

EVAR Versus Open Repair for rAAA

Frank J. Veith, MD, discusses recent data that reveal the benefits of EVAR over open repair in ruptured aneurysm patients.



What can you tell us about the most recent data from your ongoing long-term study of endovascular aneurysm repair (EVAR) versus open repair in patients with ruptured abdominal aortic aneurysms (rAAAs)?

Dr. Veith: The use of EVAR for ruptured aneurysms remains controversial. Some people believe that the results of EVAR have already been proven to be superior to those of open repair of rAAAs. Others believe that the data that have been accrued to date are biased by the fact that EVAR is used somewhat selectively on better-risk patients. Moreover, there are a couple of comparative studies that fail to show any benefit of using EVAR compared to open repair. There are those who say we need a randomized, prospective, controlled study. However, there is one phase of our work that can be used to address this issue. Our study, which was basically done to collect the worldwide experience of EVAR for rAAAs, collected up-to-date data from 13 centers that used EVAR on all possible patients (all those that were anatomically suitable). These 13 centers did not exclude high-risk patients from EVAR. We compared the 30-day mortality rate for EVAR in these 13 centers with the 30-day mortality for open repair in these same 13 centers. Although it was not a randomized study, we think that it provided good evidence that EVAR is superior to open repair, because the mortality rate was dramatically better for EVAR—19.7% versus 36.3%.¹ One could still say that EVAR, which was used on all suitable patients, was used in better-risk patients because, coincidentally, good anatomy might have corresponded to better risk. However, we

don't think that's the case. Also, balanced against this possibility is the fact that many of the EVAR-treated patients from these centers—we estimate 10% to 15%—were patients who could be treated with EVAR, but who could have never been treated by open repair because they had hernias, scarred abdomens, colostomies, ileostomies, were unable to receive a blood transfusion, or were just too high risk. Therefore, we think our data proved quite conclusively that EVAR is better than open repair. However, it's still controversial, and that makes our work more interesting. There are those, particularly in Europe, who are conducting randomized studies. We don't think the randomized studies will be easy to do or that they will answer the question conclusively for a variety of reasons, but they are being done.

What are some of the differences in performing the EVAR procedure for rupture patients versus patients whose aneurysms are relatively stable?

Dr. Veith: Some of the differences relate to logistics. The rAAA patients come in and have to be treated emergently or urgently, which requires staffing and logistical differences. Unstable rAAAs can present under more stressful circumstances—they can occur in the middle of the night or on weekends—and one needs to have a team available to treat them. It is necessary, in our opinion, to have a protocol so that everything is organized and structured. Otherwise, it doesn't work very well; you can't find the equipment, devices, and so forth. You have to go through some rehearsals with the rAAAs, whereas with the elective aneurysms, you don't. Some of the rAAA patients are pretty stable, and then they behave like those with an

elective aneurysm and can be managed similarly. However, many of the rAAA patients are unstable, and they require special management systems.

How does the emergence of the endovascular option in this setting change the clinical scenario for ruptured patients from the hospital's standpoint?

Dr. Veith: The hospital has to make some investments in treating rAAAs, such as having a staff that's available at all times so they can do them, as well as having appropriate endografts and other special equipment in stock. They have to support arrangements or logistics that make rAAA treatment possible. Not every hospital is going to want to or be able to do that, so that suggests that there might be more centralization of hospitals that accept rAAA patients routinely. Obviously, they will get the best results as more experience accumulates, and that will further support centralization.

What emergency department/triage protocol changes might you recommend based on your experiences treating and studying EVAR for ruptured aneurysms?

Dr. Veith: The idea of having a protocol, plan, or system when dealing with rAAAs is very important. The referring doctors and the emergency department physicians have to be updated as to what should go on with an rAAA, who should be called, and how an rAAA might be better recognized in the early stages after rupture. Also, the emergency department has to be set up to either deal with the patients emergently, or there has to be a special shock unit or intensive care unit where the patient is taken for his initial evaluation and preparation. Ideally, there should be a computed tomography (CT) scanner in or close to the emergency department, and any necessary equipment should be available wherever the EVAR procedure is going to be carried out (shock angiography suite or an operating room equipped for all kinds of treatments, ie, both EVAR and open repair). We think the logistics of getting a very quick CT scan is important, although the EVAR procedure can be carried out in some circumstances without a CT scan—relying on angiographic measurements alone.

As a surgeon who has been the chairman of a prominent vascular meeting for decades, how would you describe the current challenges to offering this important educational and networking event?

Dr. Veith: In the United States and in Europe, the biggest challenge is that the relationship between physicians and industry for educational purposes is being examined, and industry is not as easily able to support educational meetings. If physicians and surgeons were only educated by reading journals or textbooks, it would be very difficult to

“... we think that it provided good evidence that EVAR is superior to open repair, because the mortality rate was dramatically better for EVAR—19.7% versus 36.3%.”

stay up to date. Textbooks are 5 to 6 years behind, and journals are probably 2 or 3 years behind, but a meeting like ours is more up to date. What's more, textbooks and journal articles often express the biases of their authors. However, a meeting has the opportunity to present a more balanced and less biased appraisal of the latest and best technology and procedures. You can have debates and contrary views presented; so from an educational point of view, we think there's no substitute for good meetings.

However, meetings are expensive because one has to bring in faculty and set up an environment in which these kinds of contemporary interactions between faculty members, which are most beneficial to the audience, can take place. That costs money, and I don't believe physicians can afford to attend a meeting like ours if we did not have industry support. The per capita cost to attend meetings like ours would be approximately \$4,000 if we didn't have industry support. To interfere with meetings will make physicians and surgeons less well informed and will ultimately be harmful to the care of patients.

It is acceptable to be concerned about the relationship between industry and continuing medical education (CME), but one has to be very careful not to throw the baby out with the bath water. In the past, there have been instances of marketing motivation being more important than educational motivation, but we think that our meeting tries to prevent that, and it does so by exposing all relevant aspects of the topic to discussion and varying views, some of which are not supportive of industry. For example, with carotid artery stenting (CAS), we were among the first to challenge the overuse of CAS for asymptomatic patients, and that was done in the form of debates. I think a lot of the things that were presented at our meeting several years ago started to make the vascular community question the indications for CAS and perhaps the overuse of CAS. So, the nuances of the relationship between industry and CME have to be appreciated, and the system has to be preserved, even though measures should be taken to prevent overzealous marketing of devices and drugs. It just makes sense. Conflicts of interest are everywhere, not just in medicine. For example, a congressman can vote for a particular bill because he is paid to do so. I think that constitutes far more of a conflict of interest than most of those that occur in meetings like ours because of the safeguards that are in place.

Every talk you listen to or every article you read has to be taken with a grain of salt, recognizing that authors have many biases other than financial relationships with industry. Maybe they are biased about their work or specialty; maybe they are biased about promoting their ability to do cases because money accrues from that. Bias and conflict of interest occur in almost everything we do, say, and write, and everyone has to recognize that. But it's not always financial; it's part of human nature. At our meetings, we try to either eliminate the biases as much as possible, or offset them by presenting contrary views.

The other challenge, of course, is that these are hard economic times. Physician and industry incomes are going to be reduced and taxed more—health care reform's role remains to be seen, and that may or may not have an impact on our meeting. For example, Russian vascular surgeons are very poorly paid. They obviously can't afford to come to a meeting such as ours, and their level of excellence and up-to-date use of justifiably good technology is diminished; consequently, their patients do not receive the kind of care that they might otherwise get. As one cuts the financial support of health care, the quality will possibly be decreased, and we hope that does not happen in the United States.

How has the emergence of EVAR changed the way you put together your scientific program, from its inception to its acceptance and through the current date? How would you describe the ebb and flow of its prominence in the meeting?

Dr. Veith: We were among the first to embrace EVAR in the United States, and that prompted us to give early recognition to endovascular approaches for the treatment of vascular disease, particularly vascular disease that requires major operations—such as thoracic and abdominal aneurysms. That recognition was always included in our meetings, and as other endovascular techniques became more popular, we adjusted our program accordingly to provide our attendees and the rest of the world with information about these techniques, the pros and cons. We've always had a balanced view, even with EVAR for elective aneurysms. It was necessary to prove that these techniques were better, simpler, safer, and more effective than the open operations they were replacing. It was also necessary to make sure that we knew which patients should be subjected to endovascular procedures and which should not. These became important parts of our meetings, and as endovascular techniques were applied to other vascular lesions besides just aneurysms, we modified the content of our meeting to reflect this.

We were very interested in endovascular approaches to all sorts of other vascular pathologies—obstructive lesions, traumatic lesions, aneurysmal lesions—from the very beginning. As we and others embarked on studying and evaluating these approaches, we continued to feature these reports as part of our meeting. I would say that more than half of our meeting deals with endovascular procedures, but we also feature new and exciting techniques in open surgery or a combination of open surgery and endovascular procedures—something we have always thought was important. I think our meeting reflects the cutting edge of what is happening in vascular disease treatment. It's also true that, with such a long history of open vascular surgery, there was not a lot that was new and undiscovered in that area, whereas with the endovascular procedures, almost everything in the beginning was new. Now the field is maturing, so there is less gold on the ground to be picked up. We always try to show what's new and interesting and different, challenging the current wisdom or the past wisdom. We were among the first vascular surgeons to realize that endovascular therapy was not hocus pocus and that it would probably have an important role, although that role still had to be defined, and it still has to be defined in some areas.

We like to showcase new and important developments at our meeting. One of the elements we have always thought to be important is the value of medical treatment in stabilizing atherosclerotic lesions and preventing disease progression. What is remarkable is that we get little support for our meeting from big pharma, who make statins and other drugs for treating vascular disease, and yet we feature their impact in all areas constantly because we think that is the right thing to do. Even though we might not make as much money from administering a drug as we would from doing a procedure, we should do it if it's right for the patient. To learn about such medical treatments is one of the reasons many doctors come to our meetings—to learn to do what is right and to get a fair appraisal rather than a biased, overly promotional view. ■

Frank J. Veith, MD, is Professor of Surgery and William J. von Liebig Chair in Vascular Surgery at the Cleveland Clinic in Cleveland, Ohio, and is Professor of Surgery at New York University Medical Center in New York. He has disclosed that he holds no financial interest in any product or manufacturer mentioned herein. Dr. Veith may be reached at (718) 549-3140; fjvmd@msn.com.

1. Veith FJ, Lachat M, Mayer D, et al. Collected world and single center experience with endovascular treatment of ruptured abdominal aortic aneurysms. *Ann Surg.* 2009;250:818-824.