

Effectiveness of Coiling in the Treatment of Endoleaks following Endovascular Repair

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Background

Persistent endoleaks are a common problem following endovascular aneurysm repair (EVAR) of abdominal aortic aneurysms (AAAs), and the best method of treatment has been an issue of debate. Some experimental evidence has suggested that coiling may not be an effective method because it allows transmission of pressure across the coils with continued expansion of the sac. We reviewed our experience with endoleak coiling to assess the degree of clinical success of this treatment.

Methods

A retrospective review of patients with type I or type II endoleaks treated solely by coiling over a 7-year period (1997 to 2003) was performed. All endoleaks had been observed for at least 6 months prior to intervention to detect spontaneous resolution. All coils were delivered by selective catheterization of the endoleaks. For type II endoleaks, the branches were all coiled at their junction with the sac when feasible and the endoleak cavity was packed. Clinical success was defined as cessation of endoleak on follow-up computed tomography (CT) as well as no further aneurysmal growth (≤ 5 mm minor axis).

Results

Twenty-eight patients had their endoleak treated only with coils. There were 22 Ancure, 2 Excluder, 2 AneuRx, and 2 Lifepath endografts in this patient cohort. Procedural morbidity was 0%. Mean follow-up after coiling was 18 months (range 1 to 60 months). Clinical success was achieved in 15 of 19 (79%) patients with type II endoleaks and 8 of 9 (89%) patients with type I. Three patients, all with type I endoleak, required more than one episode of coiling, whereas two others, both with type II lumbar endoleaks, required repeat angiography owing to inability to access the leak during the first attempt. There were two proximal and six distal type I endoleaks (two aortic, six iliac) successfully treated, whereas the type II successes included eight IMA and seven sole lumbar endoleaks. Five patients continued to show evidence of endoleak over time: two were associated with aneurysm growth leading to conversion in one patient, two with type II endoleaks are stable, and the sole type I with continued perigraft flow has shown significant shrinkage of the sac and continues to be observed 18 months later. No ruptures were noted during follow-up.

Conclusions

Coiling as the sole method of endoleak management may be a suitable treatment option in selected patients. Clinical success can be expected in over 80% of patients with type II and select type I endoleaks with minimal morbidity.