

INVITED COMMENTARY

Endovascular Aneurysm Repair (EVAR) or Endovascular Aneurysm Control (EVAC)?

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In this latest addition to the EVAR literature, Väärämäki et al.¹ report their single institution experience of 282 patients treated by infrarenal EVAR using a single commercially available stent graft in the elective setting. At first glance, the data appear similar to many reports demonstrating EVAR is effective, yet not absolute, in the prevention of AAA related mortality. However on closer inspection there are one or two interesting details that add weight to the uncertainty relating to the widespread acceptance of EVAR as the default treatment option for patients with infrarenal AAA.

Post-EVAR re-intervention remains the main limitation of EVAR technology; a meta-analysis by Stather et al.² that included 25,078 patients undergoing EVAR reported a re-intervention rate of 30%. In the current study, Väärämäki et al. report relatively high graft related complications with 42% of patients demonstrating some evidence of “graft failure” during follow up.¹ To the undiscerning reader this may suggest poor performance of this particular EVAR system, particularly when 90% of EVARs included complied with the manufacturers indications for use (IFU). However, on closer inspection, Väärämäki et al. report only 14 patients (< 5%) lost to follow up at six years representing a high surveillance compliance rate that may partially explain the high graft complication rate reported. This viewpoint is further supported as the high graft related complication rate does not translate into high re-intervention rates with less than 25% of patients requiring a secondary procedure at a median follow up of six years; a very respectable figure when compared with the aforementioned meta-analysis.

To ensure long-term successful treatment of AAA by EVAR, manufacturers cite lifelong surveillance as mandatory. The rationale being that surveillance facilitates early identification and intervention for graft related complications that in turn prevent post-EVAR rupture as a result of the ‘underperforming’ stent graft. However, a number of institutions have proposed that surveillance is a costly endeavour that has limited value in identifying graft complications that require intervention.³ Indeed, most patients requiring re-intervention present symptomatically.⁴ The current study provides a degree

of real world balance to these two extremes with Väärämäki et al. reporting 10 patients with post-EVAR rupture during follow up despite a comprehensive surveillance programme that has evolved to include both computed tomography and duplex Doppler ultrasound. All patients with the exception of one had a graft complication detected during surveillance but only three patients had a complication that met the criteria for re-intervention. Should there be a lower threshold for re-intervention? On closer analysis it is apparent that one patient ruptured two months before their two year follow up surveillance scan despite evidence of sac shrinkage at their previous surveillance assessment. A further patient who declined follow up nine years post EVAR, ruptured five years later despite the sac shrinking to 3 cm at their last surveillance assessment. Thus, even with sac features that traditionally reassure the surgeon that all is well, EVAR can subsequently fail and fail quickly; where do you reset the threshold for re-intervention to in light of these two patients?

Although no conclusion can be surmised as to whether or not these complications could have been abated through different surveillance timelines, modalities, and threshold for re-intervention, there is a pragmatic message contained within this manuscript that has held true despite the advances in stent graft technology during the corresponding time period. That is, even in the seemingly ideal clinical scenario where EVAR is performed according to the manufacturers IFU, patients are compliant with surveillance, and re-intervention is diligently performed for graft related complications, post-EVAR rupture remains the Achilles heel of EVAR. It may be time to redefine endovascular aneurysm repair (EVAR) as endovascular aneurysm control (EVAC).

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