Results of the ANCHOR prospective, multicenter registry of EndoAnchors for type Ia endoleaks and endograft migration in patients with challenging anatomy.

Abstract:
Proximal attachment site complications continue to occur after endovascular repair of abdominal aortic aneurysms (EVAR), specifically type Ia endoleak and endograft migration. EndoAnchors (Aptus Endosystems, Sunnyvale, Calif) were designed to enhance endograft proximal fixation and sealing, and the current study was undertaken to
evaluate the potential benefit of this treatment. During the 23-month period ending in December 2013, 319 subjects were enrolled at 43 sites in the United States and Europe. EndoAnchors were implanted in 242 patients (75.9%) at the time of an initial EVAR procedure (primary arm) and in 77 patients with an existing endograft and proximal aortic neck complications (revision arm). Technical success was defined as deployment of the desired number of EndoAnchors, adequate penetration of the vessel wall, and absence of EndoAnchor fracture. Procedural success was defined as technical success without a type Ia endoleak at completion angiography. Values are expressed as mean ± standard deviation and interquartile range. The 238 male (74.6%) and 81 female (25.4%) subjects had a mean age of 74.1 ± 8.2 years. Aneurysms averaged 58 ± 13 (51-63) mm in diameter at the time of EndoAnchor implantation (core laboratory measurements). The proximal aortic neck averaged 16 ± 13 (7-23) mm in length (42.7% <10 mm and 42.7% conical) and 27 ± 4 mm (25-30 mm) in diameter; infrarenal neck angulation was 24 ± 15 (13-34) degrees. The number of EndoAnchors deployed was 5.8 ± 2.1 (4-7). Technical success was achieved in 303 patients (95.0%) and procedural success in 279 patients (87.5%), 217 of 240 (89.7%) and 62 of 77 (80.5%) in the primary and revision arms, respectively. There were 29 residual type Ia endoleaks (9.1%) at the end of the procedure. During mean follow-up of 9.3 ± 4.7 months, 301 patients (94.4%) were free from secondary procedures. Among the 18 secondary procedures, eight were performed for residual type Ia endoleaks and the others were unrelated to EndoAnchors. There were no open surgical conversions, there were no aneurysm-related deaths, and no aneurysm ruptured during follow-up. Use of EndoAnchors to treat existing and acute type Ia endoleaks and endograft migration was successful in most cases. Prophylactic use of EndoAnchors in patients with hostile aortic neck anatomy appears promising, but definitive conclusions must await longer term follow-up data.