Intraoperative intrasac thrombin injection to prevent type II endoleak after endovascular abdominal aortic aneurysm repair.

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Abstract:

PURPOSE: To report a prospective, nonrandomized pilot study to determine whether fibrin glue aneurysm sac embolization at the time of endovascular aneurysm repair (EVAR) is a safe and effective procedure to primarily prevent type II endoleaks.

METHODS: Between June 2003 and December 2005, 84 consecutive patients (79 men; mean age 73.8+/-7.8 years, range 64-86) with degenerative infrarenal abdominal aortic aneurysm underwent EVAR with bifurcated stent-grafts and fibrin glue injection into the aneurysm sac at the conclusion of the endovascular procedure. A total of 424 imaging studies and 348 visits were recorded during the study period and reviewed.

RESULTS: Selective catheterization of the aneurysm sac and fibrin glue injection immediately after initial stent-graft deployment was successful in 83 (99%) of 84 cases; there was one failure to access the excluded aneurysm sac due to severe iliac artery calcification. The estimated primary and assisted clinical success rates at 2 years were 91.3% and 98.8%, respectively, but the major findings were the low rate of delayed type II endoleak (2.4%) and the statistically significant decrease in the maximum transverse aneurysm diameter (50.40+/-6.70 versus 42.03+/-6.50 mm, p = 0.0001) at follow-up. In addition, of 31 patients available for 24-month follow-up, 14 (45.2%) patients showed a reduction in maximum transverse aneurysm diameter by >or=5 mm; 16 (51.6%) patients had no significant changes, whereas only 1 patient showed a >5-mm enlargement.

CONCLUSION: This clot engineering approach to aneurysm sac embolization at the time of endografting appears to be safe and may spare the patient a repeated catheter-based intervention or surgical procedure.