AN INTERVIEW WITH…

Linda Harris, MD, FACS

Past President of the Eastern Vascular Society discusses improving diversity in the field, updates in EVAR techniques and technology, and mentoring the next generation of vascular surgeons.

What was the highlight of your tenure as President of the Eastern Vascular Society, and what was your biggest takeaway from the experience?

The biggest highlight of my tenure was at our annual meeting, watching the impact of the culmination of a year-long effort on my part, as well as those of all of our committees and officers, coming to fruition at our national meeting. Specifically, seeing the impact on the young vascular surgeons and trainees was very rewarding. The excitement and enthusiasm seen in several of our new endeavors, such as the simulation program and reinvigorated mock oral exams, was impressive. The quality of the presentations was outstanding as well. The reaction to my address from the young trainees was also a major highlight of my tenure.

My takeaway is that we all need to continue to work together to improve care for patients with vascular disease. By sharing in the work, we are able to accomplish much more than we ever could by going it alone. We also need to show our enthusiasm and love of our field to the next generation to get them involved and active in the care of patients with vascular disease.

Can you tell us about some of the opportunities you have had to empower young physicians and why this is important to you as a leader in the vascular community?

I have been privileged to have the opportunity to work with young trainees in many circumstances. I regularly participate in various boot camps and simulation programs, both internally, regionally, and nationally. I have also mentored trainees at regional and national meetings for years. Working with medical students, residents, and fellows at my own institution has allowed me to empower many young physicians. The amazing thing is that some of the best and brightest trainees are often some of the most unassuming and humble people you will ever meet. I have immensely enjoyed being able to introduce them to the field of vascular surgery and watch and participate in their growth as they mature as vascular surgeons. It is always amazing to see the joy in their faces as they help impact the lives of our patients and as they become comfortable in their independence.

I have also tried to empower junior faculty through participation in our regional and national organizations. It is very interesting that many very talented people are unsure of how to become more involved. One thing that I have done in various leadership positions was to give a true opportunity to as many individuals as possible who express a real interest in participating. I think there is nothing more frustrating than wanting to contribute, having great ideas, and not feeling valued or being able to act on them. Those who actually produce, when given the opportunity, are given additional opportunities to get more involved. As a single person, I, or any other leader, am only able to accomplish so much. But by empowering and involving others, we multiply the impact of our work.

What are the most important elements to include in vascular residency programs to prepare residents for success in the field? Do you have any advice for program directors seeking to develop new residency programs at their institutions?

The most important elements are case volume and a faculty that truly wishes to educate the next generation. Merely having cases, without teachers, will not provide a good training environment. Similarly, having wonderful teachers/educators without the necessary clinical experience will also not yield good results. It is important for trainees to not only be technically able to perform procedures, but also to understand the benefits, risks, different options, and thought processes of the faculty for each procedure. It is also necessary for them to understand that not every patient needs an intervention and that medical management may be best in some cases.

For individuals interested in developing new residency or fellowship programs, the best advice I can give is to connect with the Association of Program Directors in Vascular Surgery (APDVS; apdvs@vascularsociety.org). Several years ago, we put together a guidebook titled, "How to Develop a Vascular Surgery Training Program." This includes information on the various pathways, program designs, qualifying criteria, mechanisms to obtain funding, and frequently asked questions in addition to sample program information forms and policies. Most of the current program directors, including myself, are more than willing to give assistance as

(Continued on page 118)

(Continued from page 122)

well and can be accessed through the APDVS. Obviously, everything eventually needs to be personalized to the institution developing the new program, but using templates from others can save significant time and energy.

In regard to your passion for supporting inclusion and diversity in the vascular field, how do you perceive the progress being made to support and encourage young women entering or thinking of entering the field since you were just beginning? What difficulties or barriers remain?

This has markedly improved since the time I was applying, when there were only six women in academic vascular surgery. We have improved the recruitment of women and, to some extent, minorities to the field by introducing it to the medical student class rather than just to individuals committed to general surgery. We have made an active effort to recruit women. One of the most important needs is to have appropriate mentors—both men and women—who are supportive. It is also critical that we have visible women and minorities as leaders, so that individuals considering careers in the field have someone to look up to and connect with. It is important for prospective vascular surgeons to feel like they could belong and excel, rather than being outsiders.

Although we have seen major progress, we still need to look at issues such as "glass ceilings"; we do not have nearly enough women or minorities filling roles as division chiefs, chairs, vice chairs, program directors, or as full professors. We also need to continue to include women in leadership positions in all of our regional and national societies. Many societies have now had at least one female president, but this is just the beginning of the process. We need to aim for a time when the leadership is equally balanced. However, to be leaders, women and minorities have to first earn the position by participating on committees and to be given reasonable leadership opportunities within such committees and councils. What we do not need is token representation. We need to get to a point when gender, race, and religion are immaterial for people, where the only thing that matters is ability and vision. While we have made progress, we are not there yet. We need to continue to actively look for diversity when appointing individuals to committees and councils and when nominating for offices. Having said that, women, minorities, and those in private practice who want to become involved also need to actively volunteer when requests for applications are sent out.

What specific factors make up your criteria for moving up the arm for first-time native arteriovenous fistula creation?

The most important factor is the quality of the vein. If the patient does not have a suitable vein in the forearm, I would move up the arm. I am not a fan of balloon-assisted maturation and using substandard veins. I do, however, believe it is critical to reassess the veins once anesthetic has been administered, typically regional block, because vasodilation after anesthesia often reveals veins that once were considered suboptimal to actually be good conduits for fistula creation. Also, if the patient has significant arterial disease in the forearm vessels, I would move up the arm.

I frequently find that, although a Cimino fistula is not often feasible because many patients do not have quality veins in the distal forearm, the proximal radial artery is often ideal for access creation and decreases the risk of access-related hand ischemia by avoiding use of the brachial artery and is suitable for either cephalic or basilic vein fistulas. The issue we may need to assess more carefully is whether a "fistula first" policy is truly appropriate for all patients. Although it is clearly appropriate for younger, healthier patients, it may not be best for all patients, especially when it leads to prolonged catheter use in elderly patients or those with a short lifespan.

Given your findings that > 40% of patients undergoing elective endovascular aneurysm repair (EVAR) for infrarenal aortic aneurysms are feasible candidates for same-day discharge but with little to no cost benefit conferred, would you still offer this as an option? Do you think this approach would have an impact on patient satisfaction?

I believe that most patients would be happier going home the same day rather than spending the night in the hospital, assuming their surgeon believes it is safe. We are currently in the process of assessing patients' opinions on this matter.

Having said that, until such a time when insurers are willing to pay the institutions appropriately for a procedure that is done as a same-day surgery, it is not financially feasible to do so and is not routinely offered to patients. Clearly, same-day discharge for EVAR will not be available for the majority of patients in the foreseeable future, even as devices become lower profile and even if insurers agree to appropriate compensation. Same-day discharge would currently only be safe in a hospital setting, where admission is easily accomplished when needed, as about 60% of patients still require some further care after routine infrarenal EVAR.

In your experience involving three-dimensional (3D) printed models of complex abdominal aortic aneurysm (AAA) anatomy, how close was the model able to simulate the actual tactile feedback? What are the trade-offs of this technology if used to inform clinical decision-making in challenging interventional procedures?

The 3D models have significantly improved to enhance the tactile feedback. The current technology is markedly superior to the standard plastic 3D models, which are not

(Continued on page 121)

(Continued from page 118)
patient specific or realistic with tactile sensation, and to the computer-based simulators that currently do not give realistic tactile feedback for complex procedures. The computer-based simulators are more helpful for young trainees, as they can learn the basics of wire catheter skills. They are less helpful for complex procedures/more advanced practitioners because they do not have ideal tactile sensation. The 3D model process is currently time consuming and costly; thus, I would not recommend 3D models for straightforward anatomy, but think they are valuable for practicing surgeons with more complex procedures, as they allow the practitioner to determine where difficulties may arise and which catheters may be best to use for vessel tortuosity and stenoses. It is particularly helpful for complex fenestrated EVAR (FEVAR) or EVAR with complex snorkels/chimneys. I believe that insurers should consider reimbursement for this process in appropriate patients, as it enhances patient safety and would likely reduce the cost of the actual procedure (operative time, appropriate devices, catheters, wires).

Use of current 3D models for standard EVAR, thoracic EVAR, FEVAR, or chimneys/snorkels would not benefit the majority of practicing surgeons. As this technology continues to improve and models become more accessible, reusable, and less expensive, this may be an excellent modality for training the next generation with simulation to decrease radiation, time, and contrast in patients and familiarize them with the necessary manipulations of catheters, wires, and devices and the response in particular patient anatomies.

You have previously described lessons learned from motherhood and the intertwined dynamics of family and career. What advice do you have for female vascular surgeons starting families?

I think that if you want to have a family, you should. There is never a perfect time, but there are times that are not as good to have children—this partially depends on who will be available to help with child-rearing duties. Although we all hope to make an impact with our careers, the only place you are truly indispensable is as a parent/spouse. This applies equally to men and women.

Balancing is always difficult, and you will end up having to give up something, often losing some of the time for your own personal hobbies as you continue to contribute at work and at home. However, it is critical that you make time for the important events in your family's lives and that means being there for the soccer game, concert, or your anniversary. It means being involved with their education in helping with homework or going to parent-teacher nights. It is equally important to let your children know what you do and why you are doing it, so that they understand on the occasions that you do miss events, it is because you are helping patients and not that you don't care. It is also important to leave work at the office and spend true quality time with your family when you are home and the family is still awake—work can always be done when everyone else is asleep. Lastly, what we hope for both with our children and our trainees is that they will succeed even more than we have in life. ■

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