CRT-724

Can the Aortic Wall Communicate with Us?

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Objective: Association between aortic aneurysm wall and risk of rupture or dissection.
Methods: Aortic specimens were obtained from 73 patients (51 men and 22 women, whose median age 61.7± 10.7 years) undergoing surgical repair of thoracic ascending aneurysm (TAA). Histopathological and immunohistochemical analyses were performed using adequate tissue specimens, appropriate techniques and criteria. Furthermore, genetic risk factors were also investigated.
Results: We identified three phenotypes of TAAs with different quality of aortic wall at the time of operation: phenotype I (normal wall); phenotype II (moderate wall thickness); phenotype III (thin and weak wall). No significant differences were detected in term of demographic and clinical data, co-morbidity conditions and pharmacological treatments. In contrast, significant statistical differences were observed by comparing abnormalities of extracellular matrix components among three phenotypes (fibrosis $p<0.005$; elastic fragmentation $p=0.002$; medionecrosis $p=0.004$; cystic necrosis $p=0.07$; apoptosis $p<0.0001$; MMP-9 amount $p=0.004$). In addition, significant differences both in genotype distributions and allele frequencies were observed for following SNPs (Single Nucleotide Polymorphism): -1562C/T MMP-9 (Metalloproteinases-9), -786T/C eNOs (endothelial Nitric Oxide Synthase) and D/I ACE (Angiotensin Converting Enzyme).
Conclusion: Aneurysm with thin and weak wall at the time of operation should seem genetically and mainly associated with extracellular matrix disorders of aorta wall and consequently with aorta aneurysm complications (rupture and dissection).

CRT-725

The Largest Case Series of Thrombolytic Therapy for Right Sided Mechanical Pulmonic and Tricuspid Valve Thrombosis Showing Very High Success Rate

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Introduction: Treatment data using thrombolytic in the setting of right sided mechanical valve thrombosis are almost nonexistent and all the guidelines are based on a very small case series. The goal of this manuscript was to perform survival analysis of larges case series of patients with right sided mechanical valve thrombosis treated with thrombolytic therapy.
Method: We reviewed in-hospital and long term outcome data for survival analysis of patients presenting with right sided mechanical pulmonic and tricuspid valve thrombosis treated with thrombolytic therapy from September 2005 until Jun 2012 retrospectively.
Result: A total of 16 patients with definite thrombotic mechanical valve obstruction in tricuspid or pulmonary position were identified (8 in pulmonary and 8 tricuspid position) who underwent thrombolytic therapy. All the patients except one had subtherapeutic INR. All 8 pulmonic mechanical valve thrombosis were in children with 100% respond rate to thrombolytic therapy. In hospital survival rate of pulmonic valve thrombosis treated with thrombolytic therapy was 100%. One year survival rate of successful treated mechanical valve pulmonic valve thrombosis was 87.5%.
Conclusion: Based on our data, we strongly recommend that thrombolytic therapy should remain the first line therapy for the right sided mechanical valve thrombosis in adults or children including children with complex congenital heart disease and patients with mechanical pulmonic valve thrombosis. Surgery should be reserved for patients who fail this treatment.

CRT-727

Percutaneous Balloon Atrial Septostomy for Direct Left Heart Decompression in Patients on Extra Corporeal Membrane Oxygenation

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Background: Severe myocardial dysfunction and added afterload from the Extra Corporeal Membrane Oxygenation (ECMO) arterial cannula may lead to significant rise in left ventricular (LV) end-diastolic and left atrial (LA) pressures. This may result in ischemia, lower likelihood of ventricular recovery and hence raise the already high mortality in this group. Various mechanical approaches have been suggested but available literature in adults is limited.
Methods: We retrospectively reviewed all patients on ECMO that underwent Percutaneous Balloon Atrial Septostomy (PBAS) for left heart decompression at our institution over 3 years. Left heart decompression based on echocardiography, pulmonary edema on chest radiograph and improvement in LA pressure, as well as mortality at 30 days were analyzed.
Results: Six patients, (age 54±18 years; 3 males) were identified. LA pressure improved immediately post septostomy in 4 (80%) / 5 patients. Pulmonary edema improved within 24 hours in 5 (83%) patients. LV decompression on echocardiography was felt in 3 (50%) patients. Four out of six patients died due to multiorgan failure.
Conclusion: Percutaneous Atrial Septostomy appears to decompress left heart in patients on ECMO and profound shock. However, due to multi-organ involvement, mortality in this critically sick group remains high.

Patient	Etiology	Cardiac arrest	Time from ECMO to Septostomy (hours)	Left atrial pressure (mmHg) Pre / Post Septostomy	Pulmonary edema on radiograph at 24 hours	LV decompression on echo	Survival	Time from septostomy to death	Cause of death
1	LMCA MI	No	72	15 / 9	Improved	No	No	Day 17	Multiorgan failure
2	LMCA MI	Yes	456	20 / 20	Improved	No	Yes	–	Left ventricular assist device
3	LMCA dissection	Yes	72	Not available	Improved	Yes	No	Day 9	Multiorgan failure, multiple ischemic stroke
4	Influenza	No	30	32 / 24	Improved	Yes	Yes	–	Discharged on day 31
5	ARDS	Yes	20	60 /30	Not Improved	No	No	8 hours	Multiorgan failure
6	MI	Yes	240	16 / 9	Improved	Yes	No	52 hours	Multiorgan failure

LMCA = Left Main Coronary Artery, MI = Myocardial Infarction, ARDS = Acute Respiratory Distress Syndrome.