

Vertebroplasty, Kyphoplasty Provide Rapid Relief For Patients with Vertebral Compression Fractures



Most patients referred to Virginia Interventional and Vascular Associates (VIVA) for vertebroplasty or a related procedure, kyphoplasty, experience rapid pain relief from vertebral compression fractures. Interventional radiologists use imaging guidance to inject medical-grade bone cement into the fractures, thereby stabilizing the collapsed vertebra.

“Many of our patients have complete relief immediately after the procedure, and most have relief within 48 hours,” said R. Donald Doherty Jr., MD, of VIVA, the interventional radiology and vascular surgery division of Radiologic Associates of Fredericksburg.

Dr. Doherty and Dr. John McLaughlin of VIVA have performed the same-day procedures for more than 291 patients since September

2003, with 471 vertebral bodies treated. Both doctors are board-certified interventional radiologists with training in vertebroplasty and kyphoplasty.

Patients are referred to VIVA by orthopedic surgeons, neurosurgeons, family practitioners, and internists and, in some cases, are self-referrals. The typical patient is an elderly female with osteoporosis whose pain from compression fractures has not responded to conventional therapies, such as bed rest and analgesics. Patients with compression fractures due to bone tumors, trauma, or “soft” bones from long-term steroid use or other conditions also are candidates.

Studies have demonstrated that the procedures offer long-term pain relief with a low complication rate, according to the Society of Interventional Radiology (SIR). One recent landmark study, published in *The Lancet* March 21, 2009, compared the efficacy and safety of kyphoplasty with non-surgical care in a randomized controlled trial involving 300 patients at 21 sites in eight countries. The study assessed patients one month after the procedures and found that patients receiving kyphoplasty experienced 2.5x greater improvement in performing daily activities and 3x faster pain relief than non-surgical patients. The frequency of adverse effects was comparable and low in both groups.

“Our findings suggest that balloon kyphoplasty is an effective and safe procedure for patients with acute vertebral compression fracture and will help to inform decisions regarding its use as an early treatment option,” the authors wrote.

The study should encourage physicians to consider these procedures among first-line treatments for vertebral compression fractures, according to Dr. Doherty.

“Typically, patients with compression fractures experience a downward spiral. If they have a back fracture and are in pain, they cannot take care of themselves, and

Imaging Update

New Picture Archive Communication System Bridges Distance

Radiologic Associates of Fredericksburg (RAF) is launching a new Picture Archive Communication System (PACS) this fall. It will enable radiologists and clinicians to view complex medical images and reports from any location with internet connections.

“This new system helps radiologists diagnose patients more effectively and provides instant access of medical images and results to our referring physicians. It gives radiologists a new tool to provide our imaging expertise to any medical office with standard internet access,” said Neil Green, MD, RAF radiologist and physician director of Nuclear Medicine and PET imaging for Medical Imaging of Fredericksburg (MIF).

The new system is RAF’s latest involvement with PACS technology. PACS debuted locally in 2001 when MIF introduced a first-generation system to improve turnaround and storage of medical images. In 2003, Mary Washington Hospital joined in on the use of this technology. That system was replaced with a next-generation PACS in 2005 and has been enhanced significantly. It runs on MediCorp’s high-speed network.

The PACS used by the hospital and its partner medical imaging facilities does a “wonderful job handling images within the enterprise,” Dr. Green said, but there are limitations to its reach. “It is difficult for radiologists to move through images quickly when working remotely, without a high-speed connection. If a facility outside the enterprise

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Picture Archive System continued page 3

Vascular Surgeon Joins Practice



Virginia Interventional and Vascular Associates (VIVA) and its parent group, Radiologic Associates of Fredericksburg (RAF) Ltd., announce that Victor J. D'Addio, M.D., FACS, has joined the practice. Dr. D'Addio is the Fredericksburg area's only board-certified vascular surgeon. Together, the practice offers streamlined services for vascular patients and referring physicians – from office-based vascular testing to minimally invasive treatments and traditional surgery.

Dr. D'Addio has practiced in the Fredericksburg area since 2005. He continues to care for his vascular patients at VIVA, and serve as medical director of the Rappahannock Wound Healing Center.

VIVA's interventional radiologists perform minimally invasive, targeted treatments through the use of image guidance. RAF's diagnostic radiologists cover all medical imaging subspecialties.

"The addition of Dr. D'Addio to the practice blends the expertise of interventional radiology, vascular surgery and diagnostic radiology to improve care for patients with vascular conditions," said Dr. Michael P. McDermott of VIVA. The practice provides the following procedures:

- Integrated diagnostic and treatment capabilities
- Minimally invasive and traditional surgical treatments for the entire spectrum of peripheral vascular disease
- State-of-the-art minimally invasive therapies for varicose veins and spider veins, by physicians who are fellowship-trained
- Open and endovascular surgery, carotid endarterectomy, surgical aneurysm repair, surgical bypass, dialysis access, vein phlebectomy, radiofrequency ablation, endovenous laser therapy and sclerotherapy.

For more information contact Victor J. D'Addio, MD at daddio@vivassociates.com or Michael P. McDermott, MD at mcdermott@vivassociates.com or call (540) 361-1000 and leave a message.

Radiologist Spotlight

RAF Hires Four New Radiologists

Radiologic Associates of Fredericksburg has added four board-certified radiologists to its practice, which now totals 29 physicians with extensive training covering all medical imaging subspecialties.

Ed Swager, chief executive officer for RAF, attributes the practice's recent growth to a number of factors.

"We are expanding services to a growing population while, at the same time, compensating as senior partners have reduced their hours," he said. "RAF radiologists provide 24/7 coverage to Mary Washington Hospital and Stafford Hospital Center, as well as four medical imaging centers and our outpatient center for Virginia Interventional and Vascular Associates."

"Hiring top medical talent also allows RAF to continue our tradition as an early adopter of proven technologies," Swager added. "Our radiologists introduced virtual colonoscopies to the area more than two years ago, for example, and also were early adopters of digital mammography. Our interventional radiology and vascular specialists perform cutting-edge procedures ranging from uterine fibroid embolizations (UFEs) to aortic stent grafts."

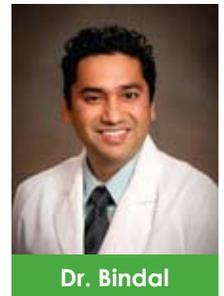
RAF's four newest radiologists are Drs. Joseph M. Bestic, Vishal Bindal, John D. Gleason, and Narinder Sethi.



Dr. Bestic

Dr. Joseph M. Bestic earned his medical degree from The Ohio State University in 2003. He completed his residency training in diagnostic radiology at the Mayo School of Graduate Medical Education, in Jacksonville, where he also received fellowship training in musculoskeletal imaging. He received several awards including the Resident Award for Excellence in Medical School Training and The Baker Fund Resident Research Award.

Dr. Vishal Bindal earned his medical degree from Duke University School of Medicine in 2001. He completed his residency in diagnostic radiology at the University of Medicine & Dentistry of New Jersey, Robert Wood Johnson University Hospital in Brunswick, then returned to Duke for fellowship training in neuroradiology in CT, MRI and interventional pain management procedures. Dr. Bindal has vast research experience and has written several articles in medical publications.



Dr. Bindal



Dr. Gleason

Dr. John D. Gleason earned his medical degree from Harvard Medical School in 2003. He finished his residency training in diagnostic radiology at the University of Michigan. He then completed his vascular and interventional radiology fellowship training at the Baptist Cardiac & Vascular Institute in Miami. Dr. Gleason has written several articles in medical publications and has presented information at numerous medical conferences.

Dr. Narinder Sethi earned his medical degree from Virginia Commonwealth University School of Medicine in 2003. He completed his residency training in diagnostic radiology at the Medical College of Virginia (MCV), where he was named the outstanding resident for class of 2008. He also received his fellowship training in MRI from MCV. ■



Dr. Sethi

For more information contact Ed Swager, chief executive officer, at eswager@rafadmin.com or Irene Valentino, RAF project manager, at ivalentino@rafadmin.com or call (540) 361-1000.

To make suggestions for future stories, contact Irene Valentino at (540) 361-1000 or ivalentino@rafadmin.com.



VIVA's Dr. Gleason views images using PACS.

wants to share an image with us at the hospital and MIF facilities, they have to still send us CDs or hard copy films," noted Dr. Green.

RAF's new PACS will augment the system used within the hospital and partner medical imaging facilities. The RAF PACS system, developed by RamSoft, Inc., will enable radiologists and clinicians to send, receive, view, and store medical images with relative ease from virtually any internet connection, regardless of its speed, Dr. Green said. With the proper software, medical images can be viewed via a secure internet web site in a physician's own office or off site location.

PACS Impact Felt Locally

Dr. Green has been involved with PACS technology since its introduction locally. He said PACS, combined with technologies such as voice-to-text recognition software, has enabled RAF to achieve paperless exams and worklists, which have resulted in a number of benefits. The technology:

- Removes barriers that prevent sharing images with other clinicians.
- Allows radiology sub-specialists to interpret images from miles away.
- Speeds turnaround of reports from hours to minutes for critical cases.
- Enables instant comparison of prior exams.
- Eliminates the physical storage concerns associated with housing "hard" copies, like X-ray film.
- Improves clinical imaging capabilities. Exams with a large amount of images such as PET-CT scans or Cardiac CT scans, for example, aggregate tremendous amounts of data that would be impossible to support using films alone, Dr. Green explained.

Local System a Vendor Show Site

The next-generation PACS used by the hospital and its partner medical imaging facilities has been enhanced significantly in recent years.

The system incorporates add-on software that allows radiologists to obtain 3-D images of patients so surgeons and referring physicians can more readily envision their patients' conditions. For example, 3-D images from CT scans of the heart can sometimes eliminate the need to schedule an invasive procedure such as catheterization, Dr. Green said. It also enables radiologists to perform "virtual colonoscopies" using images that provide a visual fly-through of the colon.

The local PACS team also worked with a vendor to create its own communications program addressing radiology workflows and operations.

"Our PACS and add-on software provide a comprehensive workflow beginning from the time the patient is imaged, and diagnosed by the radiologist, to the point critical communications are made with the referring physician, and results are sent to his or her office. We have been recognized for our workflow efficiency by Philips Medical and have been visited by representatives of hospitals and outpatient centers across the country who wish to develop similar, efficient facility processes," Dr. Green said.

Additionally, the system has been enhanced with add-on worklist sorting software developed by Primordial. This software flags high-priority cases. High-priority images are read first. Then, the system alerts clerical staff to fax high-priority reports quickly to referring physicians or get them on the phone for a direct consultation, Dr. Green said. ■

For more information, contact Neil Green, MD at neil.green@medicorp.org or call (540) 361-1000 and leave a message.

there is a continuous loss of independence and capabilities. If the medical community intervenes early, we can interrupt this spiral and get patients back on their feet," Dr. Doherty said.

Recently, two studies in the *New England Journal of Medicine* August 6, 2009 showed vertebroplasty to be equivalent to a placebo control arm using a local anesthetic. SIR and the Society of NeuroInterventional Surgery are analyzing the studies and plan to respond in a future issue of the *NEJM*, according to a statement by SIR. Dr. Doherty said a number of interventional radiologists are concerned that patients who participated in the recent studies were much more ambulatory than patients typically treated with vertebroplasty. There also have been questions about the small size of the study groups, noted SIR.

Procedure Overview

VIVA's doctors perform the minimally invasive procedures in the radiology operating suite at Mary Washington Hospital. The procedures are similar, but kyphoplasty also involves the use of tiny balloons to decrease curvature of the back, Dr. Doherty said. The balloons are removed before injecting the fracture with medical-grade bone cement.

Patients receive conscious sedation before the procedures. Then the interventional radiologist inserts a needle through the skin and, with the aid of X-ray images, guides the needle into the fractured vertebra. The interventional radiologist then injects bone cement into the site of the fracture. The entire procedure takes from one to two hours to perform in cases involving three or fewer bones, Dr. Doherty estimated. The cement hardens within 15 minutes, creating what has been likened to an "internal cast" that stabilizes the fracture.

Patients are discharged the same day, and can usually return to normal activities immediately. Most insurance plans cover vertebroplasty and kyphoplasty, SIR reports.

Contraindications for the procedure are relatively few, but include severe fractures with neurological complications and active infections. ■

For more information, contact R. Donald Doherty Jr., MD at doherty@vivassociates.com or John J. McLaughlin, MD at mclaughlin@vivassociates.com or call (540) 361-1000 and leave a message for the doctors.

www.imagingway.com
(540) 361-1000

Ed Swager, Chief Executive Officer

Radiologic Associates of Fredericksburg (RAF) is the largest provider of medical imaging services in the Fredericksburg, Stafford and Spotsylvania area. RAF's interventional radiology and vascular services group, Virginia Interventional and Vascular Associates (VIVA), performs minimally invasive procedures, vascular lab studies and vascular surgery.

RAF publishes *Imaging Advances* periodically for referring physicians and the greater medical community. For more information, please contact Irene Valentino, RAF Project Manager, ivalentino@rafadmin.com, (540) 361-1000.

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Referring Physician Resources

Vascular Lab Services Remain Same Following VIVA Acquisition of VVI

Virginia Interventional and Vascular Associates (VIVA) acquired Virginia Vascular Imaging this year. Though the name has changed, the phone number, location and vascular lab services remain the same.

Virginia Interventional and
Vascular Associates
(540) 654-9118
1201B Sam Perry Blvd., Suite 265
Fredericksburg VA 22401
(Next to Mary Washington Hospital)

VIVA vascular lab tests include vascular ultrasound and arterial doppler. They can help detect:

- peripheral arterial disease
- carotid artery disease
- abdominal aortic aneurysms
- deep vein thrombosis and varicose veins
- other vascular conditions

VIVA is committed to providing high quality responsiveness and trusted results. VIVA technologists who perform lab tests have passed board exams of the American Registry of Diagnostic Medical Sonographers to become Registered Vascular Technologists (RVTs). VIVA is accredited by the Intersocietal Commission for the Accreditation of Vascular Laboratories. Vascular lab tests are interpreted by VIVA's board-certified interventional radiologists and vascular surgeon.

We welcome any suggestions you may have for improving our vascular lab services. You may also wish to visit our Web site www.imagingway.com for additional information. VIVA is part of Radiologic Associates of Fredericksburg.

Stephanie Nichols,
Registered Vascular Technologist