

**Valved patches for closure of ventricular septal defects in patients with severe right ventricular pressure overload**

*Francisco A., Teixeira A., Nogueira G., Maymone M., Abecasis M., Neves J. P., Anjos R.  
Centro Hospitalar de Lisboa Ocidental- Hospital de Santa Cruz; Lisbon; Portugal*

VSD closure in patients with severe RV pressure overload secondary to pulmonary hypertension or pulmonary artery (PA) hypoplasia is often associated with significant morbidity and mortality.

The records of 11 patients operated with VSD closure with valved patches since January 2000 were reviewed. Ages ranged from 1 to 23 years (median 8 years); 6 were male. RV pressures ranged from 87 to 120 mmHg (90% at systemic level).

Six patients had large VSDs (5 perimembranous, 1 muscular) all with pulmonary hypertension (PAH). In this group mean PA pressure was 60,4 mmHg, mean PVR was 6,9 Wood units (4,2 to 11,4 in air, decreasing to 4,3 (1,3 to 9,7) after O<sub>2</sub>/NO testing). QP/QS ratio ranged from 1.2 to 3.3 in air and after vasoreactivity test 3,0 to 6,2.

The remaining 5 patients had Tetralogy of Fallot (TF) or PA atresia and hypoplastic PAs, with previous BT shunts or RV to PA conduit (5), stenting of PAs (2) and MAPCAs embolization (3).

All patients underwent VSD closure with a unidirectional valved patch constructed with a dacron savage patch with a 5 to 7 mm circular hole and a monocusp valve of 0,1mm thick PTFE or pericardial patch on the left side. In TF/PA group surgery for RVOT and PA bifurcation was performed in 2 patients.

There was no mortality. Mean follow up was 3,8 years (1 to 11 years). In the VSD group, 4 patients had episodes of right to left (RL) shunt in the post-operative period, well tolerated hemodynamically, requiring NO during 8 to 30 hours. There was no evidence of late RL shunt. In the TF/PA group, the immediate postoperative period was well tolerated without evidence of RL shunt. One patient developed high RV pressure, tricuspid regurgitation and severe systemic congestion 4 years after surgery, with no shunt at patch level at this time. Another patient had bacterial endocarditis 2,5 years after surgery.

Closure of large VSD's with valved patches in patients with PAH or PA hypoplasia provided encouraging results. The possibility of surgical correction in this group of patients should not be dismissed without consideration of this alternative approach.