institute for analysis and storage,” says Bae.

“Doctor Bae’s personal leadership, approach to problem-solving, and medical domain expertise have been essential in working with the four imaging centers to develop the standardized imaging protocols required for this study and have guided the analysis team in the ERL in establishing robust image analysis techniques,” says Blaine.

Mallinckrodt Institute will evaluate these images for a number of variables: renal volume, cystic volume, and the percentage of cystic involvement measured by MRI over a specific time frame. By following...
these patients over time, the team hopes to determine whether MRI effectively assesses the changes in renal or cystic volume and whether these volume changes correlate with functional changes in these patients. Bae and his collaborators also want to determine which of these factors predict disease progression and will compare the results of MRI and ultrasound studies.

“We have to prove whether the imaging is useful in identifying these high-risk patients. If it is, how can it be used to guide a patient’s treatment? Can imaging help physicians monitor the treatment and the progression of disease?” says Bae.

The next few years will tell the story, but the CRISP team is hopeful this research will make a difference for PKD patients. “This is a very promising area to investigate and will contribute to advancing the treatment of PKD,” adds Bae.

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**GRAPE, BALLOONS, AND IMAGING**

Along the way, Bae admits, there have been some small, even humorous, obstacles to the study. To test the accuracy and uniformity of the measurements taken by all the cooperating institutions, his team had to build phantoms—models of cyst-riddled kidneys—and send them out to the study participants. But how to mimic a cyst? First Bae tried grapes, which, unlike real cysts, did not vary in size and were too quick to spoil, but he learned that white grapes simulated cysts better than red grapes. Then he tried small balloons.

“I filled the balloons with water, making sure not to introduce any air. Then I tied the balloons with a very short string,” he recalls. “It must have taken me an hour to fashion only a couple of the balloon cysts, but my wife mastered the technique and made around two hundred balloons for me.”

That was only the beginning. These balloons then had to be placed, very delicately, into a kidney-shaped mold filled with near-boiling agar (a gelatinous colloidal medium). “And once I thought the task was done, the balloon would suddenly pop,” Bae says. “So we had to train the balloon, get it used to the hot water, and choose the survivor before it was incorporated into the agar.”
A cutting-edge technology effectively treats head and neck tumors while reducing a common radiation side effect.

by Thomas Peters
Conventional radiation treatment of head and neck cancers requires high doses of radiation to destroy the tumor tissue, but these high levels often are indiscriminately destructive to the surrounding normal tissues. These events often lead to a number of irreversible side effects, including xerostomia (dry mouth) associated with irradiation of the salivary glands. Xerostomia can impact a patient's quality of life by affecting taste, speech, swallowing, and chewing, as well as contributing to dental disease, frequent oral infections, and patient self-esteem. At Mallinckrodt Institute of Radiology's (MIR) Radiation Oncology Center, recent groundbreaking clinical results have proven that a novel radiation treatment called intensity modulated radiation therapy (IMRT) can greatly reduce xerostomia without compromising the radiation dose needed to destroy the tumor.

INITIAL CLINICAL STUDIES

Head and neck cancers are a significant healthcare concern in the United States, where approximately 55,000 new cases and some 13,000 deaths are reported annually. Treatment of head and neck cancers occurs through three standard disciplines: surgery, chemotherapy, and radiation therapy. While chemotherapy and surgery can be effective, they are invasive and long-term treatment regimens that harbor increased risks, costs, and side effects. Conventional radiation treatments are broad-based systems for the delivery of radiation to tumors, but they often affect the surrounding healthy tissue and can lead to significant side effects. Through the use of computer-guided systems, such as IMRT, radiation therapy can be used in a highly selective and noninvasive manner to attack tumor tissue with minimal effects on normal tissues.

IMRT is an advanced form of conformal radiation therapy that uses computer algorithms to generate complex, three-dimensional radiation dose distributions specifically tailored to the individual tumor volume. And yet the dose can be escalated in order to destroy the tumor but not affect healthy organs, such as the salivary glands. With IMRT, radiation is administered through a reinforced, individually fitted thermoplastic mask designed to fit each patient's head and neck area. The patient is immobilized and lies on the bed of a computed tomography scanner while the machine acquires imaging information. Normal and target tumor volumes are then delineated by physicians, based on clinical and radiological findings. Since each patient's tumor size or shape, as well as facial features, are unique, the IMRT process requires an incredible level of precision. Nevertheless, according to Clifford Chao, MD, assistant professor of radiology and principal investigator of Mallinckrodt Institute's IMRT study, "IMRT provides the opportunity to control the tumor without substantially affecting critical normal tissue."

A number of critical organs are located in close proximity to head and neck tumors, including the spinal cord, brain stem, optic systems, and salivary glands. "Approximately seventy-five percent of patients in our study who receive conventional radiation treatments for head and neck cancers exhibit moderate to severe dry mouth," says Chao.

Xerostomia can be qualitatively measured by asking the patient questions pertaining to associated symptoms such as problems with speech, eating, drinking, sleeping, or oral and dental health.
Xerostomia can also be measured quantitatively by directly measuring the flow of saliva. Nonetheless, xerostomia is usually pervasive and permanent in most conventionally irradiated patients, often leading to severe quality of life changes including lowered self-esteem.

According to Chao, the first head and neck cancer patients treated by IMRT came to the Institute in February of 1997. Since then an additional 250 patients have been treated. “Whereas other institutions treat more types of cancer with IMRT, the Radiation Oncology Center is the leading institution in treatment of head and neck cancer patients,” he says. “We have state-of-the-art equipment and the best available computer planning system.”

In addition to the computers, the IMRT treatment protocol requires teamwork among physicians, physicists, dosimetrists, consulting surgeons, medical oncologists, diagnostic radiologists, and nurses. Overall, the combined forces of superior radiological treatment facilities and integrated teamwork make the Radiation Oncology Center an ideal environment for Chao’s clinical studies to establish treatment protocols for head and neck cancer patients.

**CLINICAL RESULTS**

Initially, clinical studies were performed to determine conformal radiation therapy effects on head and neck cancer patients through forward or inverse planning protocols. Forward planning is the classical or conventional route of radiation therapy where the team determines all the variables and proceeds by a trial-and-error method. "Forward planning is a very laborious process that requires substantial time and effort to determine the one combination of various directions of radiation beams, gantry angles, energy of radiation, and type of radiation that should be used," says Chao. "And the worst part is that even when a plan is set up, you cannot be sure it is the best one. You do the best you can, but you always feel there may be a better one that has not been explored."

Inverse planning is the opposite of forward planning, according to Chao, in that the radiation oncologist designs the target, defines the normal tissues, and estimates the amount of radiation to deliver to a particular region—and the computer determines how it will be delivered.

The initial study of IMRT involved 17 patients with varying types of cancer, using either forward or inverse planning protocols. The results were promising in that tumors were controlled by IMRT similar to conventional radiation treatments. No severe side effects were observed with IMRT, and parotid gland (major salivary gland) damage was reduced. Chao indicates that inverse planning provided the best, achievable plan because tumor and normal tissues could be weighed separately.

In two additional clinical studies, Chao was able to support his initial findings on tumor control and to determine a correlation in the amount of saliva produced to the dose of radiation delivered to the parotid gland. This hypothesis was previously controversial because other investigators have been unable to pinpoint a direct correlation. However, through computer modeling and quantitative determinations of saliva flow, Chao and his colleagues showed that six months after IMRT treatment, patients exhibited a four percent drop exponentially in saliva flow per Gy (Gy = gray, a standard unit of radiation). Additionally, Chao demonstrated that a decrease in saliva flow per Gy leads to the decrease in quality of life.
Results of Salivary Function

in saliva flow correlated both qualitatively and quantitatively with the symptoms of xerostomia. Overall, IMRT effectively targeted head and neck tumors while reducing damage to salivary glands, leading to a reduction of xerostomia.

Following the initial results, additional head and neck cancer patients were treated by IMRT, and the treatment protocol has become more efficient and standardized. In the initial study IMRT treatment took 45 minutes. “Now that we are past the learning curve, treatment time is down to twenty-five minutes,” says Chao.

“The IMRT treatment technique is quite standardized at Mallinckrodt Institute’s Radiation Oncology Center because we set criteria based on earlier studies and functional outcomes we have gathered,” adds Chao.

The goal of the earliest study was to set up a treatment protocol for patients that allowed the best treatment of head and neck tumor with parotid sparing or less xerostomia. However, as with any treatment protocol there are many variables and there exist many different types of cancer within the general head and neck grouping. According to Chao, the planning process was set up so those patients with similar diseases can be treated with similar protocols for the sake of consistency.

FUTURE WORK

In the future Chao plans to build on these studies and create a tool for better understanding the normal functional changes in the major salivary glands, which include the parotid, submandibular, sublingual, and other minor saliva glands. The main goal, according to Chao, is to understand the exact role of these glands in normal function and how each patient’s quality of life would be affected if the glands were damaged.

Overall, Chao says that MIR’s Radiation Oncology Center now has the proper tools and system to treat head and neck cancers and will continue to develop the infrastructure so that patients receive the best treatment possible. “We want to know the control rate, functional outcome, and quality of life effects the IMRT technique will have on patients coming to the Radiation Oncology Center,” says Chao.

The effectiveness of the IMRT treatment protocol on head and neck cancer patients at the Institute has already elicited referrals. The majority of patients are from the St. Louis region but some patients come from Chicago, Kansas City, New York, and Colorado as well as from other countries, such as Israel. Ultimately, by way of the superior teamwork and modern facilities at MIR, Chao hopes that “by using IMRT we can improve the cancer cure rate and eliminate the high costs associated with tumor recurrence.”

IMRT STUDIES COINVESTIGATORS

- Joseph Deasy, PhD, assistant professor of radiology
- Joyce Taylor Haynie, RN, MSN
- Daniel Low, PhD, assistant professor of radiology
- Carlos Perez, MD, professor of radiology and director of the Radiation Oncology Center
- James Purdy, PhD, professor of radiology and chief of radiation physics
In this section, the names of employees who are full-time faculty or staff or who have an appointment in the Department of Radiology are highlighted in boldface type.

**PROMOTIONS**

Carmen Dence, MS, research instructor in radiology, was promoted to research scientist, Division of Radiological Sciences.

Nobuo Horikoshi, MD, instructor in radiology, was promoted to assistant professor of radiology, Radiation Oncology Center.

Eric Klein, MS, assistant professor of radiology, was promoted to associate professor of radiology, Radiation Oncology Center.

Elizabeth McFarland, MD, assistant professor of radiology, was promoted to associate professor of radiology, Division of Diagnostic Radiology.

Sasa Mutic, MS, instructor in radiology, was promoted to assistant professor of radiology, Radiation Oncology Center.

Sandy Runs, MD, instructor in radiology, was promoted to assistant professor of radiology, Division of Diagnostic Radiology.

Sally Wagner-Schwarz, MS, RPh, research instructor in radiology, was promoted to research scientist, Division of Nuclear Medicine.

Bruce Whiting, PhD, instructor in radiology, was promoted to research assistant professor of radiology, Division of Radiological Sciences.

Jie Zheng, PhD, instructor in radiology, was promoted to research assistant professor of radiology, Division of Radiological Sciences.

**NEW FACULTY**

Samuel Achilefu, PhD, associate professor of radiology, Division of Radiological Sciences.

Zuofeng Li, DSc, assistant professor of radiology, Radiation Oncology Center.

**JOINT APPOINTMENT**

Kathleen McDermott, PhD, associate professor of psychology, was appointed to the American College of Radiology’s Appropriateness Criteria Expert Panel on Gastrointestinal Imaging.

Carolyn Anderson, PhD, associate professor of radiology, was appointed to the Editorial Advisory Board of the journal *Bioconjugate Chemistry*.

Kyongtae Bae, MD, PhD, assistant professor of radiology, was appointed to the National Institutes of Health Special Study Section SSS-X to review neurology grants for medical imaging.

Thomas Conturo, MD, PhD, associate professor of radiology and adjunct associate professor of physics and biomedical engineering, was appointed to the National Institutes of Health Special Study Section SSS-X to review neurology grants for medical imaging.

DeWitte Cross, MD, associate professor of radiology, was appointed to a two-year term on the Standards of Practice Committee of the American Society of Interventional & Therapeutic Neuroradiology.

Jay Heiken, MD, professor of radiology, chief of abdominal radiology, and codirector of body computed tomography, was appointed to the American College of Radiology’s Appropriateness Criteria Expert Panel on Gastrointestinal Imaging.

Susan Langhorst, PhD, CHF, assistant professor of radiology, was elected to a six-year term on the National Council on Radiation Protection and Measurements.

Jeff Michalski, MD, assistant professor of radiology, was named chair of the Radiation Therapy Oncology Group’s (RTOG) Image-Guided Radiotherapy Committee.

Scott Mirowitz, MD, professor of radiology and co-director of body magnetic resonance imaging, was elected to fellowship in the American College of Healthcare Executives.

Joel Perlmutter, MD, professor of neurology and radiology, was appointed as a member of the Scientific Advisory Board of the American Parkinson Disease Association.

Cliburn Converse, MD, was appointed as president-elect of the American College of Radiology (ACR). The ACR also announced that $300,000 in grants will be awarded for research on “High-Value Healthcare: Prioritizing what matters most.”

Walter P. DeBakey, MD, was appointed to the National Academy of Medicine.

Maria McManus, MD, was appointed to the National Academy of Sciences.

Michael P. Wagner, MD, was appointed to the National Academy of Engineering.

Hauke Hausmann, MD, was appointed to the National Academy of Sciences.

Tony Nemes, MD, was appointed to the National Academy of Sciences.
GRANTS

Carolyn Anderson, PhD, associate professor of radiology, as principal investigator, received a $50,000 U.S. Department of Defense grant for research on "Radio-labeled matrix metalloprotease inhibitors for breast cancer therapy." Coinvestigators for the one-year grant are Jason Lewis, PhD, research instructor in radiology, and Wen Ping Li, PhD, research associate.

Kuongtae Bae, MD, PhD, assistant professor of radiology, and Jack Engsberg, MD, of the Max Biedermann Institute, Switzerland, as coprincipal investigators, received a two-year, $30,000 foundation grant for research on "Center of gravity in scoliosis."

Clifford Chao, MD, assistant professor of radiology, as principal investigator, received a $510,000 National Institutes of Health grant for his research on "Hypoxic image-guided intensity modulated radiotherapy." Coinvestigators for the four-year grant are Walter Bosch, PhD, instructor in radiology; Farrukh Dehdashti, MD, associate professor of radiology; Mark Mintun, MD, professor of radiology; Franz Wippold, MD, associate professor of radiology; Samir El-Mofty, MD, Department of Pathology; Bruce Haughey, MD, Department of Otolaryngology-Head and Neck Surgery; and Kenneth Schechtman, PhD, Division of Biostatistics.

Thomas Conturo, MD, PhD, associate professor of radiology and adjunct associate professor of physics and of biomedical engineering, as principal investigator, received a $2.1 million National Institutes of Health/National Institute of Neurological Disorders and Stroke grant for "Tracking neuronal fibers in the living human brain by MRI." Coinvestigators for the five-year grant are Erbil Akbudak, PhD, research instructor in radiology; Abraham Snyder, PhD, MD, research scientist of radiology; Joshua Shimony, PhD, MD, clinical fellow in neuroradiology; Harold Burton, PhD, professor of neurology and of radiology; Maurizio Corbetta, MD, assistant professor of neurology and of radiology; Nicolas Lori, graduate research assistant in radiology; and Gordon Shulman, PhD, Department of Neurology. Consultants are Marcus Raichle, MD, professor of radiology and of neurology and neurobiology; David Van Essen, PhD, Department of Anatomy and Neurobiology; and William Hart, MD, PhD, Department of Ophthalmology.

James Duncan, MD, PhD, assistant professor of radiology, received a $25,000 award from the Cardiovascular and Interventional Radiology Research and Education Foundation for his project "Hepatic gene therapy in neonates." Katherine Ponder, PhD, Department of Internal Medicine, is coinvestigator.

GE-AUR Fellowship

In 1999, Katie Vo, MD, then a neuroradiology fellow, was one of four radiology investigators nationwide to receive a GE-AUR Radiology Research Academic Fellowship. The two-year General Electric-Association of University Radiologists fellowships encourage young investigators to pursue careers in radiology research. Vo, now an MIR faculty member, is shown at the official 2000-2001 stipend presentation with (left to right) Greg Thudium, corporate account manager, GE Medical Systems; Gary Brink, director of radiology, Barnes-Jewish Hospital; Gilbert Jost, MD, professor and interim director of Mallinckrodt Institute; and Tony Scaduto, regional sales manager, GE Medical Systems.
Eduardo Moros, PhD, associate professor of radiology, as principal investigator, received a $1 million National Institutes of Health/National Cancer Institute grant for his research on “Ultrasonic systems for simultaneous thermoradiotherapy.” Coinvestigators for the five-year grant are Robert Myerson, PhD, MD, professor of radiology; William Straube, MS, instructor in radiology; and Eric Klein, MS, associate professor of radiology.

Pratik Mukherjee, MD, clinical fellow in neuroradiology, as principal investigator, received a $50,000 Berlex/ASNR Fellowship in Basic Science Research from the American Society of Neuroradiology for his project “Comparison of magnetic resonance imaging with positron emission tomography in the study of cerebral hemodynamics.” Colin Derdeyn, MD, assistant professor of radiology, is Mukherjee’s sponsor for the one-year grant.

Joel Perlmutter, MD, professor of neurology and of radiology, as principal investigator, received a $1.1 million grant from the National Institutes of Health/National Institute of Neurological Disorders and Stroke for research on “Mechanisms of deep brain stimulation.” Coinvestigators for the three-year grant are Jonathan Mink, MD, Department of Neurology; Tom Videen, PhD, research professor of neurology and of radiology; Tamara Hershey, MD, Department of Psychiatry; Stephen Moerlein, PhD, associate professor of radiology; and Lori McGee-Minnich, Department of Neurology.

Nikolaos Tsekos, PhD, assistant professor of radiology, received a two-year grant from the American Heart Association in the amount of $70,000 for his research on “Assessment of myocardial sodium and high energy phosphates on the ischemic and reperfused heart with MR techniques.” He received a three-year, $210,000 grant from the Whitaker Foundation to study “Methods for dynamic magnetic resonance imaging and spectroscopy of the heart.” Tsekos received a one-year Seed Cycle 1 award in the amount of $24,000 from the Radiological Society of North America for his project “Assessment of myocardial blood flow with magnetization transfer contrast MRI.”

Biello Lecture

At the Fifteenth Annual Daniel R. Biello Memorial Lecture on March 12, Sanjiv Gambhir, MD, PhD, head of the Bio-Imaging Assay Laboratory, Crump Institute for Biological Imaging, University of California, Los Angeles, spoke on “Advances in molecular imaging for imaging gene expression.” Barry Siegel, MD, (left) professor of radiology and director of the Division of Nuclear Medicine, coordinates the Biello Lecture.
**HONORS/AWARDS**

Carlos Perez, MD, professor of radiology and director of the Radiation Oncology Center, was named chairperson for the Radiological Protection of Patients in Radiation Therapy Session for the International Conference on the Radiological Protection of Patients in Diagnostic and Interventional Radiology, Nuclear Medicine, and Radiotherapy, held March 26-30 in Malaga, Spain.

Jerold Wallis, MD, associate professor of radiology, was named organizer of the Society of Nuclear Medicine lidwinter Symposium on “Using the Internet for Tele-Nuclear Medicine” held in February in Tampa, Florida.

**LECTURES/PRESENTATIONS**

Carolyn Anderson, PhD, associate professor of radiology, presented “Radiopharmaceuticals for cancer imaging and therapy” at Central Missouri State University, Warrensburg, Missouri, February 8.

Kyongtae Bae, MD, PhD, assistant professor of radiology, spoke on “The evolving role of MRCP in pancreaticobiliary disease” at A Galaxy of Gastroenterology, sponsored by Washington University School of Medicine’s Continuing Medical Education office, St. Louis, Missouri, March 9.

Thomas Conturo, MD, PhD, associate professor of radiology and adjunct associate professor of physics and of biomedical engineering, as invited speaker, presented “White matter fiber tractography” at the National Institutes of Health Diffusion Tensor MRI (DT-MRI) Conference: From Bench to Bedside, Bethesda, Maryland, December 6 and 7. He spoke on “Functional magnetic resonance imaging for neuroscience research” at the MR Imaging and Spectroscopy Center, Louisville, Kentucky, January 11 and 12.

Maurizio Corbetta, MD, assistant professor of neurology and of radiology, presented “Mapping of visual systems in the human brain” at the European School of Functional Magnetic Resonance Imaging, Utrech, Holland, January 13. He spoke on “Attentional networks or attentional tricks” at the International Neuropsychological Society meeting, Chicago, Illinois, February 17.

DeWitte Cross, MD, associate professor of radiology, spoke on “CNS thrombosis” at the South Carolina Upstate Neurovascular Symposium, Greenville, South Carolina, March 17.

Colin Derdeyn, MD, assistant professor of radiology, presented “Late thromboembolic events after treatment of intracranial aneurysms with GDC” at the American Heart Association Annual Stroke Meeting, Fort Lauderdale, Florida, February 16.

Perry Grigsby, MD, MBA, professor of radiology, spoke on “Radiotherapy for stage IB carcinoma of the cervix” at the 9th Annual Conference of the Association of Gynaecologic Oncologists of India, Gwalior, India, December 1-3.


Anil Khosla, MD, instructor in radiology, spoke on “Intracranial manifestations of systemic cancer—imaging issues” and “Diffusion imaging in neurological diagnosis” at the All India Institute of Medical Sciences, New Delhi, India, March 20.
Continued from page 25

Eric Klein, MS, associate professor of radiology, presented “The conformal and intensity modulated therapy programs at Mallinckrodt Institute” and “Physics issues with DMLC delivery” at the University of Michigan, Ann Arbor, Michigan, March 15.

Jason Lewis, PhD, research instructor in radiology, presented “Cu-64-bis(thiosemicarbazone) complexes as agents for diagnosis and radiotherapy” at the 2000 International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, December 18.

Elizabeth McFarland, MD, associate professor of radiology, spoke on “Dimensional CT angiography of endovascular aortic stent grafts” at the Midwest Regional Non-invasive Vascular Society, St. Louis, Missouri, February 15.

Robert McKinstry, MD, PhD, assistant professor of radiology, presented “Web resources for physicians,” “Web resources for consumers,” “Solutions for enhancing your practice,” and “Authentication and Internet security” at the American Medical Association (AMA) House of Delegates Interim Meeting, Internet Health Roadshow, Orlando, Florida, December 4. He spoke on “Novice Internet training,” “Introduction to Internet solutions,” “Using Internet applications,” and “Creating Web sites” at the AMA Internet Health Roadshow, Jackson, Mississippi, February 27, and at the AMA National Leadership Development Conference Internet Health Roadshow, Washington, DC, March 3 and 4.

Jeff Michalski, MD, assistant professor of radiology, spoke on “Techniques and management of patients receiving prostate brachytherapy” and “Advances in radiation therapy of prostate cancer” at the University of Louisville Hospital, Louisville, Kentucky, December 5 and 6. He presented “3D conformal radiation therapy and traditional therapy” at the Radiation Therapy Oncology Group/Patient Advocacy Committee Meeting, Tampa, Florida, February 9. He presented “Debate: IMRT only for major referral centers” to the American Society of Therapeutic Radiation Oncologists, Chicago, Illinois, March 9. Michalski spoke on “The role of hormonal therapy in the treatment of prostate cancer” at the AstraZeneca Speaker’s Bureau/Illinois Oncology Nurses Society meeting, Springfield, Illinois, March 14. He presented “Innovations in radiation therapy for prostate cancer” at Inova Fairfax Hospital, Falls Church, Virginia, March 29.

Mark Mintun, MD, professor of radiology, as invited lecturer, spoke on “Brain mapping with PET and SPECT” at the 39th Annual Meeting of the American College of Neuropsychopharmacology, San Juan, Puerto Rico, December 10.


RSNA honors

At the 86th Annual Scientific Meeting of the Radiological Society of North America, held in Chicago, Illinois, November 26 through December 1, 2000, Anil Khosla, MD, instructor in radiology, was a multiple winner of the Case of the Day: Sunday for cardiac, nuclear medicine, and ultrasound; Monday for cardiac and neuroradiology. Medhi Poustchi-Amin, MD, clinical fellow in magnetic resonance imaging, received a Certificate of Merit for the scientific exhibit “Practical cardiac MRI.”

Joel Perlmutter, MD, professor of neurology and of radiology, spoke on “Altered cortical blood flow response to L-dopa in chronically L-dopa treated Parkinson’s disease” and “Blood flow responses to deep brain stimulation of the thalamus in essential tremor” at the 7th International Meeting of The Basal Ganglia Society, Bay of Islands, New Zealand, February 12.

**Senturia Lecture**

On February 12, James Thrall, MD, professor and chairman, Department of Radiology, Massachusetts General Hospital, presented the Seventh Annual Hyman R. Senturia Lecture, “Managing change in twenty-first century radiology practice.” Shown with Thrall (right) is Scott Mirowitz, MD, professor of radiology and coordinator of the Senturia Lecture.
Lectures/Presentations

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Stuart Sagel, MD, professor of radiology, chief of chest radiology, and codirector of body computed tomography, spoke on “CT angiography for pulmonary embolism,” “CT of the pleura,” “CT of non-vascular mediastinal masses,” and “Role of CT in bronchogenic carcinoma” at the 17th Annual Computed Body Tomography Course: The Cutting Edge, South Beach, Florida, March 19-23, 2001.

Barry Siegel, MD, professor of radiology and of medicine, and director of the Division of Nuclear Medicine, presented “Applications of PET in oncology” at Mount Sinai Medical Center and at Baptist Medical Center, Miami Beach, Florida, February 14-19.

Marilyn Siegel, MD, professor of radiology and of pediatrics, spoke on “The differential diagnosis and postnatal management of prenatally detected pyelectasis,” “Intracranial hemorrhage in the neonate and infant,” and “The acute pediatric abdomen” at the British Medical Ultrasound Society, Eastbourne, United Kingdom, December 5-7. As visiting professor, she presented “MR/CT of common pediatric abdominal tumors” and “Ultrasonography of the acute pediatric abdomen” at Yale University, New Haven, Connecticut, March 1. Siegel spoke on “Ultrasonography of intracranial hemorrhage and ischemia” and “Sonography of acute right lower quadrant pain in children” at the 45th Annual Convention of the American Institute of Ultrasound in Medicine, Orlando, Florida, March 11 and 12.

Vijay Sharma, PhD, assistant professor of radiology, presented “Novel gallium(III) complexes as potential PET imaging agents for probing multidrug resistance (MDR1) P-glycoprotein (Pgp): effect of MDR reversal agents” at the American Chemistry Society Pacifichem 2000 Meeting, Honolulu, Hawaii, December 14-19.


Todd Wasserman, MD, professor of radiology, presented “Long-term toxicity of radiation therapy for Hodgkin’s disease” at the Rabin Medical Center, Tel Aviv University, Petach Tikva, Israel, December 15. He presented “Protectors” to the Cancer Education Program-Tumor Board, Elkhart General Healthcare System, Elkhart, Indiana, December 20, and at the Lakeland Continuing Medical Education Center, St. Joseph, Michigan, March 22. Wasserman spoke on “Radioprotection in oncology” at Grand Rounds, Northwestern Memorial Hospital/Northwestern University Cancer Center, Chicago, Illinois, January 19.

SYMPOSIUM

In this section of FYI, only those faculty and staff who have MIR appointments are listed.

SOCIETY OF COMPUTED BODY TOMOGRAPHY AND MAGNETIC RESONANCE

Twenty-fourth Annual Course
South Beach, Florida
March 19-23, 2001

Stuart Sagel, MD, Interactive Case Session: Chest.

WORKSHOP I
Stuart Sagel, MD, “CT of the thorax: anatomic variants and pitfalls.”

WORKSHOP II
Jay Heiken, MD, “Liver lesion characterization.”

WORKSHOP III
Stuart Sagel, MD, “CT of the thorax: anatomic variants and pitfalls.”

Marilyn Siegel, MD, “Pediatric imaging: techniques and oncology.”

2ND SUB: WORKSHOP IV
Stuart Sagel, MD, “CT of mediastinal masses.”

Marilyn Siegel, MD, “MRI of musculoskeletal masses.”
MEET THE
DIAGNOSTIC
RADIOLOGY
CHIEF RESIDENTS
2001–2002

(Left to right) Douglas Curry, MD;
Sailendra Naidu, MD; and
James Goddard, MD.