O-043 Percutaneous Access with Larger Introducers Sheaths (>21F) During Endovascular Repair of Thoracic and Thoraco-Abdominal Pathology: A Propensity Matched Analysis

Thoraco-abdominal Aortic Disease

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Introduction: To evaluate the feasibility and safety of an off-label percutaneous approach during the endovascular treatment of thoracic and thoracoabdominal pathology with large sheaths (>21F), even in the presence of predictors of technical failure.

Methods: From December 2015 to December 2018, all patients receiving a percutaneous approach for endovascular treatment of aortic pathology (EVAR: 389 cases - 60.9%; TEVAR: 163 cases - 25.5%; FEVAR = 87 cases - 13.6%) were enrolled in an ambispective study called PEVAR-PRO (clinicaltrials.gov: NCT03484013). The entire retrospective arm of the study was analyzed to identify the predictors of technical failure at univariate analysis. The identified predictors were used to create a 1:2 propensity matched cohort to compare the technical success rate of cases receiving a large sheath (LS) to small sheath (SS) percutaneous closure. All the enrolled PEVAR-PRO patients received two suture-mediated vascular closure devices, employing the “pre-close technique” with ProGlide (Abbott Vascular, Santa Clara, Calif) and the 30-day technical success was defined as a successful hemostasis without evidence of bleeding, pseudoaneurysm formation, arterial occlusion or dissection requiring secondary intervention.

Results: The univariate analysis of the 639 femoral arteries in 363 patients (Male 84%, median age: 72 years IQR: 69-78) enrolled in the study observed that the failure predictors were: Diabetes (RR: 3.4, p< .001), SVS score >12 (RR: 2.3; p= .017), common femoral artery stenosis >50% (RR: 6.0, p< .001), femoral calcifications involving more than 33% of the vessel circumference (RR: 2.6, p= .002) and femoral anterior calcifications (RR: 2.3, p=.031). At univariate analysis a borderline lower technical success (90.8% vs 95.0%, p= .057) was observed comparing LS group (191 cases) to SS group (448 cases). After 1:2 propensity score matching we obtained a SS group (n=346 patients: male 85%, median age: 75 years IQR: 70-79) and LS group (n=173 male: 80%, median age: 71 years IQR: 65-77) with no significative differences regarding other preoperative risk factors. The technical success rate did not differ between the two groups (LS group 90.8% vs SS Group 94.2%, RR: 1.6, IC95%: 0.85-3.01, p=.143). Interestingly, in LS group a technical failure for bleeding (6 cases - 38%) or vessel occlusion (11 cases - 62%) did not show an increased need for postoperative blood transfusions (11.4% vs 7.8%). Moreover, a previous open (42 cases - 24.3%) femoral or percutaneous (35 cases - 20.2%) access did not affect the technical success rate (open: 90.5% vs 90.8% and percutaneous: 88.6% vs 91.3%).

Conclusion: An off-label percutaneous approach with pre-close technique to thoracic and thoraco-abdominal aortic pathology employing large sheath (> 21F) is feasible and safe even in presence of redo accesses. Technical success rate is not different when compared to an in-label use of the closure devices even after propensity matching toward failure predictors. Prospective controlled studies are needed to include large sheath access into the instructions for use of the device.

Disclosure: Nothing to disclose

O-044 The Initial Aortic Diameter as the Predictors of Aortic Events in Uncomplicated Type B Aortic Dissection

Thoraco-abdominal Aortic Disease

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Introduction: Several past studies investigated to detect the risk factors of late aortic events for patients with uncomplicated acute Type B aortic dissection. The initial aortic diameter is an univariant predictor of technical failure in patients undergoing endovascular treatment for complicated acute Type B aortic dissection. However, the initial aortic diameter has not been tested as a predictor of late aortic events in patients undergoing endovascular treatment for uncomplicated acute Type B aortic dissection. In this study, we analyzed the initial maximum aortic diameter of the aortic dissection is a key predictor for aortic growth. Furthermore, the distal extension of the aortic dissection also seems to play an important role in late aneurysmal degeneration. However, we were not able to confirm the added value of the risk calculator tool in general practice. A prospective study is needed with more uniform data collection and follow-up imaging.

Disclosure: Nothing to disclose
diameter was reported as a risk factor for late aortic events. However, it remains controversial about the cut off values; 40mm or 45mm. We evaluate the optimal initial aortic diameter for a risk factor.

**Methods:** We conducted a retrospective cohort study reviewing 216 consecutive patients underwent initial treatment for uncomplicated acute type B aortic dissection between 2004 and 2018. We excluded 50 complicated cases (rupture, impending rupture and malperfusion). We evaluated the incidences of aortic events (operation for dissected aorta or operative indication for dissected aorta) after initial therapy. Follow up rates was 90.7% with median follow-up of 42 months. The largest minor and major axes diameters were measured on computed tomography at admission, before discharge. Logistic regression was used to examine whether aortic diameter was useful in predicting late aortic events. Cox regression was carried out to assess the prognostic effect of aortic diameter after allowing for significant covariates and receiver operating characteristic (ROC) analyses were used to determine test reliability. Moreover, patients were categorized into 3 groups based on the largest minor axis aortic diameter at admission; 40mm > Group A, 45mm > Group B ≥ 40mm, Group C ≥ 45mm, and Kaplan-Meier analyses detected the incidences of aortic events among these three groups.

**Results:** In hospital mortality was 1 (0.5%). Long-term mortality was 40 (18.6%). Aortic events were 82 (38.1%). ROC analyses showed the cut-off values 40mm of minor axis diameter at initial CT (Area under the curve, 0.77, p<0.01). In the multivariate analysis, risk factors of aortic events were initial aortic diameter ≥ 40mm (HR 4.21, 95% CI 2.54-6.98, p<0.01), the false lumen diameter > the true lumen diameter (HR 3.73, 95%CI 1.88-7.41, p<0.01), ulcer like projection (HR 1.83, 95%CI 1.04-3.22, p=0.04) and age ≥ 70 (HR 2.01, 95%CI 1.22-3.33, p=0.01) were shown to be independent risk factors of late aortic events. The 3-years incidences rates of aortic events were 22.3% in Group A, 47.5% in Group B, and 87.9% in Group C, respectively (p<0.01).

**Conclusion:** We identify the optimal aortic diameter for predictor of aortic events was 40mm at admission. The larger initial aortic diameter, the more likely patients were to experience aortic events. We should closely monitor them and consider intervention at appropriate time.

**Disclosure:** Nothing to disclose

**O-045** Fenestrated/Branched Endovascular Repair for Complex Aortic Aneurysms Among Standard and High-risk Patients for Open Repair

**Thoraco-abdominal Aortic Disease**

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**Introduction:** Fenestrated/branched endovascular aortic aneurysm repair (F-BEVAR) is an alternative to open repair. Whether F-BEVAR should also be offered to standard risk patients has not been established as most series until now have included preferentially patients unfit for open repair. The aim of this study was to evaluate perioperative and early outcomes of F-BEVAR among patients at standard vs. high-risk for open repair.

**Methods:** During a 4-year period, 206 patients[162 men (79%)] underwent F-BEVAR using Zenith Fenestrated AAA Endovascular Grafts 47%, Zenith p-Branch(4%), Zenith t-Branch(4%) and premanufactured fenestrated/branched Custom-Made Devices (45%). Demographics, perioperative and follow-up outcomes of high-risk patients (n=161 [78%]) and standard risk patients(n=45 [22%]) were compared. Chi-square or Fisher test were used for categorical variables and non-parametric tests for continuous variables. Kaplan-Meier curve was used for survival analysis.

**Results:** Median age was 72 years (interquartile [IQR] 67-77 years) for the entire cohort and 73 years(IQR, 69-76 years) among high-risk patients. Median aneurysm size was 58 mm (IQR: 53-62 mm). The median number of fenestrations was 3 (IQR,3-4). Preoperatively, high-risk patients had higher SVS score (8 [IQR, 5-11] vs 2[IQR, 5-7] p=.01) Technical success was 100% for both groups. The median operative time for high-risk patients was 260 minutes (IQR, 200-310) vs. 220 minutes (IQR, 171-288) in standard-risk patients (p=.1). The median hospital length of stay was 3 days (IQR, 2-5) in high-risk patients vs. 2 days (IQR,1-4) for standard-risk patients (p=.05). The rate of re-interventions at 12 months was 35% for high-risk patients and 28% for standard-risk patients (p=.5). Two (1%) 30-day deaths occurred in high-risk patients secondary to urosepsis and intracranial bleeding. At 12-months, the survival rate was 87% in high-risk patients and 100% in standard risk patients (p=.05). The rate of re-interventions at 12 months was 33% for high-risk patients and 20% for standard-risk patients (p=.1).

**Conclusion:** F-BEVAR is safe and effective procedure for patients at high and standard risk for open repair that are not eligible for standard EVAR. Standard risk patients benefit the most from F-BEVAR given their significantly improved survival compared to high-risk patients. F-BEVAR should be expanded to conventional risk patients.

**Disclosure:** Cook Medical, Inc. Clinical research support and consulting fees.

**O-046** Analysis of Early Neurological Outcomes from the SUMMIT Study

**Thoraco-abdominal Aortic Disease**

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**Introduction:** Whether F-BEVAR should also be offered to standard risk patients has not been established as most series until now have included preferentially patients unfit for open repair. The aim of this study was to evaluate perioperative and early outcomes of F-BEVAR among patients at standard vs. high-risk for open repair.

**Methods:** During a 4-year period, 206 patients[162 men (79%)] underwent F-BEVAR using Zenith Fenestrated AAA Endovascular Grafts 47%, Zenith p-Branch(4%), Zenith t-Branch(4%) and premanufactured fenestrated/branched Custom-Made Devices (45%). Demographics, perioperative and follow-up outcomes of high-risk patients (n=161 [78%]) and standard risk patients(n=45 [22%]) were compared. Chi-square or Fisher test were used for categorical variables and non-parametric tests for continuous variables. Kaplan-Meier curve was used for survival analysis.

**Results:** Median age was 72 years (interquartile [IQR] 67-77 years) for the entire cohort and 73 years(IQR, 69-76 years) among high-risk patients. Median aneurysm size was 58 mm (IQR: 53-62 mm). The median number of fenestrations was 3 (IQR,3-4). Preoperatively, high-risk patients had higher SVS score (8 [IQR, 5-11] vs 2[IQR, 5-7] p=.01) Technical success was 100% for both groups. The median operative time for high-risk patients was 260 minutes (IQR, 200-310) vs. 220 minutes (IQR, 171-288) in standard-risk patients (p=.1). The median hospital length of stay was 3 days (IQR, 2-5) in high-risk patients vs. 2 days (IQR,1-4) for standard-risk patients (p=.05). The rate of re-interventions at 12 months was 35% for high-risk patients and 28% for standard-risk patients (p=.5). Two (1%) 30-day deaths occurred in high-risk patients secondary to urosepsis and intracranial bleeding. At 12-months, the survival rate was 87% in high-risk patients and 100% in standard risk patients (p=.05). The rate of re-interventions at 12 months was 33% for high-risk patients and 20% for standard-risk patients (p=.1).

**Conclusion:** F-BEVAR is safe and effective procedure for patients at high and standard risk for open repair that are not eligible for standard EVAR. Standard risk patients benefit the most from F-BEVAR given their significantly improved survival compared to high-risk patients. F-BEVAR should be expanded to conventional risk patients.

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