

e0707 TOTALLY PERCUTANEOUS ENDOVASCULAR AORTIC REPAIR

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Backgrounds Aortic diseases have been diagnosed and studied for centuries. In the current era, endovascular therapy with percutaneous stent-graft placement has become a viable therapeutic option and will surely improve with continuing technological advances. As technology trends towards less invasive, a truly percutaneous therapy would be desirable. We describes and reports a Preclosing technique for femoral access sites management without groin incisions.

Methods From Oct 2009 to May 2010, consecutive 70 patients (63 males; mean age: 61.4 ± 7.4 years) underwent endovascular repair for aortic dissections (n=46) and thoracic (n=3) or abdominal aortic aneurysms (n=21) using the Preclosing technique. Preprocedural CTA was performed to assess the suitability of common femoral artery anatomy. Endografts used included Zenith (Cook, USA), Valiant (Medtronic, USA), Hercules (Microport, China). This technique was applied to 86 femoral sites in 66 patients, five access sites was managed surgically. After puncture of common femoral artery, followed by deployment of two Percloses Proglide Devices (6Fr, Abbott Vascular Devices, USA) at about 60° angle, arteriotomies were dilated to an appropriate size (larger than 16Fr). After removal of the sheath at the end of the procedure, haemostasis was achieved by knotting the multiple Proglide Perclose sutures placed prior to arterial dilatation. If immediate haemostasis could not be achieved, one more Perclose device was deployed. Femoral sites and limb circulation were examined immediately after suture and following days. Technical success, complications, procedure and anaesthesia times were evaluated.

Results Technical success was achieved in all access sites. During hospitalisation there were no access-related complications. Procedure duration and anaesthesia time was shorter. 179 Perclose devices were used to close 86 femoral access sites. Profiles of stent-graft delivery devices used were 16 Fr (n=20), 20 Fr (n=14), 21 Fr (n=28), 22 Fr (n=21), 24 Fr (n=7).

Conclusions This study confirms that complete percutaneous endovascular aortic repair using the Preclosing technique is safe and effective, compared with femoral incision, it saves procedure and anaesthesia and hospitalisation time, and expected to reduce blood loss and late complications and scar tissue formation. we suggest the technique be performed at hospitals where vascular surgery is available in case of emergent complications. Patient selection as well as the technique of deploying the Perclose devices is key to the procedure success.

e0708 IGFBP-7 CONTRIBUTES TO VASCULAR REMOLDING DURING HYPERTENSION DEVELOPMENT IN OUABAIN-INDUCED HYPERTENSIVE RATS

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Purposes The aim of this study was to elucidate the potential new targets for vascular remodeling with hypertension.

Methods and Results In this study, we established the ouabain-induced hypertensive SD rats (OHR), the blood pressure were observed during the process, the vessel hypertrophy were detected, and the level of ET-1, NO were tested and the expression of VEGF, TGF- β_1 , PCNA, PKC, NOS in vessel tissue were observed during the development of remodeling. Furthermore, we analysed the protein expression profiles of aortic smooth muscle in OHR of various degrees during the development of vascular remodeling in hyper-

tension, as well as in matched no treated SD rats, using a proteomic analysis of relative and absolute quantification (iTRAQ). The expressions of 33 proteins were altered 1.5-folds in OHR compared with no-treated rats. Of these proteins, Non-muscle caldesmon (CDM), Citrate synthase, Alpha-S1-casein, Alpha-S1-casein, Dextrin (Actin-depolymerising factor) (ADF) and Insulin-like growth factor-binding protein 7 (IGFBP-7) were upregulated in SHR compared with contrast rats. On the other hand, the expression of Tyrosyl-DNA phosphodiesterase 1, Annexin A1, Ras-related protein Rab-8A and ATP synthase subunit e in OHR. The results from a PCR analysis revealed that the expression of the above protein meet the results respectively. The level of IGFBP-7 was more in remodeling aortic strips from OHR than from rats without remodeling. There are linkage between the expression of IGFBP-7 and vascular function and hypertrophy. Moreover, silence the expression IGFBP-7 treatment with siRNA technology inhibited aortic smooth muscle contraction induced by ouabain, while over-expression of IGFBP-7 promote the vascular hypertrophy. Interesting, the expression of IGFBP-7 lead to the change of level of ET-1, NO, and the change of VEGF, TGF- β_1 in vessel hypertrophy, so as to support the result obtained from the proteomic analysis.

Conclusion These results suggest that the IGFBP-7 is involved in vascular remodeling in ouabain-induced hypertensive rats and it may be the key target protein of ouabain on vascular remodeling.

e0709 SPECKLE TRACKING BASED CIRCUMFERENTIAL STRAIN ANALYSIS TO EVALUATE MECHANICAL FUNCTION OF HEART DURING VENTRICULAR PACING: AN EXPERIMENTAL STUDY ON OPEN CHEST INSTRUMENTED PIGS

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Aims This study aims at assessing ventricular pacing (VP) mechanical change by using global circumferential strain and segmental circumferential strain of speckle tracking imaging.

Methods Seven adult pigs, weighting 30.8 ± 3.6 kg, were sedated, followed by median sternotomy and opening of the pericardium. Temporary pacing leads were placed on the right ventricular epicardium and LV epicardium. A LV short axis view at the mid-level LV was acquired at sinus and VP rhythm. Analysis of circumferential strain based on tracking of acoustic markers was performed offline. The onset of QRS wave was used to characterise the beginning of the cardiac cycle. The ratio of beginning systolic time to cardiac cycle, end systolic time to cardiac cycle and total systolic time to cardiac cycle was calculated for global circumferential strain. We compared those data and dyssynchrony between sinus and VP rhythm.

Results All pigs were successful for VP studying and 84 good images were analysed. Compared with sinus rhythm, in VP rhythm all of the ratio of the beginning systolic time, end systolic time and total systolic time to cardiac cycle were increased (all $p < 0.05$). and the construction of six segments were dyssynchrony, even segmental paradoxical movement. When VP rates were more than 130 bpm, both LV global and LV segments sometimes showed irregular motion while the EKG remained normal pacing EKG, which included: (1) multiple construction and diastole in one heart cycle; (2) A large variability of construction amplitude in several consecutive cardiac cycles.

Conclusion Global and segmental measures of circumferential strain can identify LV mechanical abnormalities induced by VP. VP can lead to several kinds of ventricular mechanical dyssynchrony, including delay and lengthening of LV systole, and irregularity of systole and diastole.