

12 mmHg (0 to 42 mmHg). The mean systemic O₂ saturation was 95 ± 4 % (80 to 98%). Two await transcatheter closure of interatrial communication.
 Conclusions. Transcatheter pulmonary valvotomy can be a definitive treatment in selected patients with PAIVS. Development of infundibular stenosis may occur in a certain percentage of patients following pulmonary valvotomy.

11:30 a.m.

886-5 Optimal Timing for Pulmonary Valve Replacement in Adults After Tetralogy of Fallot Repair: A Magnetic Resonance Imaging Study

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Objectives. To determine the optimal timing of pulmonary valve replacement (PVR) in adult patients with repaired tetralogy of Fallot (TOF).

Background. Much debate still exists regarding the fate of the right ventricle (RV) and optimal timing of PVR in adults with repaired TOF. The confusion may relate to the technique used to measure RV volume as well as to the fact that the RV is a tripartite structure, each component perhaps responding differently to volume unloading.

Methods. Retrospective study of 17 consecutive adult patients undergoing PVR after repair of TOF. Measurement of the RV body (inlet + trabecular component), right ventricular outflow tract (RVOT) and global RV (RV body + RVOT) were obtained before and after PVR, using magnetic resonance imaging (MRI). RV volumes were normalized to body surface area and RV ejection fraction (RVEF) calculated from RV volumes.

Results. Following PVR, there was a significant decrease in mean global RVEDV (163±34 cc/m² to 107±26 cc/m², p<0.001) and global RVESV (109±27 cc/m² to 69±22 cc/m², p<0.001), while mean global RVEF remained unchanged (32±7% to 34±10%, p=0.12). Changes in global RV volumes corresponded to changes in both RV body and RVOT volumes. At a mean follow up of 21 months, 53% of patients had normalized their RV size (108 cc/m²) with a mean RV volume relative reduction of 34%.

Conclusion. PVR leads to normalization of RV volume in adult patients with repaired TOF when performed before the RV reaches 150% of its normal size. Whether normalizing RV size in these patients will have an impact on their morbidity and mortality remains to be seen.

11:45 a.m.

886-6 Patients Maintain Coronary Perfusion and Exercise Capacity After Arterial Switch Surgery for Transposition of the Great Arteries

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Background: The arterial switch operation has been the treatment of choice for D-transposition of the great arteries (DTGV) since the early 1980s. We sought to evaluate mid term outcomes of the arterial switch operation.

Methods: 20 (15 male) randomly selected patients underwent metabolic treadmill exercise stress testing (EST) and exercise Myoview[®] myocardial perfusion scanning at least 7 years after arterial switch operation. All patients were asymptomatic. Exercise parameters were compared to 33 (18 male) controls, tested during the same time period, who underwent EST for history of chest pain and who had no symptoms during the stress test.

Results: Average age was 11.1 years in the patient group and average time since surgery was 10.6 years. All patients were asymptomatic during EST. Exercise time was lower in the DTGV patients (12.6 minutes compared to 14.1 minutes in the control patients; p≤ 0.01). However, maximal oxygen consumption (VO_{2Max}) was similar in the DTGV patients and controls (36.2 vs 39.9 cc/kg/min; p=n.s.). Anaerobic threshold (26.0 vs 26.9 cc/kg/min), heart rate (186 vs 189 beats/minute) and pulse oximetry (96.5 vs 96.8 %) at peak exercise were not significantly different between the groups. Myocardial perfusion scanning initially demonstrated questionable perfusion defects in 2 of the 20 patients. Repeat scanning in these two patients was normal, demonstrating no perfusion defects. This resulted in normal exercise coronary perfusion scans for all patients.

Conclusion: This study evaluated both coronary perfusion reserve and comprehensive EST data in patients after arterial switch surgery for DTGV at mid term. Patients demonstrated normal stress myocardial perfusion at least 7 years after surgery and performed peak exercise similar to controls. These data show an excellent mid term surgical outcome of arterial switch surgery, suggesting continued growth, patency and response to exercise in the coronary arterial circulation.