

ENDOVASCULAR ABDOMINAL AORTIC ANEURYSM REPAIR:

DIFFERENT FACTORS AFFECT AORTIC SAC REMODELING OVER TIME

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Background: Endoleak and sac enlargement continue to be major issues in endovascular abdominal aortic aneurysm repair. Our earlier report demonstrated that perirenal fixation positively influenced aortic sac remodeling independent of endoleak at 6 months. With longer follow-up available, we reviewed our experience to assess for the long-term benefit of perirenal fixation on aortic sac remodeling.

Methods: This is a retrospective review of 96 aortic grafts placed electively from April 2000 to December 2002. Pre and postoperative aortic diameters were obtained from CT scans. Intraoperative angiograms and post implant CT scans were reviewed and patients were grouped by the proximity of the graft to the lowest renal artery. CT scans were obtained postoperatively at one month, six months, and then annually.

Results: Perirenal fixation resulted in mean diameter reduction by ANOVA at 6 months ($p=0.05$). Perirenal fixation was also an independent predictor for AAA diameter reduction at 6 months ($p<0.07$). The effect of perirenal fixation was lost however at 1 and 2 years. While not a factor at earlier time points, neck length became significant and an independent predictor for aneurysm diameter reduction at 2 years ($P<0.02$). The endoleak rate in our series was 7 % at 1 year and 6% at 2 years. Eighty-five percent of the endoleaks occurred when the stent graft was placed greater than 5mm below lowest renal artery, but this did not achieve statistical significance.

Conclusions: Over time different variables affect aneurysm remodeling. We found early aneurysm remodeling to be strongly effected by perirenal fixation. However, by one year this effect was no longer present. Aortic neck length became the only significant factor in aortic sac remodeling 2 years after EVAR.