Testing a Promising New Imaging Tool for Valve Placement
See page 8
MedStar Washington Hospital Center’s newly established palliative care team is working side-by-side with the advanced heart failure (AHF) team at MedStar Heart & Vascular Institute. Together, they support AHF patients and their families with a focus on symptom management, setting goals of care and comfort measures.

“The marriage of these two teams has the power to be transformative,” says George Ruiz, MD, director, Pulmonary Hypertension Unit and member of the AHF team. “It challenges us in the way we think and what we do. It’s creative, and we believe it will be incredibly successful.”

Hunter Groninger, MD, director, section of palliative care in the Department of Medicine, says, “We’re just getting started, so we’re only beginning to see the potential we have collaborating with the AHF team.”

Palliative care team members participate in the care of all patients who receive ventricular-assist devices as a final aggressive intervention. They are referred to other AHF patients by the AHF team.

Those facing years of chronic conditions need assistance with such things as medical equipment, home health aides and transportation, as well as with addressing the emotional, mental and financial strain on families. With a physician and pharmacist on the team, they also can focus on the most effective and appropriate pain therapies and other debilitating symptoms (shortness of breath, anxiety, insomnia, depression, nausea, etc.) for these patients.

Patients reaching the end stages of life have unique needs that the team can help address. Sometimes family members have been focused on hoping for cures, and need guidance and support when faced with a loved one’s death. Others may have the awareness, but need help with the myriad of issues surrounding the final stages of life.

**PINNING THE GENERAL’S STAR ON HIS SON**

Dr. Groninger described a recent encounter with an elderly AHF patient that focused on life goals in the context of advancing disease. “This gentleman,” he says, “is retired military. His son is also in the military. He wants very much to participate in an upcoming ceremony for his son’s promotion to General; specifically, he wants to be able to pin the star on his son. But when we talked to this patient about his hopes and concerns, he confessed he does not think he’ll live to the time of the ceremony, planned for late spring. We talked about what that fear is like, and what might be done to make this important experience possible, even moving up the ceremony to an earlier date. We realized he had important questions for his AHF team about his medications and prognosis, which needed to be addressed again to help him plan this stage of his life.”
AHF IS A CONTINUUM

In addition to Dr. Groninger, the team includes nurse practitioner Joan Panke, NP; social worker Anne Kelemen, LICSW; and palliative care-trained pharmacist Renée Holder, PharmD. In addition, Evan DeRenzo, PhD, assistant director, Center for Ethics, collaborates with the team.

Samer Najjar, MD, medical director of AHF at MedStar Heart & Vascular says, “AHF is a continuum. The inpatient stay or a surgical procedure is just one episodic part of care. A dedicated palliative care team provides a much more comprehensive approach in regard to addressing all of their needs, both as an inpatient and outpatient.”

Dr. Groninger says benefits of palliative care have been recognized by experts in other fields, particularly in oncology. While he says the intersection of palliative care and AHF is relatively new, he believes the collaboration will provide greater comprehensive care, as well as increased patient satisfaction.

A dedicated, multidisciplinary approach to AHF patients is nothing new at MedStar Heart & Vascular. In addition to the collaboration with the palliative care team, the AHF team includes cardiologists, cardiac surgeons, intensivists, advanced practice clinicians, social workers, clinic and home health nurses, nutritionists, financial coordinators, medical ethicists, coordinators, physical and occupational therapists, pharmacists and a nurse navigator.

Dr. Ruiz says, “Patients need to know they are being cared for by an integrative team,” he says. “Our ultimate goal is have a multidisciplinary, multifaceted team that addresses all of a patient’s needs, from the moment of referral.”
Spotlight

Short Encounter Leads to Lifetime Devotion as Heart Surgeon

Physicians have a deep appreciation for the professionals who have preceded them. Without their insights and efforts, the amazing array of modern treatment tools and procedures might not exist.

For Michael Fiocco, MD, chief of cardiovascular surgery at MedStar Union Memorial Hospital, that connection is a little more personal. His father and grandfather were physicians, and he had little doubt about following in their footsteps.

However, his choice of discipline—cardiac surgery—was influenced by a department director he met while doing a rotation at University of Maryland. “It’s all because one person, whom I’d only recently met, felt it’d be a good fit,” he says.

Today, Dr. Fiocco is a recognized expert in artery disease, valvular disease and aortic aneurysms. Even with his many career achievements, Dr. Fiocco remains fascinated by the heart and the intricacies of its function.

“The heart’s operation is relatively basic from a physiology perspective,” he says, “yet there are so many other things, such as diabetes and cholesterol, that can cause problems. Surgery, too, is a combination of both basic and delicate movements. Understanding all these complexities and how they fit together is, to me, the enjoyment of this field.”

Like other surgeons, Dr. Fiocco wants patients to feel confident about their care and make well-informed decisions about surgery. That kind of physician-patient collaboration is not always easy. “Deciding how much information to give a patient is a bit of a balancing act,” he says. “You don’t want to dwell on things that might go wrong—even if they are rare—and unnecessarily alarm the patient. At same time, you don’t want to hide the fact that this kind of surgery has significant risks.”

The choice of surgical procedure is likewise highly individualistic. While innovative methods such as beating-heart surgery can mean faster healing and recovery, it’s not right for every patient. “We’ve found that in relatively ‘healthy’ patients, there’s little added risk to using a heart-lung machine,” Dr. Fiocco says. “But in older patients, or those with conditions such as calcified arteries, beating-heart surgery can be a big advantage. Now, about 30 to 40 percent of our surgeries are beating-heart procedures.”

Dr. Fiocco recognizes that, like his predecessors, he has a responsibility to continue the cycle of knowledge for the benefit of future generations of patients and physicians. An active researcher, he’s studying how certain drugs can help with heart function, and how emerging technologies, such as catheter-delivered percutaneous aortic valves, can reduce the need for open-heart procedures.

“I want tomorrow’s physicians to look back and appreciate what we did to help make their work easier,” he says. “Hopefully, they’ll be inspired, as I was, to continue advancing the profession and creating new and better ways to care for patients.”
Establishing the MHVI Way

This past January, we reached a significant milestone when we opened the doors to two 30-bed inpatient units of the new Heart Hospital on the campus of MedStar Washington Hospital Center. It was the completion of phase one of an ambitious construction project we began three years ago, and a giant step in the evolutionary process of the MedStar Heart & Vascular Institute (MHVI).

More construction is underway, with additional inpatient units, an entirely new cardiovascular ICU, and expanded and remodeled entrances and outpatient facilities. By late spring 2016, the Heart Hospital will occupy 160,000 square feet on six floors, and house 164 beds adjacent to our cardiac catheterization and cardiac electrophysiology laboratories and in close proximity to our cardiac and vascular operating rooms.

FORM, FUNCTION, FLEXIBILITY
The facility is a physical representation of our philosophy of cardiovascular care. The “MHVI Way” puts an emphasis on accessibility, efficiency and collaboration. It’s an approach to service delivery that focuses on best practices across the board, optimal clinical outcomes, patient safety—and patient satisfaction.

We’ve designed every aspect of MHVI to reflect this approach to service delivery, and created this new physical space to promote the critical components of our model of care. We’ve built flexibility into the architectural space and in care delivery so that we can adapt quickly to changes in practice.

Communication is being strengthened between patients, families and caregivers, across disciplines and specialties, and between levels of care within the Heart Hospital and all MHVI providers. Silos are being eliminated between patient units, ORs and laboratories to promote transparency and ensure a cohesive implementation of clinical protocols.

Rooms are spacious enough for patient and family education. Bedside computer kiosks and handheld devices transmit information to speed care delivery. Shared information systems and computer order entry reduce medical errors.

A newly energized quality initiative includes network-wide data collection and ongoing, proactive analysis of care processes, and a new near-miss reporting system that is creating greater accountability. Sophisticated web-based technology allows for real-time consultation and rapid patient transport from referring facilities, including MHVI member hospitals throughout the region.

COMPETENCY, CUSTOMER RELATIONS
Best practices include not only the most advanced treatment options, but a consumer-friendly approach to care delivery. That requires a team of providers in a broad range of disciplines who have a high level of competency in everything from complementary medicine to hospitality.

Superior technology, pre-eminent expertise, and rich research and education programs may be the first steps in service provision at the Heart Hospital. But it takes follow-up, follow-through and following orders to ensure the best outcomes, and reduce the likelihood of re-hospitalization.

We’re building this philosophy into the care model and into the Heart Hospital physical space by housing the cardiology, cardiac surgery and vascular surgery teams under “one roof,” and working collaboratively with one another through multidisciplinary patient consultations and integration of care protocols.

When all, or at least most, of the puzzle pieces are cohesively linked together, patients and health care providers benefit. That’s the keystone of building a true cardiovascular network of care. It’s also the only way to create world-class clinical services—and build a Heart Hospital to serve as the clinical backbone for that world-class care.

No endeavor this complex—and ambitious—can be achieved without everyone pulling a share of the load. That really is the “MHVI Way.”

“When all of the puzzle pieces are cohesively linked together, patients and health care providers benefit.”
A serendipitously timed television commercial about MedStar Heart & Vascular Institute likely saved Estela Escobar’s life.

Escobar, an Arlington, Va., resident, had just been told she had a malignant cardiac sarcoma with a very dire prognosis. She had recently undergone pericardiocentesis and a pericardiotomy after doctors discovered pericardial effusion was the cause of her fatigue and shortness of breath. Now, a cardiac MRI indicated a large mass was infiltrating the anterior wall of her heart. The news was devastating for Escobar, her husband of 34 years and her three adult children.

When she sat down in her living room that January day in 2013, Escobar was scared, confused and in search of a second opinion. Seeing the MedStar Heart & Vascular commercial was a message, she believes, and within hours Escobar had gone online to request an appointment. A week later she met with Ana Barac, MD, PhD, director of MedStar Heart & Vascular Institute’s Cardio-Oncology Program. The encounter would not only alter Escobar’s plan of care, but save her life.

Dr. Barac, who specializes in non-invasive cardiology with a focus on cardiac imaging, reviewed Escobar’s MRIs and recent medical history. She knew that cardiac sarcomas, while quite rare, are the most common heart malignancy.

“This was a very rare case. It is great that we can offer these services to treat unique patients. Very few hospitals can offer this.”

—Ezequiel Molina, MD, cardiac surgeon
Still, she wasn’t convinced.

“I couldn’t yet prove it, but there were certain characteristics of the tumor that suggested this could be a lymphoma,” explains Dr. Barac, adding that primary cardiac lymphomas are even more rare and unlikely than sarcomas, but much more responsive to therapies.

Immediately, Dr. Barac ordered a CT of Escobar’s abdomen and chest to ensure there was no metastasis elsewhere. After those results proved negative, Dr. Barac knew a tissue biopsy of the cardiac mass was the only way to obtain a formal diagnosis.

Escobar, however, was reluctant to undergo another procedure. She met with cardiac surgeon Ezequiel Molina, MD, who explained to Escobar that while he was hopeful a tissue sample could be obtained in a minimally invasive procedure, if that proved difficult, then a more invasive sternotomy would be required. Escobar agreed.

In the operating room, Dr. Molina accessed the mass from a small incision in Escobar’s left side despite having limited exposure to visual markers of the heart due to the complexity of the tumor. Waiting nearby was Jayashree Krishnan, MD, a pathologist who prepared the tissue sample, and who invited Dr. Molina to look at the results as well.

THERE WAS NOT A MINUTE TO WASTE

“Even though I am not a pathologist, I knew it was a lymphoma as soon as I saw it under the microscope,” says Dr. Molina. “I knew this was abnormal tissue and not normal heart muscle.”

After completing her formal cytologic evaluation, Dr. Krishnan confirmed the diagnosis. There was not a minute to waste.

“Lymphomas grow extremely, extremely fast,” explains Dr. Barac, “but are very chemo-sensitive and therefore respond better than sarcomas.”

Escobar was quickly moved to the cardiac care unit where she met Oncologist Joseph Catlett, MD. She received her first chemotherapy infusion while being monitored in case any cardiac arrhythmias developed.

After the first cycle of chemotherapy was complete, Dr. Barac repeated cardiac imaging, stunned to find the tumor was half its original size. “It was quite dramatic,” Dr. Barac says, adding that Escobar continued to receive chemotherapy as an inpatient for five days. Six months of outpatient chemotherapy followed, with Escobar’s children and husband offering steadfast support and care.

Today, thanks to MedStar Heart & Vascular’s Cardio-Oncology Program, Escobar is cancer free. She has MRIs every six months and sees Dr. Catlett for follow up visits every three months.

“This was a very rare case,” says Dr. Molina, noting that this was the first cardiac lymphoma he has seen in his professional career. “It is great that we can offer these services to treat unique patients. Very few hospitals can offer this.”

Dr. Catlett agrees, “Cardiac lymphomas are extremely unusual and have been associated with a poor prognosis. However, with the newer combinations of chemotherapeutic agents and the addition of immunotherapy in the form of rituximab, we were optimistic that her lymphoma would respond to this treatment. In fact, following the first cycle, her lymphoma essentially disappeared.”

For Escobar, she is just grateful for her team of doctors. “Even though I was very sick, I was sure I was in good hands,” she says. “Dr. Molina is a wonderful person. Dr. Barac is extremely special. And Dr. Catlett continues to be my ‘knight in shining armor.’ All of my doctors are simply one-of-a-kind.”
Ron Waksman, MD, director, Cardiovascular Research and Advanced Education, and his research team are testing a promising new imaging tool that may help improve real-time, intravascular, intra-procedural evaluation of valve placement and fit. Their goal is to determine whether the aortic valve ultrasound (AVUS) with ChromaFlo® system is an improvement over echocardiography for evaluating outcomes after a transcatheter aortic valve replacement (TAVR) procedure. MedStar Heart & Vascular physicians have performed more than 1,000 TAVR procedures in the last eight years.

“The ultimate goal of imaging is to optimize valve sizing—and minimize valve leakage after deployment,” Dr. Waksman explains.

“Today, echocardiography is the gold standard for determining immediate outcomes and complications following valve implantation, such as valve leakage,” says Marco A. Magalhaes, MD, research fellow in interventional cardiology. “However, the accuracy is not well established, so there is an unmet need for novel technologies to guide intra-procedural decisions and the additional risk of performing the procedure under general anesthetic.”

**INTRAVASCULAR BLOOD FLOW IMAGING**

“In a single study elsewhere, use of aortic valve ultrasound alone is being examined as an alternative imaging tool,” Dr. Magalhaes adds. “While it can help us make more precise valve measurements, it can’t produce images of blood flow, which is critical to evaluating success or failure of implantation.”

To boost the effectiveness of intravascular ultrasound, MedStar Heart & Vascular researchers have added ChromaFlo technology, which provides colorant into the imaging process. In a pig model, ChromaFlo has proven to be effective in producing color images of blood flow—the added dimension clinicians need to help ensure perfect valve sizing and positioning, potentially improving long-term viability of TAVR.

“With this technology, we can produce a color-enhanced display of blood flow, without use of contrast material or radiation exposure,” says Dr. Magalhaes. “It allows us to evaluate the valve during deployment and immediately fine tune the interaction with the patient’s native valve, and, if necessary, upsize the valve, for example.”

**EVALUATION OVER THE LONG TERM**

The technique also may serve as an important routine surveillance tool for TAVR patients. If clinicians can identify a valve that is beginning to fail before a critical emergency, they can take preemptive action. For some patients, the solution may be valve-in-valve surgery, in which a new prosthesis is implanted inside the degraded valve.

The research team is hopeful the results of initial animal studies will be repeated soon in human trials. “We’ve made great progress in the last several years in the TAVR procedure, validating its value for a broader population of patients and improving in the prostheses,” Dr. Magalhaes adds. “Now we need to find a new gold standard for imaging to keep pace with the demand.”
Nearly 2,000 participants gathered in Washington, D.C., for the annual Cardiovascular Research Technologies conference—CRT 2015. The four-day meeting, which attracts an international audience and faculty, once again offered multiple, simultaneous sessions addressing a broad range of topics relevant to advancing cardiovascular technology. The conference included interactive, live case demonstrations from across the globe, hands-on simulations, and lively discussions in and out of the sessions—all with the potential to spur the dissemination and use of advanced cardiovascular interventions.

Keynoter General Colin Powell did not disappoint when he recounted his amazing personal story, rising from a childhood in Harlem to become the first African-American Secretary of State. He talked about the importance of leadership in his life—and in all his endeavors.

Innovative technology was celebrated with announcement of the CRT 2015 Innovation Awards. More than 30 people submitted their ideas, which were narrowed down to a handful of finalists. First prize was awarded to Daniel Hawkins, CEO and founder of Shockwave Medical, Inc., for his novel notion to use shock wave medical lithoplasty to disrupt calcification in vessels.

A lively exchange of ideas about the effects of the Affordable Care Act (ACA) on cardiology practice was jump-started at the Association of Black Cardiologists’ luncheon by Charles Krauthammer, MD, a Pulitzer Prize-winning Fox News commentator and political columnist.

The discussion continued during a luncheon symposium, which was part of the popular Food and Drug Administration (FDA) Town Hall sessions. Speakers representing the viewpoints of industry, FDA, Wall Street and hospitals debated, with some expressing concern that the ACA is creating new financial burdens that could prove dangerous to the development and delivery of new therapies.

Another FDA Town Hall discussion focused on challenges posed by FDA regulations governing pre- and post-market evaluation of medical devices. Industry and the cardiovascular medicine community wondered aloud how these requirements could be reshaped, arguing that by the time a first generation device reaches final approval it is obsolete—and a second generation device is already in clinical trials.

An FDA representative stressed the administration’s primary mission to develop a reasonable determination of safety of new devices, noting that new regulatory strategies are now in place to help streamline the process. Time will tell whether or not these will help or hinder the development of cardiovascular device innovation.
FROM MEDSTAR HEART & VASCULAR INSTITUTE

Medical Staff News

Mun K. Hong, MD, FACC, FSCAI, has been named chief of Cardiology at MedStar Southern Maryland Hospital Center. Dr. Hong is a graduate of Johns Hopkins University School of Medicine. He completed his internship and residency in internal medicine at Johns Hopkins Hospital, a fellowship in Cardiology at MedStar Georgetown University Hospital, and a fellowship in Interventional Cardiology at MedStar Washington Hospital Center.

Prior to joining MedStar Heart & Vascular Institute, Dr. Hong served as director of the Cardiac Catheterization Laboratory, and Interventional Cardiology at Mount Sinai St. Luke’s-Roosevelt Hospital Center in New York. He was also an associate professor of Clinical Medicine at Mount Sinai Icahn School of Medicine. Dr. Hong has served as principal investigator for a number of clinical trials, and authored more than 200 peer-reviewed articles and abstracts, and numerous book chapters.

Dr. Hong’s clinical and research interests include:
- Interventional cardiology, especially acute coronary syndromes
- Diabetes and cardiovascular disease
- Drug-eluting stents approaches repair

Andrew W. Ertel, MD, has joined the Cardiology medical staff at MedStar Washington Hospital Center. Dr. Ertel graduated magna cum laude from The College of William and Mary, and is an AOA graduate of the University of Virginia.

He completed an internship and residency in internal medicine at McGaw Medical Center of Northwestern University, a fellowship in cardiovascular disease at the University of Illinois Hospital and Health Sciences System, as well as an advanced cardiovascular imaging fellowship at the National Institutes of Health in Bethesda, Md.

Dr. Ertel’s clinical and research interests include:
- Cardiovascular MRI
- Cardiovascular CT
- Consultative cardiology
- Research in the use of novel cardiac MRI techniques in evaluation of diffuse myocardial pathologies; cardiac CT imaging for TAVR evaluation; and evaluation of heart disease in athletes

Nauman Siddiqi, MD, FSCAI, a board certified interventional cardiologist, is now serving patients at MedStar Union Memorial Hospital in Baltimore. Prior to his recent appointment, he served as an interventional cardiologist at Baylor Health Care System in Dallas. Dr. Siddiqi is a graduate of Georgetown University School of Medicine and completed his internship and residency in internal medicine at MedStar Georgetown University Hospital.

While completing his fellowship in Cardiology at the University of California, Irvine Medical Center, he served as chief fellow. Dr. Siddiqi also obtained a Master of Science in Epidemiology from the University of Maryland and completed a fellowship in interventional cardiology at the St. Vincent Heart Center of Indiana.

Dr. Siddiqi’s clinical and research interests include:
- Aortic and mitral valvuloplasty
- Transcatheter aortic valve replacement
- Transradial cardiac catheterization
- Percutaneous coronary intervention, including pericardiocentesis, atrial septal defect (ASD) and patent foramen ovale (PFO) closure, myocardial biopsy and rotational atherectomy

Carolina I. Valdiviezo-Schlomp, MD, has been appointed director of Clinical Cardiology at MedStar Washington Hospital Center. Prior to her recent appointment, Dr. Valdiviezo was a cardiologist and assistant professor at Johns Hopkins University.

Dr. Valdiviezo received her medical degree from the Universidad Autónoma de Guadalajara, and completed her internal medicine residency at The Mount Sinai Hospital in New York. She completed cardiovascular fellowships at Montefiore Medical Center/Albert Einstein College of Medicine and at The Johns Hopkins University School of Medicine.

Her areas of interest include:
- General cardiology
- Atherosclerotic cardiovascular disease
- Preventative cardiology
- Non-invasive cardiac imaging
- Echocardiography
- Cardiac CT imaging
- Women’s cardiovascular health
- Cardiac disease in pregnancy

Up and coming Cardiology Faculty: Dr. Ertel
First Phase of Renovation Completed

On Jan. 5, MedStar Heart & Vascular Institute at MedStar Washington Hospital Center held an Open House to celebrate the completion of two clinical inpatient units, the first phase of the renovation of heart and vascular services at the hospital.

Physician Executive Director Stuart F. Seides, MD, MedStar Heart & Vascular Institute, said in his remarks to those who gathered at the reception, “This event represents a milestone in the more than 50-year evolution of what we now know as MedStar Heart & Vascular Institute, or MHVI. This building, a heart hospital within our hospital, is a tangible representation of the excellence that we have brought to Heart and Vascular services in our nation’s capital. Today marks the completion of the first phase of this project, two 30-bed inpatient units on 4NE and 4NW, which house cardiovascular surgical patients and medical and procedural cardiology patients, respectively. The second phase brings two more units on the third floor, and thereafter an entirely new cardiovascular ICU will open on the second floor.”

At the Jan. 5 Heart Renovation Open House are (L to R) John Sullivan, president, MedStar Washington Hospital Center; Augusto Pichard, MD, director, Cardiac Intervention and Structural Heart Disease, MHVI; Stuart Seides, MD, physician executive director, MHVI; and Paul Corso, MD, chairman, Cardiac Surgery, MHVI.
Cardiovascular Physician is a publication of MedStar Heart & Vascular Institute. It is a forum to share clinical, research and teaching information in cardiology, cardiac surgery and vascular care.

Please submit editorial comments to Norma Babington, at norma.babington@medstar.net, or 202-877-0201.

Visit our website, at medstarheartinstitute.org.

U.S. News & World Report lists MedStar Washington Hospital Center as the only hospital with a nationally ranked Cardiology & Heart Surgery program in the Washington, D.C. region.

MEDSTAR HEART & VASCULAR INSTITUTE
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