Endovascular repair (EVAR) has become a valid treatment option for infrarenal aortic aneurysm (AAA). To ensure durable repair a sufficient proximal sealing zone is required. Companies and physicians continue to claim that shorter proximal necks can be safely treated with standard EVAR, but longer-term results are scarce.

EVAR in shorter necks is not without risk. Aneurysmal disease is the phenotypical result of many complex systematic processes and interactions, and will be progressive in a number of patients, and result in aortic neck dilatation (AND). Therefore treating short necks, especially in younger patients, presents with longer-term issues. The fate of the proximal aorta after open surgery has been studied, showing expected disease progression of 0.2-0.6mm per year. [1] Interestingly, 20% of patients with thoraco-abdominal aortic aneurysms (TAAA) had previous AAA surgery. In our personal experience, 43% (63/146) of patients treated with branched grafts for TAAA had previous aortic surgery. In the abdominal aorta, more than 15% (61/369) of fenestrated cases had previous open repair or EVAR.

Several literature reports demonstrate AND after EVAR. [2-4] In a literature review report Diehm et al. raise concern that AND may jeopardize longer-term durability of EVAR. [5] More detailed studies demonstrate that there are two types of AND after EVAR: an immediate one correlated to the % of oversize, and a subsequent one, related to the progression of disease but irrespective of the device and % of oversizing. [6] There is no consensus whether AND is greater after EVAR than after open repair. [7, 8] Nevertheless, predictive factors and clinical consequences of AND have been identified: larger AAA, large proximal neck diameter, shorter necks, and circumferential neck thrombus all predispose to AND after EVAR. [9]

Conclusion: In view of the progressive nature of AAA, there are only very few arguments to treat hostile (i.e., short, large, thrombus) necks with standard EVAR, especially in younger patients, as longer-term durability may be jeopardized. One can also safely state that patients with adverse initial anatomy (such as a hostile proximal neck) should be followed strictly to monitor eventual AND.

References:


