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Time Is Brain

A MIRACLE MEDICAL PROCEDURE COMES TO VERO BEACH

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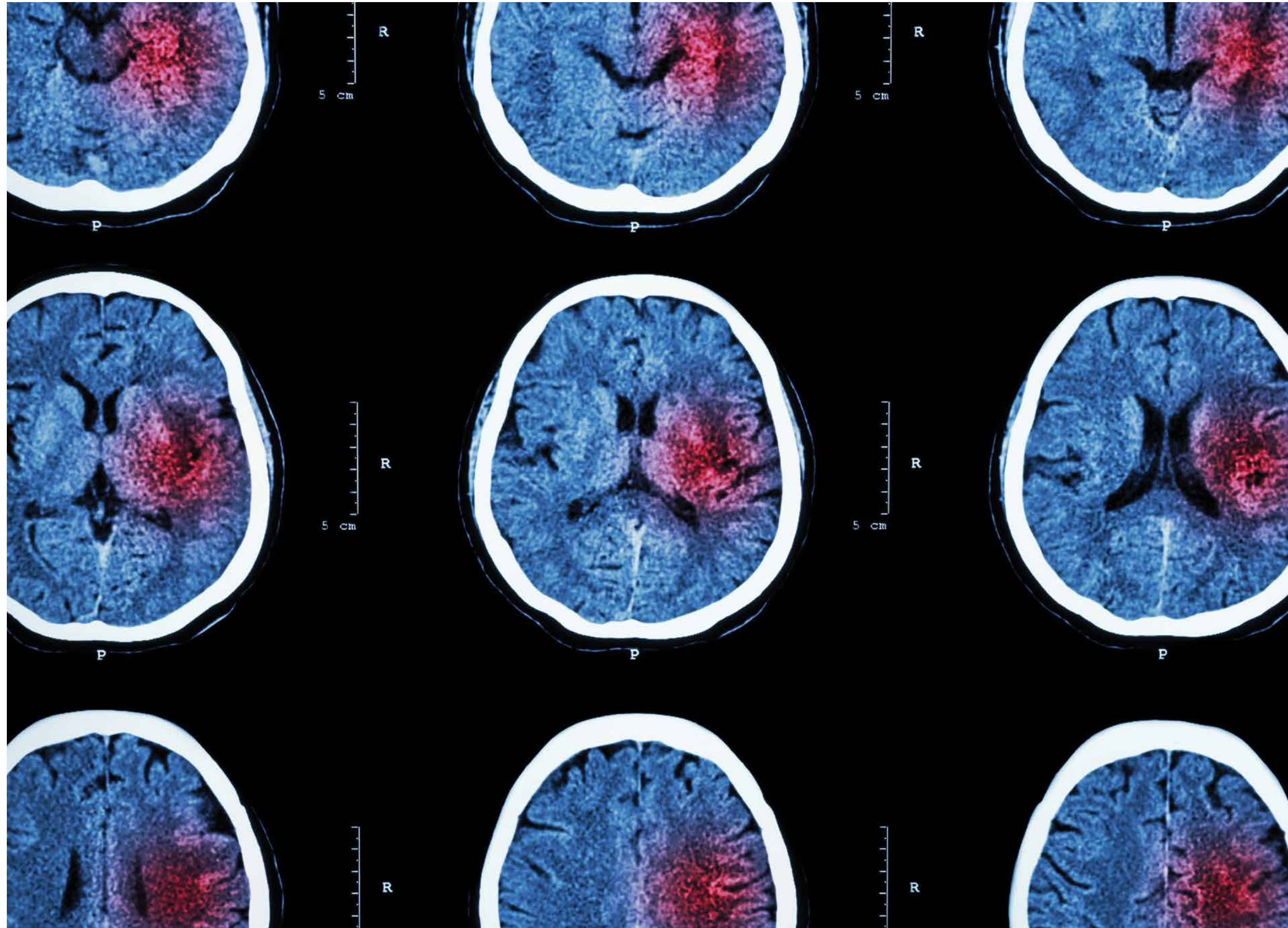
On July 29, 2018, at 10:30 p.m., a momentous event occurred at Indian River Medical Center. The first stroke thrombectomy, an emergency removal of a blood clot from an artery in the brain, was performed by interventional neurologist Dr. Vikas Gupta. This innovative procedure involves threading a catheter through an artery in the groin up into the brain and using a stent retriever to remove the clot through the groin.

In a greatly fortuitous happening for Vero Beach, Indian River Medical Center has partnered with the Arubah Neuroscience Institute to create a state-of-the-art stroke facility capable of treating the most complex cerebrovascular diseases.

In 2018, three brilliant doctors brought the Arubah Neuroscience Institute to Indian River Medical Center with its revolutionary thrombectomy procedure. Drs. Akram Shhadeh and Ayman Gheith founded the institute in 2015, and Dr. Gupta joined them the following year. Gupta says, "The Arubah Neuroscience Institute is a culmination of partnership between three neurology specialists with fellowship training in three complex fields: neurocritical care, vascular neurology and intervention neurology/endovascular surgical neuroradiology. The institute offers diagnosis and treatment of patients with complex cerebrovascular disorder."

Every year, 795,000 people in the United States suffer a stroke. Of that number, 140,000 die. A stroke occurs in the U.S. every 40 seconds.

An ischemic stroke is a sudden interruption of the blood



CT scan images of the brain showing stroke activity



Vikas Gupta, M.D., interventional neurologist; Brianna Parker, DNP, ARNP; and Jennifer Adkins, interventional radiology technician, discuss images on the digital screen that help guide the doctor while performing a stroke thrombectomy.

supply to the brain; 87 percent of all strokes, both ischemic and hemorrhagic, are caused by a blood clot that blocks arteries leading into the brain. This type of stroke is called an ischemic stroke. A hemorrhagic stroke occurs when an artery in the brain ruptures. A TIA, or transient ischemic attack, is a temporary blockage or reduced flow of blood to the brain. Also called a mini-stroke, the attack typically lasts only five or 10 minutes. It can be a warning sign of an imminent serious stroke.

IRMC is currently designated as a primary stroke center by The Joint Commission. The Stroke Center at IRMC is moving quickly toward their goal to earn the highest designation: comprehensive stroke center. This will entail a huge upgrade in capabilities and treatment options, including the ability to handle brain aneurysms, arteriovenous malformation and other types of cerebrovascular diseases.

Since starting in July 2018, the neurointerventional program has treated more than 225 patients, at least 11 of whom have received lifesaving thrombectomy procedures, using the existing space in the hospital. A new ultra-modern facility is planned: a multi-million-dollar neurointerventional

Dr. Gupta performed the initial brain thrombectomy at IRMC on July 29, 2018.



Interventional neurologist Akram Shhadeh, M.D., removes a blood clot from the brain through a catheter threaded through the groin.

suite with the latest equipment and a specially trained staff to care for cerebrovascular patients before, during and after the procedures.

When asked about the fit with IRMC, Dr. Shhadeh, president of Arubah Neuroscience Institute and IRMC Neurocritical Care director, says, "After connecting with the IRMC administration, we recognized how passionate they are about patient care and how willing and supportive to allocate whatever resources are needed to help us, the physicians, to provide the best care possible. They also have a long-term vision that matches our vision; IRMC is one of the rare institutions where they put providing excellent care ahead of any other goals, not only by words but with actions. This is a perfect match with us. In a show of good faith for us, the hospital has already purchased a highly sophisticated scanning machine: a CT scanner capable of performing advanced perfusion imaging for a selection of patients best suited for thrombectomy intervention."

In discussing the new stroke center, Shhadeh uses the phrase "Time is brain," explaining that delays in getting a stroke victim to a comprehensive stroke center can result

in irreversible neurological damage or fatality. Without the proper blood and oxygen supply to the brain, two million neurons die every minute. A highly trained medical team can provide interventional treatment, including what is known as IV tPA. This involves an IV in the arm to deliver tissue plasminogen activator to dissolve the clot and quickly improve blood flow to the brain tissue.

Shhadeh explains, "The two main reasons for a patient's delay in reaching the appropriate stroke center is the failure of a patient or family member to recognize stroke symptoms and/or the failure of Emergency Medical Services to bring the patient directly to a comprehensive stroke center rather than initially to a lower grade stroke facility."

According to Shhadeh, the key to recognizing a stroke is to apply the mnemonic "FAST," an acronym for four major stroke symptoms: Facial drooping — a section of the face, usually only one side, that is drooping and hard to move, resulting in a crooked smile; limb weakness — any weakness or numbness in any limb; speech difficulties — a partial or total inability to understand or produce speech; and time — to call emergency services. If one or more of the symptoms



Akram Shhadeh, M.D., in the angiography suite



Brianna Parker, DNP, APRN, and Ayman Gheith, M.D., examine images in the angiography suite.



Ayman Gheith, M.D., in the angiography suite

“Our slogan is ‘compassionate and comprehensive care.’”

– DR. AYMAN GHEITH

“I am fascinated with the complexity of brain function, anatomy and blood supply.”

– DR. AKRAM SHHADEH

above are present, time is of the essence. One must call 911 and go to the hospital immediately.

When asked why he went into the very select field of neurointerventional medicine, Shhadeh responds, “I am fascinated with the complexity of brain function, anatomy and blood supply. Interventional neurology is one of the rare specialties that dramatically changes patient outcome from very poor to excellent recovery in very fast fashion with minimal side effects. It enables us to treat previously non-treatable and life-threatening cerebrovascular conditions.”

Dr. Gupta has in-depth training in neurocritical care,

vascular neurology, and interventional neurology/endo-vascular surgical neuroradiology. After earning his medical degree from the University of Calcutta, he completed his internship at Michigan State University, with further studies in neurology at the University of New Mexico, the University of Iowa and Rutgers University. With a team of physicians, he developed a comprehensive stroke center at the University of Missouri. Utilizing his training and experience, he can offer cutting-edge medical care and surgical treatment to patients with significant neurological issues, including stroke and cerebrovascular diseases.

Dr. Shhadeh has a medical degree from the University of Damascus in Syria, as well as an MBA from Concordia University in Milwaukee, Wisconsin. He has 10 years of experience in neurointervention, neurocritical care and stroke treatment, and is board-certified in all these sub-specialties. He has trained physicians in these fields at the University of Oklahoma, where he was fellowship director, and has participated in many research trials. Over the past two years, Shhadeh and his team from the Arubah Neuroscience Institute treated hundreds of complex cases at Lawnwood Regional Medical Center in Fort Pierce, before relocating to IRMC.

Dr. Gheith graduated from medical school at Ross University in Iselin, New Jersey, with expertise in vascular and interventional neurology and neurocritical care. He interned and performed his residency and fellowships at the Medical College of Wisconsin in Milwaukee, an institution he

chose because it is a member of the Accreditation Council for Graduate Medical Education. During his residency there, he rotated through all aspects of neurology, a field he loved. He worked under experts in the neuroscience area and with top surgeons performing emergency operations on stroke patients. After graduation, he worked as a physician at Aurora St. Luke’s Medical Center in Milwaukee. While there, he met Shhadeh, who recruited him to rebuild and restructure the neurology program at the hospital. Within a year, the case load increased from 200 to 600. The experience there was crucial to the subsequent founding of Arubah Neuroscience Institute.

Gupta, who performed the initial cerebral (brain) thrombectomy at IRMC on July 29, 2018, offers a precise description of the events as they occurred that night: “A 58-year-old male arrived in the ER with acute onset left arm and leg paralysis — a clot in the right-side brain artery (the middle cerebral artery). He was quickly taken to the neuroangiography suite for an emergent diagnostic cerebral angiography and stroke thrombectomy. After angiography demonstrated occlusion of the right middle cerebral artery, recanalization of the middle cerebral artery was successfully performed using the penumbra (suction aspiration) device, and the solitaire device (temporary stent retriever) with establishment of normal antegrade flow to the middle cerebral artery territory. The patient made rapid improvement on the operative table and complete recovery in 24 hours.”

The doctors who brought the Arubah Neuroscience Institute to IRMC seek to coordinate all aspects of the patient’s hospital stay in order to streamline the critical care

process.

Gheith says, “We doctors want to closely follow every patient who comes in. The fewer shift changes the better for the patient. We seek to maximize the patient’s safety by providing specialized care. Our slogan is ‘compassionate and comprehensive care.’ With support from the hospital administration, we can make this happen.”

According to Gupta, care for a patient begins early in the process. “Before the patient arrives at the hospital emergency room, I get a pre-arrival notification in the form of a phone call and text message from EMS, a brief message saying, for instance, ‘52-year-old with right-sided weakness, onset at 1500 hours, ETA 15 minutes.’ Either I am already in the ER or heading to it to evaluate the arriving patient. In addition, the ER attending physician and nurses evaluate the patient using the computed tomography or CT scan. I review the images from the scan and make decisions about treatment with tissue plasminogen activator (tPA) and/or thrombectomy.”

Gupta adds that to save time, a patient often gets the tPA while still on the CT scanner table and is immediately taken to the neuroangiography suite in the main operating room.

The planning, energy and expertise of Gheith, Shhadeh and Gupta have resulted and will continue to result in improved care and excellent prognoses for their patients. Their mutual goal in bringing the Arubah Neuroscience Institute to IRMC was to create a stroke treatment center on par with any university hospital in the country. It seems they are well on their way. ☺