EVAR: A Perspective From Across the Pond

Roger Greenhalgh, MD, discusses endovascular practice in the United Kingdom and the bearing that upcoming trial results will have on the future of EVAR.

In more than 3 decades of holding the Charing Cross International Symposium, you have no doubt seen numerous changes in the vascular landscape. How would you describe the advent of endovascular aneurysm repair (EVAR)—how it was received initially, and how it affected the vascular arena overall?

Dr. Greenhalgh: Since we began in 1978, the Charing Cross International Symposium has been visited by outstanding clinicians and innovators such as Andreas Gruentzig, MD, Julio Palmaz, MD, and Juan Parodi, MD. It was in 1990 that we heard of EVAR from Dr. Palmaz, whom I had visited after his great success with the Palmaz stent. I remember the hush that swept the hall as surgeons saw into the future that one of their dear operations would, in all probability, have a limited life. From that moment, there were two schools of thought. First, there were those who wished to encourage and drive the new endovascular way, and second, there were the conservative surgeons who refused to accept the new endovascular revolution. I have always been in the first group.

How did EVAR change the way you approached the curriculum of your annual course, as well as the way you instructed students at Imperial College in London?

Dr. Greenhalgh: From that day in 1990, we sought to educate ourselves and the vascular community by asking pioneers to tell of their early experiences. It was about 1993 when Dr. Parodi did the first EVAR procedure with me at Charing Cross and, of course, the students were aware of the history that was being made.

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In your role as a professor, how do you help students navigate through the many levels of clinical data, as well as seemingly contradictory datasets in the published literature?

Dr. Greenhalgh: It is not too difficult. As the great philosopher Bertrand Russell said, we should always go back to the original data and let them speak for themselves. The problem often comes from erroneous interpretation of facts rather than the data themselves. I find the results of trials like EVAR 1 remarkably in agreement so far, and EVAR 2 is unique, rather sadly, but no less important.

Beliefs regarding the ideal designs for clinical trials vary somewhat considerably from country to country. Do you think this is beneficial or counterproductive in the global effort toward better understanding the ideal applications of procedures such as EVAR?

Dr. Greenhalgh: Inevitably, there were useful registries, and these have been helpful on both sides of the Atlantic. I was in favor of an early test of technology against the gold standard, which was open repair. So, we designed EVAR 1 for patients who were fit for open repair and EVAR 2 for patients who were unfit for open repair (often incorrectly referred to as "high-risk patients"). DREAM, ACE, and OVER followed with a similar design as EVAR 1,

and thus together they will be very useful. The long-term results of EVAR 2 are eagerly awaited.

With long-term data available from numerous large-scale EVAR trials, what do you think are the most important questions that must be answered by future trials?

Dr. Greenhalgh: Never mind the future yet, we must see the 10-year results of EVAR 1 and 2, and there should be important messages when they are presented at the next Charing Cross Symposium in April 2010. For example, will the 10-year aneurysm-related mortality in EVAR 1 be maintained as it was at 4 years, or will it be lost in longer follow-up? If lost, why? Similarly, for EVAR 2, the aneurysm-related mortality in the two groups interests me at longer-term follow-up. The 4-year data had the look of a trend in these curves, and yet overall, there was no benefit from EVAR in EVAR 2; however, follow-up was only 4 years. Time has to elapse to allow the benefit of EVAR to reduce rupture rates, if it does. We shall see. This trial has been severely criticized, but I recommend listening to Bertrand Russell and going back to the hard data and ignore the spin.

What do you consider to be the ideal medical management regimen in post-EVAR patients?

Dr. Greenhalgh: Patients who have had EVAR have aortic aneurysmal disease and should be treated medically with that in mind. All should have statins and smoking cessation advice, as both factors have been shown to be associated with more rapid aortic expansion. Ace inhibitors are less certain to be effective but may be.

In your experience performing and studying EVAR, what do you believe has been the single greatest technological advancement related to the procedure?

Dr. Greenhalgh: Without a doubt, this must be the staged bifurcation systems that enable so many more aortas to be managed by EVAR and with a better chance of getting the length just right by allowing adjustment at the overlap of segments.

Which advancements are still necessary?

Dr. Greenhalgh: We need to be aware that EVAR has only had its preliminary assessment, but the United Kingdom's National Institute of Health and Clinical Excellence and other bodies will revisit this after 3 years, and cost effectiveness has been calculated on assumptions. It is fine thus far, but clinicians need the devices to be available at an acceptable cost compared with the alternative of open repair and compared with no procedure in the EVAR 2 situation. Easier deployment and ease of adjustment at both ends are benefits. The devices need to be durable in long-term follow-up with low incidence of readmittance for reoperation of complications, if necessary. Stent graft systems need to be more flexible and conform easily to patient anatomy. It seems that when a mismatch occurs with the stent graft chosen and anatomy of the patient, complications occur. This will need to be eliminated systematically, and the companies are doing very well in this so far. ■

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