

### A 10-year experience with aortopulmonary window repair in children: an uncommon anomaly with an excellent outcome

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**BACKGROUND.** Aortopulmonary window (APW) is rare and single institutional experience is low. The purpose of this study is to describe our approach to the management of APW and its associated lesions and to assess the outcomes over a 10-year time period.

**PATIENTS/METHODS.** We conducted a retrospective review of all children (n=8, 50% males) who underwent surgical repair of APW between 2006 and 2015. Clinical features, surgical approach and early and late outcomes are included.

**RESULTS.** Median age at surgery was 19 days (range 4-30) for 6 neonatal patients. Two patients were older than 1 month (3.5 month and 6 year-old respectively). Median weight was 4.9 kg (range 2.5-15.7). Type I (proximal) APW was detected in 5 and type II (distal) in 3 of them. Simple APW was present in 3 patients (37.5%) and 5 patients (62.5%) had concomitant cardiac defects. Associated cardiac lesions (n=6) included interrupted aortic arch type A (n=2), perimembranous ventricular septal defect (VSD) (n=1), atrial septal defect (ASD) (n=2) and congenital mitral valve regurgitation (n=1). The APW was repaired by direct closure in 2 patients (25%) and transaortic patching (bovine or autologous pericardial patch) in 6 patients (75%). Single-staged repair of APW and aortic arch repair (n=2), VSD closure (n=1), ASD closure (n=2) and mitral valve repair (n=1) was performed in those patients with associated anomalies. Cardiopulmonary bypass time was 81+/-22 minutes (range 54-120); aortic cross-clamping time was 35+/-21 min (14-57). Median length of stay (intensive care unit) was 9 days (range 4-19). Operative/in-hospital mortality was zero. Median follow-up was 4.3+/- 2.5 years (range 1-7): overall survival was 100%; freedom from reoperation was 87.5% (n=7) (1 patient underwent mitral valve replacement 3.5 years following surgery); freedom from percutaneous procedures was 87.5% (n=7) (1 patient required ballooning due to supravalvular aortic stenosis 7 months following surgery). All patients demonstrated normal pulmonary artery and aortic growth, normal pulmonary pressures, no residual shunts and NYHA functional class I/II.

**CONCLUSIONS.** Despite being a rare anomaly, the current strategies for APW repair using cardiopulmonary bypass are associated with excellent outcomes. A single-staged repair of associated cardiac anomalies is advised.

