Aneurysm sac "thrombization" and stabilization in EVAR: a technique to reduce the risk of type II endoleak.

Authors: Ronsivalle S, Faresin F, Franz F, Rettore C, Zanchetta M, Olivieri A

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Abstract:

PURPOSE: To evaluate the reduction in type II endoleak risk after introducing a new prevention method, "thrombization" or clotting of the aneurysm sac, during endovascular aneurysm repair (EVAR) versus the standard EVAR technique.

METHODS: From September 1999 to December 2008, 469 consecutive patients underwent EVAR for AAA at our institution. In 2003, the injection of fibrin glue with or without microcoils into the aneurysm sac was added to the EVAR treatment plan ("thrombization" technique). Patients who did not meet the inclusion criterion (at least 1-year follow-up imaging) were censored at the end of 2007, leaving 404 patients eligible for the study: 224 patients (210 men; mean age 71.9+/-8.5 years, range 25-88) undergoing EVAR alone from September 1999 to May 2003 (group 1) compared to 180 patients (161 men; mean age 72.6+/-8 years, range 46-89) who underwent EVAR + thrombization from June 2003 to December 2006 (group 2).

RESULTS: The 2 treatment groups were similar with regard to aneurysm morphology. No allergic or anaphylactic reactions were encountered related to the fibrin glue. Over median follow-up times of 72 months in group 1 and 26 months in group 2, there were 34 (15.2%) endoleaks in group 1 versus 4 (2.2%) in group 2 ($p<0.0001$). The incidence of type II endoleak was 0.25/100 person-months for group 1 versus 0.07/100 person-months for group 2. The preventive sac thrombization technique was significantly associated with a reduced risk of type II endoleak (HR 0.13, 95% CI 0.05 to 0.36;

p<0.0001) regardless of the type of stent-graft fixation (infrarenal versus suprarenal).

CONCLUSION: The preventive method of intrasac "thrombization" using fibrin glue injection with or without the insertion of coils proves to be a simple, low cost, safe, and effective technique to significantly reduce the risk of type II endoleaks irrespective of the endograft used.