repair of aortic pathology, frequently in a single stage, with acceptable outcomes.

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SS8.

Consecutive Patients with Complex Aortic Aneurysms

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**Objectives:** Chimney and periscope grafts (CP) allow maintaining patency of aortic branches when their orifices require coverage by aortic stentgrafts. We present a series of 77 patients in which CP have been used to treat complex thoracic and/or abdominal aneurysms or to simplify hybrid procedures.

**Methods:** We analyzed retrospectively 77 consecutive patients treated from February 2002 to December 2011. Aneurysms involved the visceral aortic segment (67), the aortic arch (10) or both (1). Sixty-one patients were treated with CP and EVAR (CP-EVAR) in a one stage procedure and 16 patients (21%) were treated sequentially by a hybrid approach in which partial surgical debranching was followed by CP-EVAR. Thirteen patients (17%) were treated for an aortic rupture. Viabahn® or Hemobahn® stentgrafts were used as CP.

**Results:** 160 CP were used to revascularise 11 aortic arch branches and 149 retrovisceral branches. Technical success of CP was 99.4% (159/160). 30-day mortality was 7% (5/77) and 15% (2/13) for the ruptured cases. During a mean follow-up of 11.83 months (range 1 -100 months), all but three CP remained patent. Endoleaks (ELs), mainly type II, were observed in 33%. Six patients (8%) with attachment ELs (Ia or Ib) underwent successful secondary sealing procedures. Mean aortic diameter decreased by 12.73% (mean: 5.9; SD: 11.76). Thirteen patients followed with CTA >12 months (range 14-100 months) had stable reconstructions without ELs or aneurysm enlargement.

**Conclusions:** Chimney and periscope grafts are a safe and effective way to facilitate EVAR or hybrid procedures for complex aortic aneurysms. Moreover, these techniques, using only off-the-shelf endograft components, are useful to treat ruptured aneurysms involving vital aortic branches. Mid-term results (up to 8 years) are promising. However, long-term durability needs to be confirmed.

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**VS2.**

**Video Presentation**

Thoracic Endovascular Aortic Repair with Left Subclavian Artery Laser Fenestration

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**Background:** A significant need exists for a versatile and accessible method to revascularize aortic branches during thoracic endovascular aortic repair (TEVAR). We present a video of an emergent zone II TEVAR with revascularization of the left subclavian artery (LSCA) with retrograde laser fenestration.

**Technical Description:** We present a 58 year old African American female with a symptomatic thoracic aortic aneurysm secondary to a chronic type B thoracic aortic dissection. Emergent TEVAR was carried out using Captiva (Medtronic, Minneapolis, MN) endografts. The proximal endograft was positioned immediately distal to the bovine arch orifice of the innominate and left carotid arteries. Through retrograde left open brachial artery access, we placed an 8.5 French St. Jude lamp septal, 45 degree sheath (St. Jude Medical, Saint Paul, MN), which provides a gentle preformed angle at the tip. An 0.018” Platinum Plus wire (Boston Scientific, Natick, MA) through a 2.5mm laser catheter (Spectranetics, Colorado Springs, CO) was then placed at the ostium of the LSCA perpendicular to the endograft. After deployment of the endograft, laser energy of 45 millijoules/mm2 at 25 pulses/second was applied in conjunction with gentle laser-endograft contact pressure for 3-5 seconds to create a fenestration. The 0.018” wire was then advanced through the laser catheter into the endograft lumen and exchanged for a stiff 0.035” wire. After endograft predilation using a 6mm balloon, an ICAST covered 9x38mm balloon expandable stent (Atrium, Hudson, NH) was deployed approximately ¼ into the lumen and ¾ into the branch vessel. The endograft portion of the covered stent was then flared. Finally, completion aortograms were performed to demonstrate TEVAR and left SCA fenestration patency with no endoleaks. Computed tomography angiography (CTA) was performed prior to discharge and at 1-3 month intervals.
postprocedure to assess for TEVAR and left SCA fenestration patency, endoleak, and aneurysm/dissection exclusion.

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SS10.

The Sandwich Technique for Hypogastric Endorevascularization Using Off The Shelf Devices: Three-Year Results

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Objectives: To analyze early and mid-term outcomes in patients undergoing the Sandwich Technique, hypogastric artery (HA) endorevascularization (ER), to treat complex aortoiliac aneurysms (AlA), isolated common iliac artery aneurysm (ICIAA) and abdominal aortic aneurysms (AAA) associated with bilateral short, non-diseased common iliac artery (CIA).

Methods: Between October 2008 and November 2011 52 patients undergoing elective endovascular aneurysm repair (EVAR) for AIA, ICIAA, or AAA with short, non-diseased CIA were treated using the Sandwich Technique. Patients were followed through office visits and CTA Demographic, clinical, and anatomical parameters and outcomes were recorded. Statistical analysis included descriptive and non-parametric statistical tests (Kruskal-Wallis and Dunns post Test) for aneurysm sac diameter assessment (Prism 5, Graphpad Software).

Results: The mean age of the cohort was 73.8 years and 92.3% of patients were male. The mean follow-up was 15 ± 7.4 months. There was no peri-operative mortality. 60 HA ER (eight patients submitted a bilateral HA ER) were performed during this prospective study. HA ER technical success was 100%. Two-year primary HA ER patency was 93.3%. One late type III endoleak have appeared at 6 months and was not associated with aneurysm sac enlargement. At three-year, the overall mortality rate was 3.8%, all unrelated with aneurysm sac rupture. The assessment of the CIA aneurysm sac diameter by CTA revealed that 38.3% CIAA had a significant decrease (Ê least 5 mm), 60% remained stable and 1.7% had an increase of 6mm. Statistical significance (P<.05) was reached only for comparisons between baseline (0 months) and 30 month measurements (P=.027).

Conclusions: The Sandwich Technique, developed to overcome current anatomical and device constraints, has the promise of expanding the limits of endovascular aneurysm repair (EVAR) in a safe, easy to perform, and cost-effective manner. It is a useful tool in the armamentarium of the endovascular surgeon.

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SS11.

Management of the Left Subclavian Artery and Stroke after TEVR: Lessons from 1000 Cases in the MOTHER Registry

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Objectives: Endovascular repair of thoracic aortic aneurysms and dissections (TEVR) has been associated with peri-operative stroke rates as high as 15% in some series. The objective of this study was to determine the incidence of peri-operative stroke following TEVR and to define subsets of patients at increased risk.

Methods: The MOTHER registry is an amalgamation of five sponsored trials and a single institutional case series with detailed data on 1010 TEVR. In this study, the peri-operative stroke rate was investigated. Differences between groups were quantified through logistic regression and by comparison of proportions.

Results: Of the 1010 cases, 48 (4.8%) of patients had a stroke within 30 days. Of these 4 (3.3%) were fatal, but 14 (30%) made a recovery without deficit. Multiple regression analysis demonstrated that female gender (OR=1.9; 95% CI 1.1-3.4; P=.042), history of CVA (OR=2.1; 95% CI 1.1-4; P=.036), history of CVA (OR=2.4; 95% CI 1.2-4.8; P=.000) and covering the left subclavian artery without revascularisation (OR 3.6; 95% CI 1.9-6.5; P=.000) were independently predictive of peri-operative stroke. Mode of admission and type of pathology were not of significant influence.

Conclusions: Coverage of the left subclavian artery without re-vascularisation would appear to be the single most important predictor of post-TEVAR stroke. Not only is this a strong association, but is potentially modifiable by appropriate re-vascularisation procedures.


SS12.

What Is the Fate of Untreated Concomitant Suprarenal Aortic Aneurysms Following EVAR

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Objectives: There are many patients treated with EVAR who have a concomitant aneurysm of the suprarenal