

Symptomatic Sac Enlargement and Rupture due to Seroma after Open Abdominal Aortic Aneurysm Repair: Implications for Endovascular Aneurysm Repair and Endotension

NOTES

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Purpose

We report 5 patients in whom a symptomatic perigraft seroma developed within the aortic sac, without vascular endoleak, after open repair of an abdominal aortic aneurysm (AAA) with polytetrafluoroethylene (PTFE) graft.¹ We also discuss possible relationships of this phenomenon to endovascular repair of AAAs.

Patients and Methods

Over 18 years, 1,156 patients underwent repair of an AAA by one of the authors (B.M.B.). Of these, 1,084 underwent open repair, 256 with PTFE grafts. Five patients in the PTFE group (2.3%) returned at a mean of 4.5 years with acute abdominal or back pain and enlargement of the aortic sac. Mean diameter of the aneurysms was 5.9 cm preoperatively and 8.1 cm at readmission. There was no evidence of vascular endoleak on computed tomography (CT) scans but one patient had a retroperitoneal hematoma.

Results

Laparotomy in four patients disclosed a seroma containing firm rubbery gelatinous material under tension, histologically identified as amorphous eosinophilic material containing thrombus and degenerate blood cells in all cases. Rupture of the sac was confirmed in the patient with a retroperitoneal hematoma. The sac contents were evacuated and the integrity of the underlying grafts and anastomoses was confirmed before sac reduction, with imbricating sutures, and closure was performed. One patient died at 8 months of an unrelated cause: the other three patients remain well at mean follow-up of 12 months. The fifth patient received conservative treatment but returned with abdominal pain 2 months after a regular follow-up consultation and just 3 years after the original presentation. Contrast CT revealed that the aneurysm sac had increased in diameter from 7.3 cm to 10.5 cm. In addition, it demonstrated a circular contiguous mass 2 cm in diameter of similar density as the sac contents, considered to have resulted from rupture of the sac. He was treated conservatively and remains well.

Conclusions

These findings of sac enlargement without vascular endoleak after open AAA repair are reminiscent of sac enlargement in the absence of endoleak after endovascular AAA repair. This has been referred to as endotension. The comparatively benign outcome in 5 patients with symptomatic sac enlargement, including 2 patients with rupture, after open AAA repair provides data to support a circumspect approach to endotension, especially in patients with asymptomatic disease, which has been reported as occurring in almost half of patients who received a PTFE Excluder endograft.

Addendum

Extending endoleak and endotension terminology to include complications of open aneurysm repair.

Endoleak and endotension have proved to be useful additions to the terminology of endovascular aneurysm repair. As currently defined, both terms are restricted to describe complications of the endovascular method of aneurysm repair.

Recent experience has led us to propose, in a letter to the editors of the Journal of Vascular Surgery, extending these two terms to include complications of open aneurysm repair.² In reporting the above five patients, it would have been helpful to be able to use the term endotension to describe the patients in this report and, indeed, the review process suggested using the term without endoleak to replace in the absence of communication between the sac and the arterial blood flow.

In reply, the editors of the Journal of Vascular Surgery supported the proposal of expanding the use of endoleak terminology to specific situations after open aneurysm repair and will consider this standard terminology for articles published in the Journal in the future.

References

1. Thoo CHC, Bourke BM, May J. Symptomatic sac enlargement and rupture due to seroma after open abdominal aortic aneurysm repair with polytetrafluoroethylene graft: implications for endovascular repair and endotension. *J Vasc Surg* 2004;40:90-5.
2. May J, Bourke BM. Extending endoleak and endotension terminology to include complications of open aneurysm repair. *J Vasc Surg* 2005;41:178-9.