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Endovascular Graft Migration: Aortic Cuffs are not Always the Answer

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OBJECTIVES: Graft migration, often due to proximal attachment failure, is a severe complication of EVAR. Aortic cuffs have been used for treatment with mixed results. The *Zenith® Renu AAA Ancillary Graft* is an endovascular graft with two configurations (converter and main body extension) intended to provide active proximal fixation for pre-existing endovascular grafts with failed or failing proximal fixation or seal. The outcomes of patient treatment with these two configurations are compared.

METHODS: From September 2005 to November 2006, a prospective, nonrandomized, post-market registry collected data on 151 patients treated in 95 institutions for proximal graft failure using the *Renu* graft. Indications for treatment of poor proximal fixation included migration and major endoleak. Ninety percent (136) of the patients had migration, 72% (108) had endoleaks, and 62% (94) had both endoleak and graft migration. Eighty-nine (59%) patients were treated with a converter and 62 (41%) with a main body extension.

RESULTS: There was no significant difference in the pre-procedural demographics between groups. The procedural success rate was 100% for both groups. At 30 days, all reconstructions were intact with no significant difference in endoleak rates (16% for converters [2 Type IA and 11 Type II], 8% for main body extensions [5 Type II]). At 12 months, with 62% of follow-up complete (55 converters, 32 main body extensions), there were no significant differences in endoleak rates (7 converters, 9 main body extensions). There were significant differences ($p < 0.05$) for both Type III endoleak rates and aneurysm rupture rates (0% converters, 8.3% main body extensions). Each patient with a Type III endoleak (3) was treated with a main body extension, had subsequent rupture, and underwent surgical conversion; of these patients, one survived conversion to open repair and two died postoperatively.

CONCLUSIONS: Proximal attachment failure can lead to potentially lethal EVAR complications. Although proximal graft main body extension using an aortic cuff is the easiest technique for endovascular graft salvage, there is a risk of developing a Type III endoleak with a higher failure rate when compared to a converter. Based on these data, some patients may require a more complex procedure using a converter for EVAR salvage.