

IJN. Among the parameters reviewed were pacing thresholds and impedances, pacing stability as well as development of pacing related complications. Electrical performances were tracked from the point of implant to successful completion of 1-year follow up.

Results: Between March 2014 to January 2018, 192 patients were subjected to procedural attempt to implant a Miera TPS for various indications. Out of these 192 patients, the Miera was successfully implanted in 190 patients (99%). 113 (59.5%) have completed 1-year follow-up. The mean age of these patients is 73.3 ± 10.5 years old. 60 (53.1%) patients were female and 53 (46.9%) patients were male. The most common indication for Miera implantation was for complete heart block (27.4%). Early complications were bleeding in 1 patient (0.9%) and elevated capture threshold post implant in 1 patient (0.9%). 1 patient (0.9%) develop pacemaker related infection at 1 month needing extraction of the Miera pacemaker. Electrical performance was good from the point of implant to over 1-year period with stable threshold (1.7 at implant vs 2.0 at 1-year, p value=0.298). There were no late complications such as perforation or pericardial effusion at 1-year.

Conclusion: The Miera TPS leadless pacing system showed a high degree of efficacy and efficiency at 1-year follow-up.

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23.

Real World Evidence for Safety and Efficacy of Watchman Device for Stroke Prevention in Patients with Atrial Fibrillation in Asian Population: Single Center Prospective Study

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Background: Atrial fibrillation (AF) is a common cardiac arrhythmia, with associated five-time increased risk of stroke. Watchman device is a percutaneous device to occlude the left atrial appendage (LAA), which is non-inferior to oral anticoagulation, preventing stroke and reducing bleeding risk in nonvalvular atrial fibrillation (NVAF) in previous studies. Data on safety, efficacy and follow-up of the device with transoesophageal echocardiogram (TEE) is limited in Asian population.

Objective: To know the safety and efficacy of watchman device in NVAF patients in Asian population in a single center.

Materials & methods: All patients were recruited prospectively from July 2010 to December 2016. Regular follow-ups with TEE were performed at the 45-day, 6 months and 1 year.

Results: A total number of 185 patients who has NVAF were included. Mean age of patient population was 68.1 ± 10.4 years old. 60.5% of them were men and 39.5% were women. All the patients were of Asian ethnicity. Average CHA2DS2-VASc SCORE was 4.0 ± 1.5 and HASBLED SCORE was 3.4 ± 1.6 . 60% of them were paroxysmal AF. Sixty-four patients (34.6%) had history of major bleeding, 50 patients (27%) were in high risk of bleeding, 28 patients (15.1%) had erratic INR, 24 patients (13%) were not well-adherence to oral anticoagulation. Procedural success rate was 100%. Device size of 27 mm (30.08%) and 24 mm (24.32%) were used most commonly. Peri-device leakage of less than 5 mm in 17.4% and that of leakage of more than 5 mm in 0% at 1-year review with TEE. Total 22 patients died during one year follow up. Serious adverse events occurred in 6 patients (3%) within 7 days. Three patients (1.6%) died within 7 days, 2 patients (1.1%) were procedure related mortality, 6 patients (3%) were cardiovascular death. There is no report of ischaemic stroke and intracranial bleeding within one year.

Conclusion: LAA occlusion device is a feasible option for NVAF patients intolerable to oral Anticoagulants and high risk of bleeding recurrence. The procedure success rate was high with a low rate of peri-device leakage and adverse event rates in an experience center.

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24.

Comparison of Radiofrequency Ablation using Anatomical Approach to Activation Approach in Patients with Idiopathic Verapamil-Sensitive Left Ventricular Tachycardia

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Background: Different methods have been proposed for the ablation of Idiopathic Left Ventricular Tachycardia (ILVT). These include pace-mapping method and ablation targeting Purkinje Potential or Diastolic Potential during Ventricular Tachycardia (VT). In patients with non-inducible or non-stable VT, these critical potentials might be difficult to map. Radiofrequency ablation (RFA) during sinus rhythm in ILVT has been reported in case series but there is no local data on the efficacy of this approach compared to ablation during VT.

Objective: To compare the efficacy of RFA during sinus rhythm (anatomical approach) and during VT (activation approach) in patients with ILVT.

Methods: We conducted a retrospective study for ILVT ablation procedures done between 2012 to 2014 in our center. The baseline and procedural characteristics were described. Clinical outcome of VT recurrence was compared between the 2 methods (Group A during sinus rhythm and Group B during VT).

Results: A total of 83 patients were analyzed, 14 (16.9%) patients in Group A and 69 (83.1%) patients in Group B. The mean age was 25.3 ± 11.3 years, 16-year-old and below 23 (27%), male gender 57 (69%), and median LVEF of $60 \pm 12\%$. Conventional mapping was done in 80 (96.4%) patients. RFA was done with retrograde approach in 74 (84.2%) and with irrigated-tip in 10 (12.2%). The recurrence of tachycardia in Group A compared to Group B was 7.1% versus 8.7% respectively (HR: 0.806; 95%CI 0.097, 6.692; $p=0.841$). Among the 7 patients who had recurrent VT, 3 patients had second ablative procedures while 4 patients opted for medical therapy. At 1-year follow-up, the recurrence rate in Group A versus Group B was 7.1% and 2.9% respectively (HR: 2.577; 95%CI 0.217, 30.553; $p=0.453$). Overall, the success rate of ILVT ablation was 91.6% in 1st attempt and 96.4% in 1 year.

Conclusion: The recurrence of tachycardia for RFA using the anatomical approach was similar to RFA using activation approach. Overall, radiofrequency ablation of ILVT has a high success rate and a low recurrence rate.

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25.

Routine Pre-Operative Coronary Angiography in Patients Undergoing Cardiac Surgery: Is it Necessary?

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Background: Pre-operative screening coronary angiography is often performed prior to non-coronary cardiac surgery despite a paucity of data to support the routine use of this test. There is also little data to demonstrate the benefit of coronary revascularization before or during surgery.

Objective: To explore the value of pre-operative coronary angiography in detecting asymptomatic but significant coronary artery disease (CAD).

Methods: This was a retrospective, single-centre observational study from a tertiary care cardiac centre. Consecutive cases that had routine pre-operative coronary angiography prior to non-coronary cardiac surgery between April 2016 and December 2017 were recruited. Significant CAD was defined as a coronary angiography finding that altered the clinical decision on revascularization or risk stratification of the surgery. The baseline patient characteristics, valvular lesions and coronary angiography findings were analyzed.

Results: 203 cases were analyzed, out of which 47 had significant CAD. Older age (OR=1.061, p=0.002), male gender (OR=3.437, p=0.002), diabetes mellitus (OR=3.988, p=0.001), hypertension (OR=2.196, p=0.034), dyslipidemia (OR=2.219, p=0.018), active smoking (OR=2.262, p=0.035) and moderate/severe aortic stenosis (OR=2.629, p=0.007) were associated with a positive finding of significant CAD. Moderate/severe aortic regurgitation (AR) and moderate/severe mitral regurgitation (MR) were not associated with significant CAD. Interestingly, moderate/severe mitral stenosis (MS) was associated with a lower risk of significant CAD (OR=0.113, p=0.003). In our series, all patients with moderate/severe AR, MR or MS had at least one cardiovascular disease risk factor.

Conclusion: Pre-operative coronary angiography for cardiac surgery might not be necessary for many patients. The indication for pre-operative angiography should be based on the cardiovascular disease risk profile. However, patients with severe aortic stenosis have high probabilities of significant CAD and coronary angiography might be warranted even in the absence of any cardiovascular disease risk factor.

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26.

Predictions of Thrombosis Inducing Factor for Neonates Patient - Specific Model of Occluder Design using Computational Fluid Dynamics

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Background: Patent Ductus Arteriosus (PDA) is one of the common heart defects that can occur soon after birth. Transcatheter treatment using occlusion devices is the most common treatment

used to occlude the duct. Currently, there are many types and shapes of closure devices, however, there is no flow analysis study on the hemodynamic effects of occluder design after implant. The occlusion device act as a physical barrier to blood flow in the duct which facilitates thrombogenesis and occludes the duct. Detection and computational analysis of the hemodynamic factors of the device are important to ensure the new improved designs of the closure device will optimize the outcome of the patient's health.

Objective: To determine the relationship between hemodynamic factors and closure device design factors contributing to thrombosis formation and improve the efficiency of the thrombogenesis on the surface of occlusion device and estimate the time needed to occlude the duct.

Materials & methods: Two occluders (concave and convex) design attached to the neonate's patient-specific aortic arch respectively. Blood was simulated as Newtonian with the incompressible and laminar flow. A computational fluid dynamics (CFO) study has been done in pulsatile blood flow through the neonate's patient-specific aortic arch and different shape of the occlusion device against a normal model. Hemodynamics factor evaluated are Time Average Wall Shear Stress (TAWSSlow), Oscillatory Shear Index (OSI) and Relative Residence Time (RRT).

Results: The hemodynamic parameters that contribute to the thrombosis formation have been studied and the convex shape showed significant increase of TAWSSlow (< 0.5 Pa) magnitude compared to a concave shape, suggesting more formation of the thrombosis can occurred. The convex shape occluder also generated more areas that exposed to the high value of OSI (0.2) that tends to have a greater risk on artery deposition, which could lead to the formation of thrombosis. Compared to concave shape, the convex shape increased the areas that exposed to RRT 10 Pa-1 that would also increase the percentage of TAWSSlow (< 0.5 Pa) which is known could promote the thrombosis formation.

Conclusion: These findings suggested that convex shape can promote more thrombosis formation and predict to occlude the duct much faster than concave shape.

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27.

The Relationship Between Oxidized Low-Density Lipoprotein/Beta 2 Glycoprotein 1 Complexes and Traditional Risk Factors in Relation to Coronary Artery Calcium

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Background: Coronary artery calcium (CAC) score, as a marker that refines risk assessment of coronary artery disease (CAD) beyond traditional risk factors, corresponds to atherosclerotic burden in the coronary arterial vasculature. Oxidized low density lipoprotein/beta 2 glycoprotein 1 (oxLDL/β2GPI) complexes have proatherogenic roles implicated in systemic inflammation, autoimmune disease