Proximal Attachment Failure of AneuRx Grafts: Is There a Role for Talent Aortic Cuffs?

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Background
Proximal attachment failure after endovascular graft repair is a difficult management problem with potentially devastating complications often associated with challenging proximal neck anatomy, suboptimal graft deployment, and graft migration. Aortic cuffs, with or without transrenal fixation have been used as an accepted alternative for the endovascular salvage of these failed reconstructions without substantial clinical validation. We evaluated the early safety, efficacy, and outcomes after endovascular salvage of failed AneuRx graft reconstructions using Talent transrenal cuffs and compared them with infrarenal aortic cuffs.

Methods
Databases at two tertiary medical centers were used to identify all patients who underwent endovascular aneurysm repair (EVAR) with the AneuRx device since its approval by the United States Food and Drug Administration (577; group 1: 392, group 2: 185). During follow-up, 32 patients (5%) developed proximal attachment failure defined as endoleaks (types I or III) and/or significant caudal graft migration requiring treatment. These patients were treated with infrarenal aortic cuffs (15), Talent cuffs (8), AUI devices (1), bifurcated devices (2), or surgical conversion (4). One patient remained untreated due to treatment refusal. Follow-up of all patients treated endovascularly consisted of spiral computed tomography (CT) scans at 1, 6, and 12 months and yearly thereafter. Failure of aortic cuffs was defined as device migration, the presence of type I or III endoleaks, or a combination thereof.

Results
Twenty-six patients were treated endovascularly for proximal attachment failure (migration 92%; endoleaks: type I 54%, type III 19%) at a follow-up of 25.7 ± 14.3 months with a 100% technical success rate. There was no perioperative mortality or major complications. Thirty-eight percent of patients (3 of 8) treated with Talent cuffs at a follow-up of 15.4 ± 8.0 months after the secondary procedure and 7% (1 of 15) treated with infrarenal cuffs (follow-up 13.5 ± 11.5 months) had a failed intervention. There was no difference in freedom from secondary failure (85.7% versus 90.9% at 12 months) between the two groups. One patient with a failed Talent cuff (type I endoleak) was treated with infrarenal cuffs and an aortic stent while the other two (component separation) are awaiting treatment. The patient with a failed infrarenal cuff (type I endoleak) was treated with an aortic stent.

Conclusions
Secondary interventions with aortic cuffs for proximal graft failure have a moderate risk of recurrent failure. Talent cuffs, with their trans-renal attachment and larger diameters, seemed an excellent option for the salvage of failed AneuRx grafts but the early results are discouraging. This is due to the unfavorable anatomy being treated and the short body of the AneuRx graft that limits component overlap. Poor stability and component separation continue to be a serious problem in this patient population. A new generation of endovascular components with increased pararenal stability and better component overlap are needed to improve the endovascular salvage of failed AneuRx devices placed in patients with complex neck anatomy.