Treating Patients With Venous Disease in the New Millenium: It is Time to Look at This Issue

by Patricia E. Thorpe, MD, Director of Interventional Radiology

Why is it now time to offer state-of-the-art care to patients with chronic venous disease? Because chronic venous disease is the most common problem in vascular medicine. It is debilitating and, if not treated early and effectively, is extremely costly to society, insurance companies, employers and affected individuals. Venous problems are lifelong conditions that often cause substantial morbidity, resulting in lost workdays, early retirement and chronic medical care. Untreated venous disease can significantly decrease quality of life during prime working years or as individuals approach retirement. It is well known that venous insufficiency increases with age, so as baby boomers enter their fifth, sixth and seventh decades of life, the prevalence of venous insufficiency will increase, resulting in a greater medical cost burden for treatment of leg swelling, leg pain, thrombophlebitis and stasis ulcers. Many of the patients we treat are relatively young. They are in their twenties and thirties when they develop deep venous thrombosis (DVT). When the thrombus is extensive and does not resolve, the young, active individuals are left with an unwelcome disability that totally alters their quality of life and career. As I write this, we are treating a 21-year-old man who has bilateral iliofemoral DVT. In July 2000, left side; July 2001, left side again, and now in 2002, he experiences right leg DVT. As a two-month-old preemie in 1981, he had numerous central lines placed. Now, as a 6’6” young man, he suffers from post thrombotic syndrome, replete with ankle ulcers due to infrarenal caval occlusion and chronic iliofemoral thrombosis. This young patient is an example of numerous patients who develop symptomatic venous occlusion associated with central catheters.1

A venous clinic can provide early diagnosis and treatment by teaching about signs and symptoms and making non-invasive testing readily available. Many primary care physicians see patients with venous conditions that they do not recognize and cannot treat. Evaluating and treating people with venous problems are important components of a vascular institute. Data (1999-2000) from a major U.S. insurance company shows 5.2 claims per 1000-insured indicate venous insufficiency. This is in addition to 2.1/1,000 representing the primary diagnoses of thromboembolism (ICD 415.19, 3.8).2

In 1992, Hume estimated that 3% of the Medicare population has a venous stasis ulcer. About 1 person in 1,000 is estimated, at any point in time, to have an unhealed ulcer.3 With the population of the U.S. approaching 270,000,000, this

(continued on page 3)
Notes from the Chair

It is with a great enthusiasm that I write my first “Notes from the Chair” column for this newsletter and express my sense of pride as a new member of the Department of Radiology at The University of Iowa. The Department is truly a “rare jewel” among academic radiology departments with its renowned clinical excellence in many areas (including neurointerventional, orthopedic, pediatric, sonographic and nuclear radiology), its reputation for excellence in education, and its achievements in a broad cadre of imaging research (including molecular imaging, image guided tumor and neurovascular therapy, image perception, image analysis, functional/physiologic pulmonary imaging, applied research in the development of small animal imaging systems and digital imaging). I am happy to be here.

Since my arrival in the department, I have been asked both directly and indirectly, about the future vision and management philosophy for the department. Below are some thoughts I envision as a guide as we work together to make The University of Iowa Department of Radiology a model environment in which to work.

Basic Values and Beliefs

Ours is a leading academic radiology department, and our responsibility is to help sustain and guide it through current challenging times, and assure that it is always looking and moving forward. We are guided by the recognition that change is as essential as it is difficult to accomplish, and also by the maxim: First, do no harm. A fundamental task of an academic department is to sustain and augment the activities of research, education and service that are carried out in our clinical facilities, laboratories, classrooms and other settings. A successful administration provides, not only clear leadership, but also supports staff functions as unobtrusively as possible, facilitating what really is the defining quality of academic life – freedom of thought, creativity, freedom to sub-specialize, and, hopefully, freedom from unnecessary intrusions and micromanagement.

Core Principles and Approaches in Our Management Philosophy

Within the above framework, the department will promote principles, qualities and values that will serve to make our environment as humane as possible and recognize individuals’ lives and responsibilities outside their academic careers. Areas in which the Department’s leadership can and should play a decisive role are:

Strategic Focus: helping to keep the enterprise focused on its core missions – teaching, research and service – by encouraging and supporting the highest possible levels of achievement and quality in all activities we undertake, by integrating the creative efforts of individuals with the support of organizational units (such as our “roundtable” education group, our various research groups, our group of excellent front line clinic supervisors, our radiology nursing group, and the faculty division directors) and, finally, by facilitating collaborative efforts across such units.

Fairness and Equality: ensuring full equality and opportunity with respect to race, ethnic origin, gender and other dimensions of diversity in the recruitment, retention and promotion of technical and support staff, faculty and trainees.

Human Values: developing an organizational culture that is inclusive, facilitates collaboration, and accepts and rewards individuals’ strengths, talents and experiences. The culture should encourage individuals to balance their work and personal lives, and be supportive of them both developmentally and interpersonally.

Civic-mindedness: being mindful of our department’s and the institution’s public responsibilities and privileges, and helping to find ways to make it more responsive to the needs and interests of our patients, and continuously to earn the trust of our referring clinicians and the public. We practice in a very unique environment and must always be mindful of the needs of our customers (both patients and referring physicians), many of whom reside in sparsely populated, rural areas of the Midwest.

Personal and Professional Integrity: promoting methods of operation that emphasize honesty in our interactions with each other, adherence to legal and ethical standards, and the wise application of institutional policies.

Managerial Effectiveness: providing effective leadership to the various organizational units of the Department through the application of sound principles of management, efficient utilization of resources, reasoned judgment and delegation of responsibilities, and strategic vision.

Professional Development

Each member of the Department’s various leadership groups is encouraged to be involved in activities, services, and self-education that will acquaint them with the state of practice and scientific work nationally in their area of responsibility. A core activity for the Department is providing mentorship and support for courses, workshops, pilot research, or other programs to extend and deepen the professional competencies of its faculty, staff and trainees. Our culture must be receptive to and support lifelong learning. Each member of the leadership groups should work within his or her own organizational unit to create opportunities and expectations for developing our faculty, staff and trainees.

Performance Management

The Department supports the concept and practice of performance evaluation and our performance management principles should reflect and reward congruity with the principles and values outlined above.

In summary, I’m delighted to work among the creative and collegial group of academic radiologists, radiology residents and fellows, technologists and technologist students, nurses, and support staff who bring to The University of Iowa Department of Radiology its well-deserved recognition for excellence.

Laurie L. Fajardo, MD, FACR
Professor & Head, Department of Radiology
means that among the Medicare age group, more than 2 million people have a healed or unhealed ulcer caused by venous disease. A more recent epidemiological study was launched in 1994 to study the prevalence of venous diseases in a homogeneous population with a low level of immigration or migration for the past 30 years. In 1996, it was shown that 8.6% of the population (mean age 46.3 years range 8-94 years) had a clinically relevant venous problem. In 3%, the problem was severe, meaning they had been or were under medical treatment, or had required hospital admission. In 2.8%, the problem was documented objectively but remained subclinical. The average cost per patient for a year’s treatment was 850 Euro dollars, including hospital costs, lost workdays and medical products. It emphasized that considering the fact that venous diseases are chronic in nature, the costs to the community make these diseases a major health care problem. The authors go on to say that “inefficiency, lack of prevention and differences of standards probably double the costs of venous diseases.”

Recognizing that venous disorders are truly a major health care issue in developed countries is the first step in creating a responsible approach whereby we can effectively screen younger people and intervene before venous disease becomes disabling and expensive. Simple screening for Factor V Leiden can alert individuals to the risk of hypercoagulability.

Minimally invasive therapy, such as catheter-directed saphenous vein ablation and proper compression stockings, can minimize future risk of ulcer occurrence while improving quality of life. Dissolving acute blood clots before there is damage to the valves can prevent post-thrombotic syndrome. Among persons diagnosed with deep vein thrombosis, it is estimated that over 80% of those treated with standard heparin therapy alone will develop a chronic condition of venous insufficiency, with nearly 50% characterized by constant leg pain and/or swelling. It has been well demonstrated that standard heparin therapy for multi-segmental lower extremity thrombosis leaves most individuals with unwanted clinical sequelae. When patients suffer immensely from the effects of residual obstruction and damaged valves, endovascular intervention, rather than bypass surgery, has been shown to give effective and lasting improvement.

We have entered an era in medicine and surgery where minimally invasive therapies are providing desired results with less morbidity than conventional therapy. This is seen in the areas of cardiac intervention, laparoscopic surgery and treatment of arterial vascular disease, such as aortic aneurysm and carotid stenosis. Venous disorders have been under-diagnosed and undertreated for many years. This is partly because certain conditions are, in fact, difficult to diagnose, e.g. pulmonary embolism and deep vein thrombosis. But we now have at hand better ways to evaluate and treat venous disease. Ultrasound makes screening non-invasive and painless. Thrombolytic therapy can quickly dissolve an acute thrombus safely and effectively. Catheter techniques in outpatient settings are available to replace vein stripping for treatment of venous hypertension related to saphenous vein reflux. All of these therapies are very underutilized because the medical community does not address the seriousness, immense morbidity and cost of venous disease. This reflects the fact that venous conditions last a lifetime and slowly manifest their debilitating effect. Although the risk of pulmonary embolism is appreciated as life threatening, how often do physicians consider the morbidity and cost of leaving a leg filled with blood clots after they believe they have treated the patient with anticoagulation drugs for 3-6 months? How many times will a patient return for medical care related to the first under-treated event? We know it is significant, but reliable figures for the entire population have never been obtained.

Now we are beginning to see an awakening in the medical community to the seriousness of venous disease. Long recognized by our European colleagues as a major health issue, U.S. medical communities are now starting to realize that treating peripheral vascular disease means including venous disorders along side arteriosclerosis, for it is the most common problem in vascular medicine. With the advent of minimally invasive therapies with durable clinical results, we have the opportunity to intervene and interrupt a disease process that has defied clinicians for centuries.

A venous clinic can provide early diagnosis and treatment by teaching about signs and symptoms and making non-invasive testing readily available.

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References

2. Mutual of Omaha database 1999 (170,000 patients) and 2000 (180,000 patients): www.mutualofomaha.com (see current trends), and personal communication.
Since the last update, the Neuroradiology Section has seen major changes. Dr. William Yuh left the Department in April of 2001 to become Chairman of Diagnostic Radiology at The University of Oklahoma. Dr. Wendy Smoker, Professor of Radiology, was recruited to return to her alma mater and joined the faculty in December of 2001. She currently serves as Director of Neuroradiology and Co-Director of the MRI Center, along with Dr. Alan Stolpen.

During the past 10 months, a number of innovative changes have been made to both the clinical and teaching efforts of the Neuroradiology Section. Cross-sectional imaging studies are currently being saved on hard copies with 20 images per film, rather than the previous 12, resulting in significant savings in film costs, particularly for MR studies. We are, however, rapidly transitioning to soft-copy interpretation from our expanding PACS system.

Beginning April 1, 2002, 24/7 Neuroradiology call coverage was implemented such that all Neuroradiology studies at UIHC are now being interpreted by Neuroradiologists who have CAQ (Certificate of Added Qualification) credentials. Drs. Smoker, White, and Maley are currently joined by Dr. Yutaka Sato in accomplishing this mission. Use of the “on-call” Emergency Preliminary Report Forms has received positive feedback from residents and referring clinicians alike.

Beginning July 1, 2002, use of specific written objectives for each Neuroradiology Rotation (CT I and II, MR I and II) were implemented with “self-assessment” quizzes given at the end of the third week of each rotation. Although just implemented, resident feedback has been positive.

Section members have worked many hours with Steve Baker, our MR Administrator, to revamp MR protocols such that individual protocols for virtually all anatomic locations and clinical indications have now been completed. Clinicians have indicated this enables a high degree of examination consistency from patient to patient, residents indicate the benefits when protocoling studies, and the technologists relate that these protocols have significantly eased training new technologists.

We currently anticipate replacement and upgrading of our MR units and the capability of performing advanced MR studies on all scanners. These include functional imaging, diffusion/perfusion imaging, spectroscopy, and contrast-enhanced MR angiography, studies that are currently being performed on a limited basis under the direction of Dr. Matthew White.

Dr. Joan Maley continues to wear two “hats” as she currently serves as the Program Director for the Diagnostic Radiology Residency Program, a position that is very demanding of her time and efforts.

The part-time efforts of Dr. Bill Sickels have greatly eased the strain of our staffing shortages, and the participation of Dr. Yutaka Sato in our call coverage has been greatly appreciated.

We continue to actively recruit additional neuroradiologists to join our ranks, including both faculty and fellows. We are now entered into the National Match Program and are hopeful that the Neuroradiology fellowship program will begin rebuilding in July 2004.

Wendy R.K. Smoker, MD, FACR
Professor & Director of Neuroradiology Section

In August 2002, the Commission on Dental Accreditation approved the recommendation of the Review Committee for Oral and Maxillofacial Radiology and made the Iowa program a fully accredited Oral and Maxillofacial Radiology program. The program received preliminary provisional approval (PPA) in January 2001, based upon an extensive self-study document submitted to the Commission. This approval made the Iowa program one of the first to be accredited. This was the first site visit by the Commission to an oral and maxillofacial radiology program in the USA. The visit was very successful. There were no recommendations and two commendations for areas considered to be outstanding. This resulted in the recommendation for the full accreditation status that was granted at the August 2002 meeting of the Commission on Dental Accreditation. The program director for Oral and Maxillofacial Radiology is Dr. Axel Ruprecht, DDS, a member of the Department of Radiology.

Photo courtesy of T. Scott Krenz.
Welcome New Faculty!

LAURIE L. FAJARDO, M.D., assumed the position of Professor of Radiology and Chair of the Department effective July 2002. Most recently, she was a Professor of Radiology and the Vice Chair for Clinical Research at Johns Hopkins (1999-2002). Prior to this, she was an Associate Professor and Professor of Radiology, and the Vice Chair for Research at the University of Virginia (1994-1999) and an Assistant Professor and Associate Professor at the University of Arizona (1990-1994). She completed a Radiology Residency and Fellowship at the University of Arizona (1985-1990) and received her MD degree from the University of Chicago (1984). Dr. Fajardo and her husband, Richard Bird, have 2 sons, Joshua (age 12) and Jordan (age 2).

DAVID M. KUEHN, M.D., joined the Abdominal Imaging Section in August, 2002. After attending medical school and completing residency training at The University of Iowa, he spent five years in private practice in Fort Dodge, Iowa. He returns to Iowa City following the completion of a fellowship in abdominal imaging at the Mayo Clinic. His wife, Dr. Kelly S. Skelly, has joined the faculty at the Department of Family Medicine.

SEON-KYU LEE, M.D., joined the Section of Interventional Neuroradiology as an Assistant Professor in September 2002. He received his doctorate and PhD degree in Medical Science at the Seoul National University, Seoul, Korea. He completed his radiology residency in the Seoul National University Hospital and is certified by the Korean Board of Radiology. He had practiced as a staff neuroradiologist and an instructor in Gachon Medical School Gil Medical Center, Inchon, Korea for 3 years. Then he moved to Toronto, Canada and completed his 2-year clinical fellowship of Interventional Neuroradiology under the supervision of Dr. Karel terBrugge. He comes to Iowa City with his wife, Minnie Kim and their 2 girls (Seung-Eun; Stephanie, Ji-Eun; Jennifer) and a little boy (Sang-Won, Ryan).

In addition to our faculty appointments, we would also like to welcome the following Fellows and Visiting Associates

**BODY IMAGING**
Farajalla Hanna Al-Kass, M.D., Fellow
Krishna Rao Kylasa, M.B.B.S., Fellow
Eric D. Nelson, M.D., Fellow-Associate

**INTERVENTIONAL NEURORADIOLOGY**
Niranjan Ganeshan, M.B.B.S., Fellow
Shih-Wei Hsu, M.D., Visiting Associate
Carlos F. A. Santiago, M.D., Fellow

**MUSCULOSKELETAL**
Michael George, M.D., Fellow-Associate
Deborah R. Hellinger, D.O., Fellow-Associate
Laura M. Wike, M.D., Fellow-Associate

**NUCLEAR MEDICINE**
Joseph M. Floresca, M.D., Fellow

**New Nuclear Medicine Residents**
Twyla B. Bartel, D.O.  
*Oklahoma State University*

Shayne R. Squires, M.D.  
*University of Washington*

Ahmed L. Fathala, M.D.  
*Alexandria University, Egypt*
Tribute to

Edmund A. Franken, Jr., MD,
22 Years of Excellence in
Academic Radiology

Following a national search in 1979, Dr. Edmund A. Franken was appointed as Professor and Chairman of the Department of Radiology at The University of Iowa. He came to Iowa after serving for eight years as the Director of Radiology at the James Whitcomb Riley Hospital for children in Indianapolis.

During his relatively short tenure at Riley Hospital, Dr. Franken became nationally known as a premiere pediatric radiologist, a scholar and an outstanding teacher. He published a number of landmark scientific observations, and in 1975 authored a classic textbook on gastrointestinal radiology in pediatrics.

Dr. Franken’s leadership and vision quickly propelled the Department of Radiology at The University of Iowa into the first tier among academic departments. The faculty increased in size and capabilities. He led by example in the field of scientific inquiry after founding the Iowa Imaging Perception Laboratory, which has been continuously funded by NIH grants since 1986. This laboratory is internationally recognized for its studies in mathematical modeling in the field of perception. Dr. Franken also encouraged basic scientists to join the department and to establish their laboratories in the fields of respiratory physiology and radiation biology.

Dr. Franken never lost sight of the fact that radiology is a technology driven discipline, and he strove to keep Iowa at the cutting edge of innovation. It is hard to believe that a rural state like Iowa was among the first group to introduce every new technology in diagnostic imaging. CT was started at The University of Iowa as a requirement for all medical students. He also introduced fellowships to all the radiology sub-specialties. During his 17-year tenure as a Chairman and Interim Chairman, more than 215 residents and fellows completed their postgraduate training at Iowa.

Some of the many highlights of Dr. Franken’s career of service to radiology include: Presidency of The Society for Imaging Perception, Co-Chairman of the Radiology Task Force on Computer Literacy, the Virtual Hospital, which has become a major institutional initiative, and is recognized as one of the foremost medical information sites available on the web today. Dr. Franken promoted teaching of radiology to medical students and residents. With his efforts a radiology rotation became a training Demonstration Project.

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I should have been smarter when I was asked to prepare a short summary of Don Young’s professional career. The correct response should have been “no way” - it’s been too full, too diverse and too complicated to summarize in a short presentation. However, since I had already agreed to do it, here it is.

Don Young is a native Iowan of whom we can really be proud. He tells me the family’s name was originally Jung, but his father anglicized it to reflect the correct German pronunciation. After elementary school in a variety of small Iowa towns, and high school education in Ida Grove, Iowa, where his father was superintendent of schools, Don attended Drake University, and subsequently The University of Iowa, where he received his MD degree in 1955. In that era, all physicians became involved with military duties. Don was an intern in the U.S. Navy, and subsequently General Medical Officer in a naval installation in the Philippines.

In 1958, Dr. Young returned to Des Moines, where he was a family practitioner for nine years. Parenthetically, he has kept up his involvement with family medicine, remaining board certified in that specialty, and received several awards from the American Academy of Family Practice.

In 1967, Don made a real career change and became a radiology resident at UIHC. He was a member of the infamous group that included Hal Bergee, Bob Brown, and Bill Erkonen, among others. For the next twenty years, Don was in the private practice of Radiology and Nuclear Medicine in Des Moines, working principally at Lutheran and Broadlawns Hospitals. But he remained interested in, and participated in, a wide variety of educational activities, including a stint as Director of Medical Education at Iowa Lutheran, and giving numerous teaching conferences at Broadlawns, Lutheran, and other institutions in the Des Moines area.

Don is one of the few private practice physicians to have participated in, and been funded by, the NIH for serious research. Throughout his time in Des Moines, the National Cancer Institute, as an investigator in breast cancer detection, funded him for the Breast Cancer Detection Demonstration Project.

In 1990, another career shift occurred, and Don joined us on the faculty at The University of Iowa, College of Medicine, where he was in charge of the breast imaging program. In 1995, he was...
Honors and Awards

**Eric Hoffman, PhD**
Appointed Deputy Editor for *Academic Radiology.*

**Yutaka Sato, MD, FACR**
Elected Fellow of the American College of Radiology.

**Wendy Smoker, MD, FACR**
Selected to serve as a Board Examiner for the American Board of Radiology in June 2002.
Recipient of the American Board of Radiology’s Distinguished Service Award.

**William Stanford, MD, FACR**
Selected to serve as a Board Examiner for the American Board of Radiology in June 2002.

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**Franken continued from page 6**

Pediatric Radiology (Gold Medal 1999), service as International Visiting Professor of the RSNA in Kenya and Turkey, work as the first Roentgen Centennial Fellow in teleradiology and rural health services, Chairman of the Scientific Exhibits Committee of the RSNA, member of the Teaching and Executive Committees of the AUR, and of course Editor-in-Chief of Academic Radiology from 1997 until 1999. Most recently in May 2001, Dr. Franken was awarded the Association of University Radiologists prestigious “Gold Medal Award” for service and leadership to organized radiology. This was a fitting capstone to a long and distinguished career.

After an illustrious career at Iowa, Dr. Franken stepped down as Chairman in 1994. In 1998, he started phased retirement which lasted for only two years, at which time Dean Kelch recruited him to become the Interim Chairman, a position which he willingly accepted and held until June 2002, when Dr. Laurie Fajardo, M.D., assumed that position.

Dr. Franken’s positive influence on the Department of Radiology and on The University of Iowa Hospitals and Clinics will be everlasting and his legacy enduring.

*by Georges Y. El-Khoury, MD, FACR*
*Professor of Radiology*
*Mark J. Hingtgen, MPA*
*Assistant Director, UIHC*

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**Young continued from page 6**

promoted to Professor. He has continued in this role until the last few months, and still helps us out with training other faculty and staff for biopsies and other imaging procedures.

I won’t list all the honors and awards that Don Young has received. Some of the bigger ones include the Erskine Memorial Lecture Award from the Iowa Medical Society, serving as vice Chairman of the Radiology Section of the AMA, Fellow of the American College of Radiology, and life membership status in American Academy of Family Practice. My association with Dr. Young has been principally since his return to a faculty position at Iowa. He has been an industrious radiologist, always willing to help out wherever his talents are needed. He is beloved by the residents and technologists, as well as by the staff. A whole generation of young radiology residents has been trained in the right way to do breast imaging by Don Young. Don has even made time for a number of scientific papers. Most of these relate to detection of breast cancer. But he has also been involved with the AMA Council of Scientific Affairs as coauthor of subjects as diverse as female genital mutilation, reducing pesticide risk, colorectal cancer screening and genetically modified crops and foods.

All in all Dr. Young has had a multidimensional and successful career in medicine, mostly but not exclusively in radiology. I am glad to have the opportunity to honor him.

*by E.A. Franken, Jr., MD, FACR*
Teaching Awards 2001-2002

Medical Student Teaching Awards

SANJAY DAVE, M.D.
Medical Student Gillies Award

JEFF PETERSON, M.D.
Outstanding Resident Teacher for Medical Students

MAHEEN RAJPUT, M.D.
Outstanding Resident Teacher for Medical Students

BILL HESSON, M.D.
Resident Teacher of the Year

STANLEY PARKER, M.D.
Co-Teacher of the Year

CHARLES JACOBY, M.D.
Co-Teacher of the Year

BRAD THOMPSON, M.D.
Outstanding Clinical Teacher of the Year

Departmental Teaching Awards

MARK MADSEN, Ph.D.
Special Award for Teaching

YUSUF MENDA, M.D.
Special Award for Teaching

CHERYL RANDAL, M.D.
Resident Research Award

GEORGES EL-KHOURY, M.D.
Krabbenhoff Award for Excellence in Teaching

BILL HESSON, M.D.
Resident Teacher of the Year