Long-term clinical experience with Amplatzer Ductal Occluder II for closure of the persistent arterial duct.

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OBJECTIVES: To describe the long term clinical experience and follow-up of the Amplatzer Ductal Occluder II (ADO II) in a single tertiary referral centre.

METHODS: All patients undergoing attempted transcatheter closure of persistent arterial duct (PDA) with the ADO II were included. Data including demographic, clinical, echocardiographic parameters, procedural details and outcomes were reviewed retrospectively.

RESULTS: 62 patients (46 female) with a median age of 1.2 years (range 0.43-76 years) and a median weight of 9 kg (range 4.7-108 kg) underwent attempted transcatheter ductal closure with the ADO II from March 2008 until December 2012. Retrograde arterial approach was used in 2 patients. In one patient with Loey Dietz syndrome and a large aneurysmal duct, 2 occluders were inserted from both transarterial and transvenous ends with good result. Ductal morphology varied but the majority were large and tubular or tortuous. Device sizes used were 3/4 (n=14), 3/6 (n=5), 4/4 (n=11), 4/6 (n=8), 5/4 (n=7), 5/6 (n=10), 6/4 (n=3) and 6/6 (n=2). The median fluoroscopy time was 7.4 minutes. ADO II was released in 60 patients (96.7%). Two patients had significant residual shunting following deployment of ADO II and underwent closure with Amplatzer ductal occluder I (ADO I). Another four patients required ADO II resizing following deployment of the initial device. Device embolisation of ADO II to the pulmonary artery occurred in 5 patients. All occluders were retrieved successfully at a second catheter procedure. Of these, one underwent successful surgical closure; three were closed with ADO I; and one was closed with a larger ADO II. Complete occlusion on echocardiography was noted in 87% of the remaining occluders (48/55) pre-discharge and 98% at first follow up (54/55). One patient had persistent mild flow acceleration (2.5m/s) in the left pulmonary artery at follow up.

CONCLUSIONS: The ADO II is highly effective for occlusion of arterial ducts with variable anatomy from either an arterial or venous approach with a low profile delivery system. Stable occluder position is highly dependent on accurate device diameter sizing, good quality imaging to visualise device configuration after deployment, and operator experience.