556 Successful device closure of atrial septal defect after the fifth decade of life: effect on symptoms and ventricular function.

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Background: Device closure of secundum atrial septal defect (ASD) is now well established as a therapeutic option. However its beneficial effect in older patients remains disputable.

Aim: To assess beneficial effect of ASD device closure on symptoms and ventricular function in patients >50 years of age.

Methods: We studied right and left heart size and function in 18 patients, age 64-88 years, 12 female who underwent successful ASD device closure procedure. Patients were clinically as well as echocardiographically assessed before and 2-18 months after procedure.

Results: 16 patient reported significant symptomatic improvement following the procedure, in whom the right atrial size (transverse diameter) fell from 6.0±1.2 to 4.9±1.1 cm, p<0.001 as did the right ventricle (inlet diameter) from 5.2±0.9 to 4.1±0.9 cm, p<0.001. Peak pulmonary flow velocity also dropped from 110±30 to 90±20 cms, p<0.05, while aortic velocity increased from 105±25 to 115±25 cm/s after procedure. The left ventricular size modestly increased (end-diastolic dimension) from 4.5±0.9 to 4.7±0.7 cm, p<0.002. The remaining 2 patients who had additional coronary artery disease, reported no change in symptoms despite successful device implantation. In them, the left ventricle was at the upper limit of normal before procedure and dilated afterwards while the left atrium was already dilated before procedure (~5 cm) and increased further in diameter during follow-up. Left ventricular filling demonstrated signs of raised left atrial pressure before procedure (short isovolumic relaxation time and dominant E wave with short deceleration time ~120 ms) and became more restrictive afterwards.

Conclusion: The symptomatic improvement with ASD device closure in the elderly is associated with right ventricular remodeling and increased left ventricular size and stroke distance. However, careful patient selection should be considered, particularly in those with coronary artery disease and left ventricular dysfunction that could be masked by the ASD.

557 Echocardiographic exam accuracy in evaluation of cardiac findings spectrum in Marfan syndrome.


The diagnosis criteria in Marfan Syndrome (MS) include phenotypic expression at bone skeletal structure, eyes, cardiovascular system, lungs and central nervous system.

Aim: The study of echocardiographic (ECHO) findings spectrum in MS; the appreciation of ECHO contribution in evaluation of patients (pts) with MS.

Methods: There were analyzed 41 pts with MS (aged between 18-61 years old, 25 males) admitted in a tens years period 1992-2003. All pts had clinical and paraclinical (ECG, x-ray, ECHO) evaluate; to 18 pts we made cardiac catheterisation and aortography; 15 pts had a CT exam; 11 pts had MRI. The ECHO study was fully performed in adults. Regression of RV size and pulmonary artery pressure as time, been observed in comparison to normal population, but volumes tend to decrease after the II stage. The same parameters (RV end-diastolic volume and the EF does not tend to reduce with time.

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558 Do adult patients, particularly those of advanced age, benefit from transcatheter atrial septal defect closure? A single center experience.

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Background: Transcatheter atrial septal defect (ASD) closure has been shown to be feasible and safe in children as well as adults. However, little is known about the clinical benefit of this procedure in adult pts, particularly those of advanced age.

Methods: We performed transcatheter ASD closure with the Amplatzer Septal Occluder in 105 adults (mean age 51±17 years, 73 female) of whom 76 were older than 40 years (up to 82 yrs). Patients were followed up for 4 to 10 years.

Results: In all pts ASD was successfully closed (occluder size 24±5 mm, range 10-34mm). No major complications occurred. Minor complications were atrial fibri- llation (2), transient AV-block (1) and transient ST-elevation (2). At follow-up, a mild residual left-to-right shunt was found in 3 pts. Right ventricular diameter (4-Ch view) decreased from 43±6 mm to 35±6 mm at 3 months with the most decrease occurring already on the first day post intervention (p<0.0001). Pulmonary artery pressure decreased from 39±16 mmHg to 30±12 mmHg at 3 months (p<0.01). Prior to intervention, 54 pts were symptomatic. Of these, 44 pts were older than 40 years. Limited exercise capacity and shortness of breath (NYHA class 2-3 or 3 in 20 pts) were the most frequently reported symptoms. At follow-up, all pts improved but two. These patients remained in NYHA class 3 but had persistent marked pul- monary hypertension. All other patients were asymptomatic or had only mild exert- ional shortness of breath. All of the 26 pts who were 65 yrs or older and who had been treated because of significant symptoms markedly improved.

Conclusion: Transcatheter atrial septal defect closure can be safely and success- fully performed in adults. Regression of RV size and pulmonary artery pressure as well as symptomatic improvement can generally be expected even in patients of advanced age.

559 Right ventricular function evaluation by means of 3D echocardiography in postoperative hypoplastic left heart syndrome (HLHS) patients.

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Background: Three-D echocardiography has been validated as a reliable tool to evaluate RV volumes and function in pediatric pts. Long term late of pts with HLHS lies on the durability of the RV as the solo pumping chamber of the heart.

Methods: We evaluated 16 pts with HLHS by means of 3D-echo (two before II stage, 11 after Fontan completion Mean age was 5 yrs (range 2-9yrs) and the mean follow-up after the II stage (unloading procedure) was 4.6 yrs (range 0.7-8.5 yrs). HP Sonos 5500 echocardiograph was employed in all, with a standard transfroracic 4 MHz rotating probe; the images were 3-D reconstructed by means of the summation disks method. No sedation was necessary in all.

Results: At least 1 acquisition eligible for the 3-D reconstruction was obtained in 15/16 pts, the mean time of acquisition was 6 min (3-9) and the mean time of off-line 3-D reconstruction was 45 min (30-60min). The mean RVEDV was 65.49 ml/m² (range 35.5-99.73), the mean RVESV was 38.8 ml/m² (range 21.4-59.36) and the mean EF was 41.3% (range 31.5-52). Comparison between the measured RVEDV, RV ESVs and the EF and the normal values of the literature for the same param- eters showed that pts with HLHS have larger volumes and reduced EF than normal. Biovariates regression analysis, considering the time interval between the echo exami- nation and the date of birth, II stage and Fontan operation, showed that the RVEDV volume tends to decrease significatively during time, after the II stage. The same was observed in comparison to normal population, but volumes tend to decrease after the II stage and the EF does not tend to reduce with time.