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USING AMPLATZER OCCLUDERS (ASO, VSD) FOR CLOSING NON-ATRIAL AND NON-VENTRICULAR SEPTAL DEFECTS

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Background: Interventions in a large variety of congenital heart defects may require improvisation. In our cases, we used a variety of devices for off-label purposes.

Objective: To study possibility of using Amplatzer Occluders (ASO, VSD) for closing non atrial and ventricular septal defects in 2 patients with CHD and 1 patient after knife injury.

Methods: The first patient, 11 years old, had an aorto-pulmonary window (APW). Diameter of APW was 8mm, and there was LAA 2015

pulmonary hypertension. The second patient had a communication between right pulmonary artery (PA) and left atrium. The non- invasive saturation was 74% and the mean pressure in PA was 7mm Hg. The third patient, 23 years old, had post-traumatic aneurysm of suprarenal part of abdominal aorta. The ostium of aneurysm was 7mm.

Results: In the first case, APW was closed by Amplatzer Septal Occluder (ASO) of 10mm diameter. There was minimal shunt through the occluder. After 1 month, there was no shunt. In the second case, communication was closed with Amplatzer VSD 10mm device. Saturation after closing the communication was 97% and the mean pressure in PA was 9mm Hg. In the third case, ostium of aneurysm was closed with a 10mm ASO.

TRANS-CORONARY ABLATION OF SEPTAL HYPERTROPHY (TASH) IN HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY (HOCM): ACUTE AND LONG-TERM SAFETY AND EFFICACY OUT-COME FROM A SINGLE CENTER EXPERIENCE

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Background: Trans-coronary ablation of septal hypertrophy (TASH) has been shown to reduce outflow obstruction and symptom relief in the short and intermediate period.

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Objectives: The aim is to assess the long-term efficacy and safety of TASH in a single center experience.

Method: 33 patients were analyzed with symptomatic HOCM, who underwent TASH procedure between 2005- 2014. Procedural success was defined as improvement in patient symptoms and reduction of the left ventricular (LV) outflow tract pressure gradient by ≥ 50% on echocardiography.

Result: The mean age was 49.4 ± 11.4 years. The mean duration of follow-up was 3.6 ± 2.4 years. The number of septal branches ablated was one in 66.7%, and mean alcohol volume was 3.1 ± 1.8 ml. LVOT gradient reduction was achieved in 91% of patients immediately, with mean gradient reduction from 83 ± 37 mmHg to 42 ± 34mmHg. Most patients, (81.8%) showed clinical improvement in New York Heart Association class. 11 patients developed transient complete heart block and permanent pacemaker was required in one. There was significant improvement in severity of mitral regurgitation and inter-ventricular septum thickness with preserved LV function. All p value <0.05.

Conclusion: TASH is a safe and effective procedure in achieving immediate and significant long-term reduction in LVOT pressure gradient in symptomatic patient, as well as echocardiographic variables.

SURGICAL MANAGEMENT OF TRICUSPID ENDOCARDITIS IN DRUG ABUSERS: 10 CASES

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Background: Tricuspid valve endocarditis is a common disease and represents 5 to 10% of cases of infective endocarditis. Invasive procedures and intravenous drug abuse are the main causes. In recent years, we have noticed an increase in the number of patients managed for severe tricuspid valve endocarditis secondary to intravenous drug abuse.

Objective: To assess the management of tricuspid valve endocarditis secondary to intravenous drug abuse, in a surgical department.

Methods: We report 10 cases of tricuspid valve endocarditis in intravenous drug-abuse patients, managed from January 2009 to December 2013 in the Department of Thoracic and Cardiovascular Surgery in Abderrahmen Mami Hospital Ariana, Tunisia.

Results: The mean age of the patients was 31.24 years. Valve replacement with a bioprosthesis was performed in 7 cases and vegetation removal with tricuspid valvoplasty in 3 cases. The postoperative course was uneventful in 9 cases. During follow-up, re- current bioprosthetic valve endocarditis and complete atrio-ventricular block occurred in 1 patient, requiring pacemaker implantation. One patient died with septic shock secondary to aspiration pneumonia.

Conclusion: Tricuspid valve endocarditis is an underestimated pathology and is often worsened by immune suppression. These patients should be systematically included in a postoperative rehabilitation program, in order to prevent recurrence.

TRANSCATHETER CLOSURE OF PATENT DUCTUS ARTERIOSUS WITH THE AMPLATZER DUCT OCCLUDER IN SUB-SAHARAN AFRICA

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Background: During an 8 year period, a Cardiac Centre has been designed and developed in Sub-Saharan Africa. Three partners have worked towards the realization of this project: two Italian charities (Associazione Bambini Cardiopatici nel mondo and Cuore Fratello) and a local general hospital run by the Tertiary Franciscan Sisters of Bressanone. Two cardiologists, one anaesthesiologist, one cardiac surgeon and 18 nurses have been trained. A fully equipped centre for cardiac care (2 operating theatres, 12 ICU beds, one flat panel Siemens catheterization laboratory, 38 beds in the ward, 6 neonatal beds and two outpatient clinics) have been developed by this Euro-African collaboration.

Objective: The aim of this study was to analyse the safety and efficacy of percutaneous closure of patent ductus arteriosus (PDA) in symptomatic pediatric and adult patients in a Sub-Saharan African centre.

Methods: We conducted a retrospective study on 40 patients with clinically significant PDA. 29 were children aged between 2 and 17 years and 11 were adults aged between18 and 29 years. The procedure was carried out under deep sedation or general anesthesia with fluoroscopic control. The Amplatzer Duct Occluder (ADO I) and Muscular ventricular septal defect devices were used. Physical examinations, 12 lead ECG, echocardiogram, and chest X-ray were performed prior to the procedure.

Results: In 2 patients, there were restrictive PDAs, whilst 17 patients had moderate PDAs with increased pulmonary flow and 21 patients had large PDAs. Pulmonary arterial pressures in these patients were between 75 and 100% of the systemic pressure, and 3 patients had Eisenmenger syndrome. Two patients had complications with device embolization, in one of whom the device was retrieved and was successfully closed with a muscular VSD device. In 1 patient, the embolised device needed surgical retrieval. In all patients, the ADO I and muscular ventricular septal defect were used. No problems occurred during long term follow-up.

Conclusion: Successful and safe percutaneous treatment of PDA can be performed in a centre in Sub-Saharan Africa. Collaboration between developed countries and local developing institutions is mandatory to succeed and have long lasting results.

RAPID, RELIABLE RESOLUTION OF DUCTAL SPASM DURING PERCUTANEOUS DEVICE OCCLUSION OF PATENT DUCTUS ARTERIOSUS BY A NOVEL PROTOCOL

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Background: Ductal spasm is a rare, but important complication of device occlusion of patent ductus arteriosus (PDA). We describe a novel protocol that rapidly and completely reversed the spasm in 8 ex-preterm infants, who had ductal spasm during cath- eterizations for PDA occlusion.

Object and Purpose: Our objective was to develop a protocol for the recognition and safe management of ductal spasm during percutaneous PDA occlusion.

Methods: Eight infants born with gestational ages between 25 and 34 weeks presented for transcatheter PDA occlusion between 13 and 67 months of age. All 8 had ductal spasm immediately before, during or soon after induction of anaesthesia, or only after entering the PDA with a catheter. After detection of the spasm, the anaesthetist, in each case: 1) changed the mode of anaesthesia from inhaled sevoflurane to total intravenous anaesthesia (TIVA) with propofol, 2) reduced the inhaled oxygen fraction to 21%, and 3) initiated a continuous intravenous infusion of Prostaglandin E1 (PGE1).

Results: Complete relaxation was attained after intravenous Prostaglandin E1 infusions of only 10-15 minutes duration. Whilst maintaining this protocol, 6 PDAs were successfully occluded.

Conclusion: Ductal spasm during transcatheter occlusion may be reliably resolved and the procedure safely completed by this simple protocol.

TRANSCATHETER CLOSURE OF ATRIAL SEPTAL DEFECT PRESERVES RIGHT VENTRICULAR FUNCTION

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Aim: To investigate the intermediate and short-term effects of transcatheter secundum atrial septal defect (ASD) closure on cardiac remodeling in children and adult patients.

Methods: 50 patients with secundum ASD, referred for possible transcatheter device closure, were subjected to history taking, physical examination, electrocardiographic assessment and transthoracic echocardiographic examination and were evaluated before the ASD closure, and 1 day, 3 months and 6 months after closure.

Results: At the 6 months follow up, electrocardiographic parameters of remodeling improved, and P dispersion decreased from 49.73 ± 9.01 ms to 30.53 ± 5.08 ms (p = 0.004), QT dispersion decreased from 67.6 ± 5.31 ms to 51.13 ± 5.73 ms (p = 0.003), QRS duration decreased from 134.4 ± 4.97 ms to 116.20 ± 3.47 ms (P = 0.002) , PR interval decreased from 188.87 ± 6.06 ms to 168.00 ± 6.16 ms (P = 0.002). At follow-up of 6 months, RVEDD had decreased from 25.67 ± 5.50 mm to 17.80 ± 2.7 mm (p = 0.001), and the LVEDD had increased from 33.17 ± 6.44 mm to 37.53 ± 5.15 mm (p = 0.002), Mean PAP decreased from 16.97 ± 3.37 mm Hg to 9.22 ± 1.37 mmHg (P = 0.000), RVSP decreased from 30.77 ± 4.69 mmHg to 18.8 ± 2.11 mmHg. After 6 months, 93.3% of the patients had normal RV size.

Conclusion: Transcatheter ASD device closure leads to significant improvement in right sided chamber dimension and function and can reverse electrical and mechanical changes in atrial and ventricular myocardium in children and adults in short and intermedi- ate term follow up.