ImagingAdvances

RAF RADIOLOGIC ASSOCIATES OF FREDERICKSBURG

viva Virginia Interventional & Vascular Associates

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When Minutes Count, Medical Imaging Tests Aid Rapid Stroke Response

Fast medical imaging tests are critical for accurate stroke diagnosis and treatment. Armed with the results of computed tomographic (CT) scans, radiologists support medical response teams to help determine whether a patient has suffered a stroke or has another condition mimicking the symptoms.

Radiologists can also detect whether the patient has significant brain bleeding and other issues affecting treatment options, explained Edward C. Hwang, MD, MBA, a board-certified, fellowship-trained neuroradiologist with Radiologic Associates of Fredericksburg (RAF). Dr. Hwang is one of the RAF radiologists who works closely with the stroke team at Mary Washington Hospital.

Radiologists also use magnetic resonance imaging (MRI) tests to estimate the time that the stroke began if a patient awakened with symptoms – vital information that allows the medical team to provide the right treatments, when they are needed.

For example, a blood clot–busting enzyme called tissue plasminogen activator (tPA) can improve the chances of recovering from a stroke if administered within three to four and a half hours after the onset of symptoms, added Dr. Hwang.

"The use of radiology and expertise of our radiologists have allowed us to determine which stroke patients will benefit from the treatments we have available to us today," said Arun Chhabra, MD, stroke director for Mary Washington Hospital.

Rapid Response

The most common type of stroke, occurring in an estimated 87% of cases, is an ischemic stroke, which happens when an artery supplying blood to the brain becomes blocked, usually by a blood clot. The second type of stroke is a hemorrhagic stroke, when an artery in the brain leaks or bursts.

Mary Washington Hospital has been designated a Primary Stroke Center by the Joint Commission. When a patient arrives at the hospital with a suspected stroke – a "Code Neuro" – the medical team orders a non-contrast CT scan of the head, Dr. Hwang said. The scan combines X-ray and computer capabilities to produce cross-section images of the brain, which can reveal damage from a stroke or other conditions.

RAF physicians provide on-site radiology services to the hospital 24/7. In a suspected stroke case, the technologist performing the scan informs radiologists of the case so a radiologist can quickly evaluate test results and alert the stroke team of preliminary findings.

One of the quality metrics for a stroke center is the goal of obtaining a head CT interpretation in 45 minutes or less after a Code Neuro patient arrives at the emergency department, Dr. Hwang noted. In 2016, RAF achieved this goal 99.25% of the time, better than the national benchmark of 90%.

Rapid Stroke Response continued page 3

Stroke Prevention Services Available

From ultrasound tests to complex vascular procedures, Virginia Interventional & Vascular Associates (VIVA) provides patients with comprehensive services that assist in preventing strokes.

One of the main causes of stroke is carotid artery stenosis, which is a buildup of plaque in the carotid artery in the neck supplying blood to the brain. VIVA offers screening, diagnosis, and management for this condition. Three of the procedures available for stroke prevention are carotid endarterectomy, carotid stenting, and carotid duplex ultrasound testing.

Carotid endarterectomy is an open surgical procedure that removes the blockage to help prevent a stroke. Larry Koenig III, MD, and Victor J. D'Addio, MD, FACS, are board-certified, fellowship-trained vascular surgeons with VIVA who perform the surgery at Mary Washington Hospital.

Dr. Koenig said patients considered for the surgery either have had a previous stroke, suffered a transient ischemic attack (TIA), which is a warning stroke that usually does no permanent damage, or have a blockage identified through medical imaging tests.

Stroke Prevention continued page 2

PHOTO BY DAN DONEHEY

Dr. Larry Koenig, vascular surgeon with VIVA.

Referring Physician Resources

Online Support for ICD-10 Codes, Other Needs

Information on ICD-10 billing code requirements for medical imaging is now available on our websites along with other helpful resources for referring physician practices.

Ed Swager, CEO of Radiologic Associates of Fredericksburg (RAF), noted that the grace period for specificity rules for the new ICD-10 codes expired in October and the Centers for Medicare and Medicaid Services are enforcing the codes for processing claims. One requirement is specifying the laterality of a procedure, for example, which side of the body is being imaged. More importantly, use of unspecified codes and absence of complete specificity will result in claims being denied.

The physicians' sections of the RAF, Virginia Interventional & Vascular Associates, and Medical Imaging websites also have additional resources. Topics include reviewing images remotely, radiation safety management, pre-medication protocols for IV contrast, scheduling exams/consultations, and insurance plans.

Referring physician's offices with questions can also call the RAF Physician Concierge at 1-855-RAF-LINE.

Helpful Links

Radiologic Associates of Fredericksburg
rafimaging.com > For Physicians

Virginia Interventional & Vascular Associates
vivassociates.com > For Physicians

Medical Imaging of Fredericksburg
http://mifimaging.com/physicians-resources/

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Though they occur in a relatively small number of cases, there is a risk that a patient could have a stroke during surgery. The Society for Vascular Surgery estimates that strokes occur in 2–3% of patients with no pre-procedure symptoms, and in 5–7% of patients who have had a previous stroke, mini-stroke, or TIA.

VIVA physicians have a high success rate with the procedure and perform roughly 75–100 of the surgeries a year, Dr. Koenig noted.

"Once the procedure is done, the risk of having a stroke suddenly drops. It almost resets the clock for the patient," he said.

After a brief hospital stay, patients return to VIVA's outpatient facility periodically for follow-up appointments. There, painless carotid duplex ultrasound testing can help detect whether or not the patient has developed additional blockages requiring medical attention.

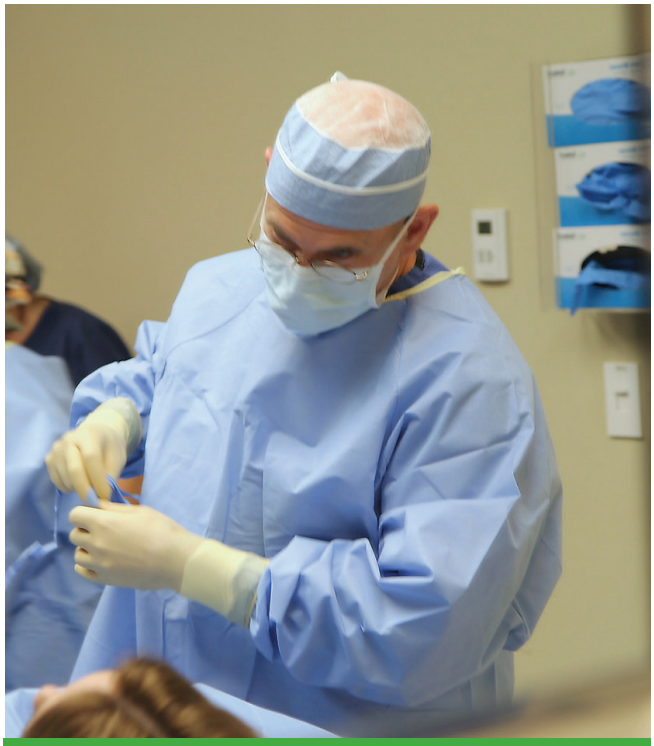

PHOTO BY DAN DONEHEY

Dr. Victor D'Addio, a vascular surgeon with VIVA, prepares for a procedure.

Carotid stenting is an alternative to endarterectomy for patients who are poor candidates for open surgery based on their physical condition or anatomy, Dr. Koenig noted. It is less invasive than open surgery and successful in most cases but also carries a small risk of stroke.

The vascular surgeon makes a tiny incision in the patient's thigh and threads a catheter through the femoral artery to the carotid artery in the neck. There, a small wire stent is placed over the blockage to keep the artery open.

Dr. Koenig performs carotid stenting procedures at Mary Washington Hospital. In a recent case, Dr. Koenig recalled, a man who had a carotid endarterectomy elsewhere more than a decade ago was admitted to the hospital for an unrelated condition and then suffered a TIA before his planned discharge. After a computed tomographic (CT) scan of his neck revealed that the patient had developed another severe carotid blockage, Dr. Koenig successfully performed a carotid stenting to reopen the artery.

Carotid stenting patients also are monitored through follow-up appointments at VIVA's outpatient facility. There, patients who are suspected of having carotid blockages or are being monitored for them are tested by registered vascular technologists in VIVA's accredited vascular lab.

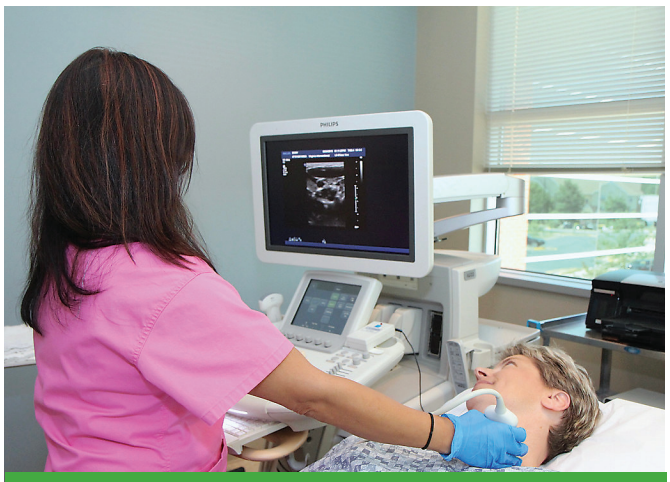

PHOTO BY DAN DONEHEY

Ver Sandoval, a registered vascular technologist at VIVA, performs a carotid ultrasound.

A transducer is placed against the patient's neck, enabling the carotid duplex ultrasound technology to "see" and "hear" the carotid artery blood flow. The patient's VIVA physician then interprets the results and discusses them with the patient or with the referring physician involved in the case.

For more information, call VIVA at (540) 654-9118 or visit vivassociates.com. ■

Rapid Stroke Response continued from page 1

In one case reported by the hospital, a 43-year-old who was rushed by ambulance with a suspected stroke was administered tPA after the results of her CT scan came back. "Within thirty minutes, thanks to the rapid reactions of everyone involved and the Mary Washington Hospital Stroke Team, [she] went from not being able to move at all on her right side or to speak, to being able to move her hands, feet, and legs. She bears no side effects from the stroke," according to the hospital's report.

"Non-contrast head CT is the most widely used imaging study in patients with acute stroke due to its speed and availability. CT can show signs of early infarction, and CT can detect intracranial hemorrhage, which is a contraindication for tPA," Dr. Hwang added. "The scan may also indicate stroke mimics, such as a brain tumor."

Right after the head CT scan, a CT angiogram (CTA) test focusing on the blood vessels of the head and neck is often performed to evaluate for a blood clot. During a CTA, contrast is injected intravenously into the patient to highlight the blood vessels. The radiologist interprets the results and alerts the stroke team to findings, including any that suggest that the patient might benefit from procedures such as clot retrieval surgery.

A different medical imaging test comes into play when patients awaken with symptoms or are unsure when their stroke began: an MRI evaluating for diffusion-weighted imaging – fluid-attenuated inversion-recovery mismatch, or DWI-FLAIR mismatch for short. MRIs use a magnetic field and radio waves to create detailed images of the organs and tissues.

"The importance of radiology in stroke response is particularly evident if the patient was sleeping when symptoms started or is unable to communicate with us," noted Dr. Chhabra. "MRI enables us to estimate the time someone had their stroke, which is of utmost importance for tailoring treatments accordingly."

With this MRI protocol, the DWI sequence of the test looks for shifts in water molecules in the brain that can occur after a stroke. The FLAIR sequence evaluates stroke damage (lesions). By comparing DWI and FLAIR results, radiologists can estimate the time frame when the stroke began, Dr. Hwang said. Research studies have shown that in cases where DWI shows the telltale water molecule shift but FLAIR does not reveal stroke damage, for example, the likelihood is strong that the stroke is less than four and a half hours old. Another test, an MRI angiogram (MRA), is also added in these cases to look for blood clots.

Other tests and treatments may also be needed, depending on the patient's condition. For more information, visit the following resources.

RAF neuroradiology
http://www.rafimaging.com/services/brain-spine-imaging

RAF diagnostic procedures
http://www.rafimaging.com/patients/procedures/diagnostic

Mary Washington Hospital stroke program
https://www.marywashingtonhealthcare.com/Our-Services/Brain-Health/Stroke.aspx

American Stroke Association
http://www.strokeassociation.org ■

Speed is Key in Stroke Recovery

If you or someone you know experiences these stroke symptoms, immediately call 911 for emergency medical help. Fast treatment can improve the chances of survival and reduce long-term disabilities.

Source: American Stroke Association

Dr. Christopher M. Meyer Elected President of RAF

Christopher M. Meyer, MD, has been named president of Radiologic Associates of Fredericksburg (RAF). RAF physicians serve patients at Mary Washington Hospital, Stafford Hospital, Medical Imaging of Fredericksburg, LLC, RAF's interventional radiology practice Virginia Interventional & Vascular Associates, and offices in Richmond and Northern Virginia.

Dr. Meyer succeeds David L. Glasser, MD, who was president for two four-year terms, the maximum allowed under practice rules.

In his new role, Dr. Meyer is involved in alignment and integration initiatives, with programs involving area referring physicians, and with the RAF administrative team headed by CEO Ed Swager on finance matters and practice opportunities. He is also continuing his duties as a board-certified, fellowship-trained diagnostic radiologist who interprets body imaging and women's imaging.

"I am honored and humbled that the group selected me as their president," Dr. Meyer said. "Dr. Glasser has led the practice through eight years of change and growth with integrity, vision, and strong leadership ability. I certainly have big shoes to fill. We also have a strong administrative team led by Ed Swager. I foresee continuing Dr. Glasser's work, enhancing our working relationship with Mary Washington Healthcare, and pursuing growth opportunities inside and outside our region."

Swager noted that Dr. Meyer is highly qualified for the new role. "Based on Dr. Meyer's leadership with RAF and the hospital, we felt he would be an ideal choice for continuing Dr. Glasser's great accomplishments," he said.

A native of Richmond, Dr. Meyer received his medical degree from Medical College of Virginia. He completed his internship and radiology residency training at Emory University in Atlanta, followed by a fellowship in body imaging. Dr. Meyer joined RAF in 2004, bringing to the group expertise in body imaging, virtual colonoscopy, and radiation safety. He became a partner in 2007 and over the years has served as vice president of the practice, a member of the board of directors, chair of the operations committee, and as a member of the finance, and nomination and bylaws committees.

During his years at RAF, Dr. Meyer was also chairman of the Mary Washington Hospital department of radiology and chief of diagnostic and support services for the hospital. Also, he was physician coordinator of the Image Gently Campaign, an initiative that has increased awareness of opportunities to lower radiation dose when imaging children.

He and his wife Dr. Leslie Meyer, a local obstetrician-gynecologist, have three children: Jessica, Joseph, and Allison.

www.rafimaging.com
www.vivassociates.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 & 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 Tammy Gressly, RAF Project Manager, tgressly@rafadmin.com, (540) 361-1000.

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Radiologist Spotlight: John D. Gleason, MD

Growing up in Grosse Pointe, Michigan, just outside Detroit, John Gleason gravitated toward biology courses and pursued his goal of becoming a physician. Today he is a board-certified diagnostic and interventional radiologist with Radiologic Associates of Fredericksburg (RAF).

The career choice was a natural one, as health care is his family's business. He is the son of a dentist and a nurse, while one sister is an ObGyn and the other a nurse practitioner.

Dr. Gleason studied chemistry at Boston College and went on to the top-ranked Harvard Medical School.

"Halfway through Harvard, I was introduced to interventional radiology. I knew that's what I wanted to pursue," he said. "It's just the right balance between the two sides of radiology: as a diagnostician and as a provider of direct patient care."

After completing his radiology residency at the University of Michigan, and his fellowship in interventional radiology at Miami Cardiac & Vascular Institute in Miami, Florida, he joined RAF in 2009.

Dr. Gleason specializes in all aspects of interventional radiology, which includes the treatment of peripheral arterial disease, varicose veins, and minimally invasive treatments for cancer. Along with evaluating and treating patients at RAF's Virginia Interventional & Vascular Associates (VIVA) practice, he also serves patients at Mary Washington Hospital and Stafford Hospital.

"In today's health care world, 'patient-centered care' is the mantra," Dr. Gleason said. "VIVA surely reflects that value. We are laser focused on the needs, comfort, and choices of our patients."

Board certified by the American Board of Radiology in diagnostic and interventional radiology, Dr. Gleason is a member of several professional organizations, including the Society of Interventional Radiology, where he serves on the national membership development committee. He is also a member of the American College of Radiology and the Radiological Society of North America.

Dr. Gleason met his wife, Shelby, a West Virginia native, during his residency. She, too, has a health care background, having served as an administrator at Henry Ford Health System in Detroit. They married in 2007.

Dr. Gleason and family

"We wanted to settle down in a family-friendly community close to Shelby's roots," Dr. Gleason said. "Fredericksburg has it all."

The Gleasons have two children, three-year-old Patrick and one-year-old Callie. A miniature schnauzer, Maizey Blue, is the family's fifth member. Named after the school colors of University of Michigan, she's a daily reminder of the Gleasons' favorite team. ■