should be taken on patients >75 years old and those on warfarin preoperatively.

Fate of Type I Endoleaks Following EVAR

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Objectives: This study evaluated the incidence and outcomes of secondary procedures for Type I endoleaks following endovascular aneurysm repair (EVAR).

Methods: From 2002 to 2013, 2496 patients underwent EVAR for treatment of nonruptured (n = 2315; 93%) and ruptured (n = 181; 7%) abdominal aortic aneurysms (AAAs). Postoperative follow-up included clinical examination, ultrasound, and computed tomography at 1, 6, and 12 months, and yearly thereafter. Patients with Type I endoleaks were either observed without any intervention, underwent endovascular interventions, or surgical explant. Data was prospectively collected.

Results: Of 2496 patients that underwent EVAR, over a mean follow-up of 57 months, 202 (8%) patients were discovered to have Type I endoleaks from proximal (n = 111; 55%), distal (n = 69; 34%), or proximal and distal (n = 22; 11%) stent graft fixation sites. The mean age was 74 years, and the maximum AAA diameter was 6.0 cm. Indications for treatment included asymptomatic Type I endoleaks (n = 171; 85%), symptomatic aneurysms (n = 14; 7%), or aneurysm rupture (n = 17; 8%). In 49 (24%) patients, Type I endoleaks resolved without any further intervention. Treatments included embolization procedures only in 17 (8%), stent graft extensions only in 103 (51%), embolization and stent graft extensions in 19 (9%), and stent graft explant in 14 (7%). Multiple endovascular procedures were required in 41 (20%) patients. Overall operative mortality for all Type I endoleaks was 1.5%; all deaths occurred in patients that presented with ruptured AAAs (3/17; 18%).

Conclusions: Our single center long-term EVAR experience indicates that 8% of patients develop Type I endoleaks. The vast majority of Type I endoleaks can be treated by endovascular means with limited mortality, and embolization procedures alone can be effective in select patients. If untreated, 24% of Type I endoleaks resolve spontaneously, while 26% lead to AAA rupture.

Prospective Multicenter International Trial of EndoAnchor Fixation and Sealing of Aortic Endografts: Indications for Use and Early Results in the ANCHOR Trial

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Objectives: Endograft fixation and sealing are important determinants of durability after endovascular abdominal aortic aneurysm repair (EVAR). This study was undertaken to assess the safety and efficacy of EndoAnchors to augment proximal fixation and sealing in a globally-setting.

Methods: The 149 subjects have been enrolled at 23 U.S. and four European centers over 15 months through mid-April, 2013. EndoAnchors implanted prophylactically at initial EVAR ("PRIMARIES," N = 111; 74%) or therapeutically for existing type Ia endoleak/migration after the index EVAR procedure ("REVISIONS," N = 38; 26%). The primary endpoint was successful EndoAnchor deployment without type Ia endoleak/migration over time. A conical neck was defined by diameter increase >10% over 10 mm length.

Results: The endografts used were Endurant (57; 51%), Excluder (30; 27%), and Zenith (24; 22%) in PRIMARIES, and Excluder (7; 18%), AneuRx (10; 26%), Talent (6; 16%), Zenith (5; 13%), Endurant (5; 13%), and other (5; 13%) in REVISIONS. Proximal necks averaged 18.6 ± 11.2 mm in length (28% ≤10 mm), 25.1 ± 4.5 mm in diameter, with 33 ± 22 degrees of angulation; 41% were conical. An average of 5.3 EndoAnchors were implanted in PRIMARIES and 6.2 in REVISIONS. The most common indication for EndoAnchor use was a hostile neck in PRIMARIES (88%) and existing type Ia endoleak in REVISIONS (76%). Procedural success was confirmed in 99% (109/110) of the PRIMARIES and 92% (35/38) in REVISIONS. Type Ia endoleaks were absent at 1-month in 96/99 (97%) of PRIMARIES and 32/36 (89%) of REVISIONS.

Conclusions: EndoAnchor use was associated with satisfactory early results when high-risk anatomy was encountered at an initial EVAR procedure and was successful in repairing most proximal neck problems in EVAR revisions. Long-term data will be collected to assess the effectiveness of EndoAnchors in preventing late complications.