RESULTS Technical success 118/120 (99%). 6 lesions treated by angioplasty alone: 3 VO (first 3 pts 2 V1, 1 V2 lesion). 1 pt (inflammatory disease) treated by cutting balloon alone. 111 lesions treated with stents (direct stenting: 96). Peripheral balloon expandable stents (n = 23), self expandable stents (n = 4 for 3 V1 and one V2 lesions). 88 coronary stents (20 DES). 1 pt developed a TIA during the procedure. No neurological complications at 30 days Clinical success 112/114 (99%) Post-procedure arterial diameter: 4.60 ± 0.8 mm (4-6). Mean residual stenosis 2.5 ± 3.9%. In 12 pts treated with protection devices, visible debris removed in 9 (6 Filterwire, 2 Fibercut) 1 Angioplasty with the same amount of debris as during Carotid Stenting) 9 pts (8%) developed a symptomatic restenosis during the follow-up (mean: 33.4±29.9 months), 3 after PTA alone, 5 after PTA and stent (1 occlusion treated medically, 7 stenoses successfully treated with PTA). No restenosis after DES implantation at 1 year.

CONCLUSIONS VAS can be performed safely and effectively with a high technical success rate, a low complication rate, a low restenosis rate and a durable clinical success in patients with symptomatic VA stenosis. Stents seem to improve immediate and long-term results. The role of protection devices and D.E.S has to be discussed.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

KEYWORDS Angioplasty, Stent, Vertebral artery stenosis

TCT-781 Thoracic Endovascular Repair Decreases Longitudinal Aortic Distensibility: Experimental Study in an Ex-Vivo Porcine Model

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BACKGROUND Decreased proximal aortic distensibility predicts all-cause mortality and cardiovascular events. Radial aortic distensibility is preserved after thoracic endovascular aortic repair (TEVAR), but its impact on longitudinal aortic distensibility (LAD) has not yet been elucidated. This study sought to quantify the impact of TEVAR and stent-graft oversizing on LAD in an ex-vivo porcine model.

METHODS Twenty fresh thoracic porcine aortas were harvested and connected to a flow pump at body temperature. The anterior side of each aorta was marked every 5 cm from the left subclavian artery to the celiac trunk. LAD measurements were conducted through high-definition imaging and custom developed software at five different pressure levels (100, 120, 140, 160 and 180 mmHg), before and after TEVAR with a 150 mm long stent-graft. Three groups of oversizing were created (0-9%, 10-19%, and 20-29%). Uni-axial tensile testing was conducted after the experiment to evaluate the elastic properties of the porcine aortas in the proximal, central and distal zones, from both circumferential and longitudinal fragments.

RESULTS After TEVAR, LAD decreased in the stented segments (11.9% vs. 5.6%, p < 0.001) and in the total aorta (11.4% vs. 7.0%, p < 0.001, Figure 1). The positive linear correlation between LAD and pressure was reduced at 120 mmHg in the stented segments (2.0% vs. 0.9%, p<0.001) and in the total aorta (2.0% vs. 1.4%, p=0.002), and remained significant for all higher pressures (Figure 1). Stent-graft oversizing did not affect the level of LAD reduction (p=0.797). Tensile testing confirmed homogeneity of aortic biomechanical responses with a mean peak stress to rupture of 1.4±0.4 MPa and a coefficient of variation of 0.3. Moreover, mean peak stress was higher for the circumferential than for the longitudinal fragments in all three zones (2.3±0.4 MPa vs. 1.4±0.4 MPa, p=0.01).

CONCLUSIONS P.T.A. is currently the treatment of choice for subclavian artery lesions. It is a safe and effective procedure associated with low risks and good long-term results. Stents seem to limit the restenosis rate and improve long-term results.

CATEGORIES ENDOVASCULAR: Complications

KEYWORDS Distensibility, Endovascular treatment, Thoracic aorta