N ow in its sixth year, the NCVH Fellows Course: Complex Strategies for Peripheral Interventions, continues to grow – drawing more than 85 attendees to the May 31st program. In addition to a day-long program of didactic lectures and hands-on workshops, the course included simulation training at the LSU Health Sciences Center.

Carlos Mena, M.D., NCVH Fellows Course Chairman, pointing to the full room, said the program’s growth is a testimony to the vision of NCVH Chairman Craig Walker, M.D., for the entire field of peripheral vascular disease (PVD).

“We want it to become the Fellows Course where everyone comes to learn about devices and technologies and how to treat complex clinical cases,” said Dr. Mena.

Understanding PAD
After welcoming the fellows, Dr. Walker moved right into the topic at hand – why every interventionist must understand peripheral artery disease (PAD). But, Dr. Walker said, it’s more important that every healthcare provider understand PAD.

“There’s an epidemic of PVD throughout the world – this disease spares no part of the world,” said Dr. Walker, adding that studies estimate that 20 million people in the United States have PAD. By 2020, reports also predict the number of people with critical limb ischemia (CLI) will grow to 2.8 million.

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Thank you to Medtronic for sponsoring the NCVH Fellows Course Highlights Newsletter
Building on the addition of hands-on training to last year’s NCVH Fellows Course, half-day training sessions were again held at the Advanced Practice Center at the LSU School of Medicine on Wednesday and Thursday, June 1 and 2.

NCVH Chairman Craig Walker, M.D., said the hands-on training, which included simulators, models and cadaver specimens, builds on the lectures presented on Tuesday, May 31. “It’s a real hands-on opportunity for the fellows,” he said.

During the program on Thursday, a mix of vascular surgeon and cardiology fellows were divided into small groups and took turns at four stations, which were focused on different arterial locations and procedures such as EVAR repair.

Mark Miller, Spectranetics, said his company’s simulators are designed to teach fellows how to perform entire endovascular procedures, including wiring, laser atherectomy, ballooning and stenting. Miller said he enjoys his demonstrations at the Fellows Course because the young doctors are “engaged and interested. They demonstrate a passion for learning and want to be educated.”

Fellows also worked on their renal artery access using Mentice’s Procedicus VIST simulator. Mentice representatives walked fellows through the process, and then teams worked together to feed the catheter into the renal artery. Different types and sizes of coronary catheters were discussed, providing fellows with a greater understanding of the importance of device selection.

Cadaver models offered the groups an opportunity to gain tibial access using ultrasound and guidewires. Parham Parto, M.D., and Gagandeep Singh, M.D., were the first fellows to try out those particular techniques on Thursday. Claudia Sheahan, M.D., patiently guided her students through the process. “The more comfortable you are, the more accu-
rate you’re going to be,” she said. She also reminded the group to keep the entry point in the middle of the screen for better accuracy.

Across the room, Stephen Kuljis, W.L. Gore and Associates, interacted with the fellows and physician leaders at the EVAR station. While observing Arijit Chanda, M.D., using the simulator, he discussed trunk placement direction. “You may need to use one side or the other,” Kuljis told Dr. Chanda. “Depending on if there’s a lot of calcium or depending on the natural curvature of the aorta.”

Overall, the fellows enjoyed their experience at NCVH, especially the hands-on training. “I’m having a good time and gaining indispensable knowledge,” said Shane McEntire, M.D.
“PAD is a marker for death with a one-year mortality rate, or a 20% rate for a major cardiovascular event,” said Dr. Walker. “The overwhelming majority of people with PAD are undiagnosed. This doesn’t even address venous disease, which is more prevalent than arterial disease.”

A diminished foot pulse can often be the only indicator of PAD, he explained.

“Patients with PAD must be assessed globally – not just the leg,” said Dr. Walker. “And PAD patients must have longitudinal follow-up.”

Dr. Walker concluded with a statement that was heard throughout the week – “amputation should always be the last resort, not the first.”

He cited higher costs for amputation versus limb salvage, and, what’s often the case – patients leave the hospital and go straight into a nursing home, greater impacting their quality of life.

Treating PAD and PVD patients starts with a patient exam and use of screening tools. Richard Kovach, M.D., explained that vascular testing is used to not only determine diagnosis, but also for case planning and surveillance.

Dr. Kovach stressed the importance of knowing the risks and clinical signs of PAD, PVD and CLI. He added that one-third of patients will have classic symptoms, one-third will have atypical and the remainder will have no symptoms.

Clinical signs of CLI include non-healing wounds, shiny skin, loss of hair growth and pale or bluish skin.

When determining who should be screened, groups to consider include:
- Patients older than 70
- Patients 50-69 with a history of diabetes or smoking
- Patients under 49 with diabetes and one additional risk factor

“Seventy percent of patients with coronary artery disease (CAD) will have PAD, and vice versa,” said Dr. Kovach.

Tests he reviewed included the ankle brachial index (ABI), skin perfusion pressure (SPP) and pulse volume recordings (PVR). He then moved on to the role of the duplex ultrasound, which he said is the next step after a physical exam and patient history is completed.

“The duplex ultrasound is the simplest way to confirm PAD,” he said. “It’s noninvasive and great for surveillance. But it can be more qualitative than quantitative.”

He then looked at the roles of CT angiography and MRA imaging. He said both tests are of greatest use in case planning, as they provide you guidance from head to toe. Imaging will help determine if surgical or endovascular treatment is best, the best approach and access sites and what devices will be used.

There are drawbacks to CT angiography, Dr. Kovach explained,
Q&A: Why are you attending the NCVH Fellows Course? What topics are of most interest to you?

Michael Amponsah, M.D.
Newark Beth Israel Medical Center
West Orange, N.J.
“I’m very interested in peripheral interventions. I think the hands-on session is worth its weight in gold. It allows you to try out new techniques beforehand and boosts your confidence. And of course New Orleans is great.”

Shane McEntire, M.D.
Carolinas Medical Center
Matthews, N.C.
“I’m a vascular surgeon fellow. I’m here to learn more about peripheral intervention and atherectomy, things we don’t do much. This course is a great educational tool.”

Arijit Chanda, M.D.
Yale School of Medicine
Milford, Conn.
“In the past, my senior fellows attended and thought NCVH was great. I’m looking forward to the hands-on training, especially the pedal aspects. And there’s a dedicated Fellows course for PAD – that’s the exciting part of the conference.”

Megan Whelton, M.D.
Boston Medical Center
Boston, Mass.
“I’m interested in peripheral interventions and cardiology. I’m looking forward to honing my skills during the hands-on training at the SIM center.”

Thank You Sponsors!
Hands-On Workshops: Real-World Practice Opportunities

Fellows rotated through eight interactive stations, each having a faculty proctor to share their personal experiences with the devices on display.

Interactive learning stations were provided by:

- Bard Peripheral Vascular
- Boston Scientific
- Cook Medical
- Cordis
- Gore & Associates
- Medtronic Covidien
- Spectranetics
- Terumo Interventional Systems
Valuable Lessons and Technological Education

Following a morning of presentations focused on diagnosing and screening methods, the afternoon included a closer look at how to choose the right tools for the job and overviews of new technology with promising data.

Barry Bertolet, M.D., discussed balloon technology, imploring fellows to “leave no metal behind.”

Dr. Bertolet illustrated this concept by discussing drug-coated scoring balloons, which have a better outcome than their non-coated counterparts.

“Balloon therapy is and will remain the cornerstone of peripheral intervention,” he said. “Combination therapeutic modalities are the upcoming attractions.”

S. Hinan Ahmed, M.D., also offered practical advice while discussing stent selection.

“Look at your patient as a whole,” he said. “As you go out to your practice, don’t lose that big picture.”

Men and women are equally affected by PAD, and long-term prognosis is not very good, said Dr. Ahmed. “But with treatments, they typically do well.”

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View presentation slides and videos at www.ncvh.org/fellows
including patient exposure to contrast and radiation as well as required repeat contrast exposure if intervention is required.

“Understand you must be familiar with axial cuts – it is the most useful information that comes from CT angiography,” he said.

MR Angiography, he said, is better for small vessel visualization and does not require iodine-based contrast or radiation.

“Don’t forget the basics – patient history and physical exam,” said Dr. Kovach. “Make use of in-office screening maneuvers, confirm your diagnosis with duplex ultrasound and make use of CTA and MRA for case planning.”

Larry Diaz-Sandoval, M.D., provided a comprehensive overview of access sites for peripheral interventions.

“The common femoral artery (CFA) is the most common access site for peripheral interventions,” he said, before looking at alternative access sites.

Other access sites he discussed included antegrade SFA access, antegrade popliteal access, antegrade tibial access, retrograde CFA access, retrograde popliteal access, retrograde tibiopedal access and digital access.

“Patients with PAD must be assessed globally – not just the leg. And PAD patients must have longitudinal follow-up.”

– Dr. Walker

Choosing between endovascular or surgical approaches requires an understanding of the comorbidities and outcomes.

“You have to personalize the treatment to each patient,” he said.

Dr. Shishehbor pointed to data showing that endovascular procedures result in a shorter hospital stay and offer a cost savings versus surgical procedures.

He concluded by introducing the audience to the Angiosome concept.

“We want to get out of the mindset that if the patient has their leg, we’ve done a good job,” he said. “That’s no longer valid. We want to heal the patient as fast as possible, and the Angiosome concept may allow us to do that.”
The practitioner’s ideal stent, he said, should be flexible, with an exceptional crossing profile and trackability. Nitinol is an ideal material in stent construction, Dr. Ahmed said, as it has shape memory, super elasticity, high radial resistive force and corrosion resistance.

“Understand your stent, understand the material it’s made of, so that you can choose the best one for your patient,” he said.

“You are starting a career that’s wide open,” said Dr. Ahmet. “There’s more you can do for these patients than just put a stent or balloon in there.”

No matter the complexity of the procedure, presenters agreed that educating oneself on a multitude of different devices is paramount to success.

During his presentation, Frank Bunch, M.D., discussed the use of atherectomy devices in the treatment of PAD, a topic he’s very familiar with.

“I was exposed to atherectomy very early on,” he said.

A variety of factors are involved in choosing the right device, said Dr. Bunch, including:
- Operator experience and preference
- Location of lesion – above or below the knee
- Plaque composition
- Lesion morphology

Dr. Bunch discussed the merits and downfalls of several different devices, and gave high praise to orbital devices, which use centrifugal force to create greater lumens, and drug-coated devices.

“DCBs are an ideal modality for favorable outcomes, and a potential advantage emerging in long and severely calcified lesions,” said Dr. Bunch.

Also stressing the importance of device education was NCVH Chairman Craig Walker, M.D. His presentation involved wire technology, a talk he said he loves to give.

“Wires are fundamentally important to everything we do,” he said. “We can all use education on wires.”

There are six core components of guidewires, according to Dr. Walker, including core diameter, tip design and core material, which he discussed in detail.

In the past, guidewires were typically made of stainless steel, eventually evolving into high tensile strength stainless steel. The introduction of Nitinol in guidewire construction improved flexibility and reduced incidence of kink, but support and torque were lacking. Now, stainless/NiTi hybrid construction is the market norm.

Walker’s multi-faceted presentation also incorporated a lesson on reading taper charts and touted the benefits of hydrophillic coatings, which he believes can “change our whole world” as they minimize friction and provide better trackability.

Switching sides from choosing the right tool to the right patient for carotid stenting, moderator Carlos Mena, M.D., implored attendees to take it slow at first, especially with patients who are high-risk or asymptomatic.

“Stakes are higher for those just starting out and building a reputation,” he said. He recommends stopping often during the procedure to make sure that everything is going smoothly. “Stopping often is the right thing to do,” he said. “Pushing it and experiencing complications is not going to get you anywhere.”
Anatomical considerations when stenting include the type of aortic arch, said Dr. Mena, as complex arches are naturally more challenging.

Grayson Wheatley, III, M.D., reiterated Dr. Mena’s anatomical lesson during his presentation on endovascular aortic aneurysm repair. Understanding arch anatomy is essential due to risk of stroke, he said. Additionally, following patients and performing surveillance over time can prevent complications. As an example, he discussed a case where the stent placement was perfect during the initial procedure but then migrated a few months later, again blocking flow.

According to Dr. Wheatley, when choosing a stent, practitioners should look for flexibility, length, radial strength and expansion character. There are four devices on the market for professionals to choose from, he said, and the technology is constantly evolving, with exciting advances on the horizon.

“The endovascular revolution has begun,” he told the audience.

New, promising technology is emerging in other realms as well, according to Prakash Krishnan, M.D., but the really exciting tool that has emerged in 2016 is data. This data can help create an algorithm to discover the best treatment options for patients, he said told attendees.

With help from current data and used in tandem with developing technology, Dr. Krishnan’s proposed algorithm may be a game-changer in PAD treatment. While DEB/DES-CTO and drug-eluding data are forthcoming, Dr. Krishnan believes that interwoven, self-expanding Nitinol stents are “the future.”

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Dr. Wayne Zhang discusses the endovascular approach of chronic mesenteric ischemia.