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VS 5.

Video Presentation

Percutaneous Endovascular Aortic Aneurysm Repair Using Ultrasound-guided Access: The Key to Expand Selection Criteria

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Background: Percutaneous access is as safe as open access for endovascular aortic aneurysm repair (EVAR) in patients with favorable iliofemoral anatomy. Severe femoral artery calcification, small vessels and obesity have been considered relative contraindications to percutaneous EVAR. The purpose of this presentation is to demonstrate the utility of ultrasound-guided access for percutaneous EVAR and the details of the technique.

Technical Description: Ultrasound is used to assess anatomic femoral artery features, including arterial depth, length, calcification, location of the bifurcation and minimum and maximum diameter. Direct vascular access under ultrasound-guidance is performed avoiding either areas of anterior calcification or disease or access of the superficial or deep femoral arteries. The "Preclose" technique is then used using two Proglide devices (Abbott Vascular, Redwood City, CA) before percutaneous insertion of 12F to 24F sheaths. Each step of this technique is displayed and reviewed.

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SS28.

A 3-Dimensional Analysis of Juxtarenal, Pararenal, and Suprarenal Abdominal Aortic Aneurysms

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Objectives: Anatomic suitability remains the rate-limiting constraint for treatment of abdominal aortic aneurysms with endovascular repair. We sought to evaluate the morphological differences between juxtarenal, pararenal, and suprarenal aneurysms.

Methods: From 2005-2009, a single center, retrospective review was performed. Consecutive patients undergoing open juxtarenal, pararenal, and suprarenal aortic aneurysm repair were included. Preoperative 3-dimensional reconstructed computed tomographic angiograms were queried and evaluated utilizing AquariusNET (TeraRecon, Inc.). Longitudinal, axial, and diameter measurements were obtained for all branch vessels, the aneurysm, and aortic bifurcation.

Results: During the 5-year period, 426 open juxtarenal, pararenal, and suprarenal abdominal aortic aneurysms were performed, and 221 patients were identified with electronic imaging for review. Seventy-eight percent were juxtarenal, 15% pararenal, and 7% suprarenal aneurysms. Mean aneurysm diameter was 62 ($\pm$ 14) mm. No differences in celiac artery (20° ($\pm$ 20)), superior mesenteric artery (10° ($\pm$ 14)), or right renal artery angle (-58° ($\pm$ 20)) were identified. However, when the left renal artery was lowest, it was more anterior in pararenal (68° ($\pm$ 24)) and suprarenal aneurysms (68° ($\pm$ 26)) compared to juxtarenal aneurysms (90° ($\pm$ 21), $p < 0.05$). The distance between the celiac artery and superior mesenteric artery (19 ($\pm$ 8) mm) and the distance from the highest renal artery to the superior mesenteric artery (11 ($\pm$ 8) mm) were constant among aneurysm types. Proximal aneurysms displayed more variability in the distance between renal arteries, juxtarenal (15 ($\pm$ 11) mm) and suprarenal (12 ($\pm$ 13) mm), compared to juxtarenal aneurysms (6 ($\pm$ 4) mm, $p < 0.05$).

Conclusions: Juxtarenal aneurysms have relatively uniform branch anatomy and therefore may serve as a template for a standardized fenestrated device for treatment of symptomatic patients. This approach would allow treatment of nearly 80% of patients with pararenal aneurysmal disease.

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SS29.

Endovascular Chimney (Snorkel) Technique vs Open Surgery for Repair of Juxtarenal and Suprarenal Aneurysms

Kevin J. Bruen, Robert J. Feezor, Peter R. Nelson, Adam W. Beck, Thomas S. Huber, W. Anthony Lee. Vascular Surgery, University of Florida, Gainesville, FL

Objectives: The "chimney" technique has been used with conventional endografts to extend the proximal landing zone (PLZ) for repair of juxta-/suprarenal aneurysms. We compared this technique with open surgical repair.

Methods: Retrospective cohort study of juxta-/suprarenal aneurysms repaired between 04/2008 and 12/2009: 21 patients treated using EVAR (20 Zenith, 1 Excluder) w/chimneys [ENDO] compared with 21 anatomically-matched open repairs [OPEN] selected in consecutive, reverse chronological order. Outcomes are expressed as medians and compared using the Mann-Whitney test.

Results: For ENDO, 36 chimney stents (1.7/patient), 8—SMA and renal, 7—bilateral renals, 5—single renal, 1—SMA, were successfully placed in 37 branches (97%); 1 renal occluded from loss of guidewire. For OPEN, there were 15 tube and 6 aortoiliac grafts. Perioperative data are shown in Table. Kaplan-Meier patency at 1 and 6 months was 97.3%. There was one type 1a endoleak at 30-days. Despite a lower preoperative eGFR in the ENDO group (52 vs 60 mL/min/1.73m2, $p = 0.017$) the median postoperative change was similar (-0.5 vs 0 mL/min/1.73m2, $p = 0.841$); 2 OPEN, but no ENDO, patients required dialysis.

Conclusions: Chimney technique may be a viable option for repair of suprarenal aneurysms and an "off-the-shelf" alternative to custom fenestrated/branched endografts. Perioperative benefits of endovascular repair are maintained with preservation of end organ function. Late stent patency and proximal fixation remains to be determined.

TABLE	*ENDO*	*OPEN*	*P*
Proc Time (min)	235	213	0.65
EBL (ml)	350	1500	0.001
PRBC transfusion (units)	1	3	0.007
ICU stay (days)	1	4	0.001
Total LOS (days)	5	10	0.021
Mortality (n)	1 (4.8%)	1 (4.8%)	1.0
Adverse Events (n)	29	61	
All (n/patient)	1.4	2.9	0.75
Severe (n/patient)	0.3	0.7	0.60

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SS30.

Midterm Outcomes of the Zenith Renu Ancillary Graft: Results From a Post-market Registry

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Objectives: The Zenith Renu AAA Ancillary Graft, which gained FDA approval in June 2005, provides active proximal fixation for treatment of pre-existing endografts with failed or failing proximal fixation or seal. The purpose of this study is to evaluate the midterm outcome of treatment with this device.

Methods: From 09/2005 to 11/2006, a prospective, nonrandomized, post-market registry was implemented, collecting experience from 151 cases (89 converters and 62 main body extensions) at 95 institutions. Preoperative indications, procedural and post-implantation outcomes were analyzed. Technical success and clinical success were determined as defined by the SVS reporting standards.

Results: Patients were predominantly male (87%) with mean age of 77 years. The interval between the original endograft implantation to Renu treatment was 43.4 + 18.7 months. The indications for treatment were endoleak (n = 108), migration (n = 136), or both (n = 94). Technical success was 98% with 2 cases of intraoperative conversion and 1 persistent type IA endoleak. The mean follow-up for the cohort was 18.5 + 12.7 months (range 0-48). Overall, 23 patients had treatment failures which included at least one of the following: 8 type I/III endoleaks, 1 migration, 7 aneurysm enlargement >5mm, 3 aneurysm ruptures, 8 conversions (with 6 after 30 days), and 5 identified procedure-related deaths. Overall, the clinical success for the entire cohort during the follow-up period was 84.7%.

Conclusions: The post-market registry data confirms that the Zenith Renu AAA Ancillary Graft can be used to treat failed endovascular repairs from proximal attachment failures. However, this is associated with a high rate of midterm failure. While we can salvage failed endovascular repairs, these results emphasize the importance of patient and device selection during initial endovascular aneurysm repair. In this challenging population with endovascular graft failure, surgical conversion should be considered for those that are medically fit for open repair.

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C4: Peripheral Vascular Surgical Society Paper Session I

PVSS2.

Effect of Gender on Long-term Survival After Abdominal Aortic Aneurysm (AAA) Repair: Results From Medicare National Database

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Objectives: Historically, women have higher mortality rates after AAA repair than men. Although endovascular repair (EVAR) has improved these rates, how gender affects long-term survival after AAA repair is unknown. We analyzed survival in matched cohorts after EVAR and open (OAR) repair for elective (eAAA) and ruptured (rAAA) abdominal aortic aneurysm.

Methods: From the Medicare Beneficiary Database, we compiled a cohort of patients who underwent OAR or EVAR repair for either eAAA (n = 214, 802) or rAAA (n =