

Background The management of the right ventricular outflow tract (RVOT) is a common feature in congenital cardiac surgery. A number of valved conduits are available. We reviewed the outcomes of the Vascutek RVOT Elan Conduit in patients from a specialist congenital surgical centre.

Methods Between 2010 and 2011, 25 patients (13 male, mean age: 25.5 years) received an Elan conduit in the RVOT position. 24 reported previous open cardiac surgery. Most common diagnosis was Tetralogy of Fallot (n=19 (76%)).

Results The mean follow up period was 4.96 years.

24 (96%) patients were alive at the time of censorship. 16 adverse events were noted and defined as haemodynamically significant conduit and/or valve stenosis (n=12), death (n=1) and bacterial endocarditis (n=3).

12 (48%) patients required re-intervention (10 transcatheter pulmonary valve replacements [8 Medtronic Melody and 2 Edwards Sapien] and 2 surgical pulmonary homografts). Mean time to re-intervention 1.7 years (range 0.25 – 4.36 years)

Conclusion This review of RVOT Elan conduits demonstrates that in a significant proportion of patients there is short interval to re-intervention due to haemodynamically significant conduit and/or valve stenosis. (Figures 1 and 2) The conduit was technically attractive for transcatheter intervention.

Other centres have published favourable results in the first 12 months after surgery. There are no other reported outcomes after this period. Our review suggests that ongoing frequent clinical assessment is required and should continue beyond the first 12 months.

The Elan conduit is no longer in production and the search for the ideal valved RVOT conduit continues at a time when homograft availability is becoming an increasing challenge.

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ACCURACY OF COMPUTED TOMOGRAPHY FOR DETECTING GREAT VESSEL STENOSIS OR HYPOPLASIA IN COMPLEX CONGENITAL HEART DISEASE PRIOR TO SUPERIOR BIDIRECTIONAL CAVOPULMONARY CONNECTION: COMPARISON WITH CARDIAC CATHETERIZATION AND SURGICAL FINDINGS

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Aim This study sought to investigate diagnostic accuracy and safety of computed tomography (CT) in assessing great vessel stenosis/hypoplasia prior to superior bidirectional cavopulmonary connection (BCPC) compared with cardiac catheterisation and surgical findings.

Method and results Twenty-seven patients (37% after Norwood operation) who were assessed by CT prior to BCPC between January 2010 and June 2016, at median age of 229 days (range 96 days–3.2 years), were included. Median weight at the time of BCPC was 8.3kg (4.0–13.4kg), median time from previous surgery 222days (97–885 days). Sixteen of the patients also underwent cardiac catheterisation.

Patients received significantly higher radiation dose at cardiac catheterisation than at CT (median 2.6, IQR 1.6,3.5 mSv versus 1.2, IQR 1.0, 1.9 mSv; respectively;p=0.040).

Four patients (25%) suffered minor complications from cardiac catheterisation. There were no complications from CT scan. All cardiac catheterisations were performed under general anaesthesia. No sedation was required for any of the patients for CT.

Based on surgical findings, the accuracy of CT for detecting stenosis/hypoplasia of either pulmonary artery was 99.7%. Nine right and 11 left pulmonary artery branches were enlarged at the time of surgery. CT did not miss any stenosis/hypoplasia of branch pulmonary arteries and reported 2 cases of branch pulmonary artery hypoplasia which were considered at the time of BCPC surgery to be normal.

Conclusion CT may replace cardiac catheterisation for identification of great vessel stenosis or hypoplasia in patients before BCPC. This requires less radiation, carries less morbidity and can be performed without sedation in this fragile group of patients.

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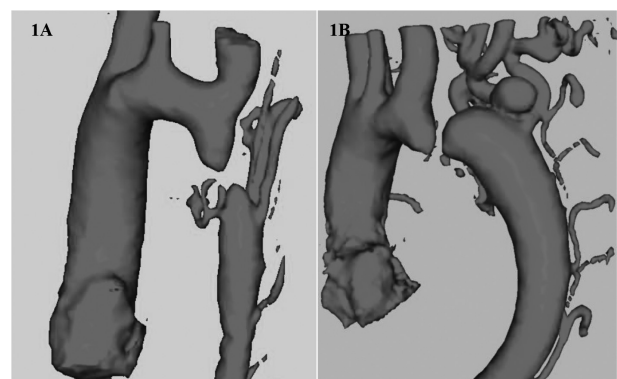
TRANS-CATHETER RECONSTRUCTION OF NATIVE INTERRUPTED AORTIC ARCH IN ADULTS

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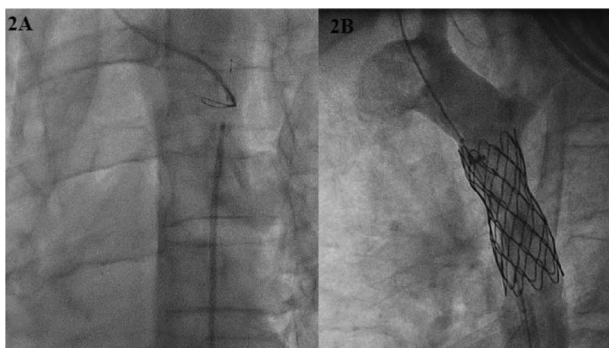
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Transcatheter stenting is widely accepted treatment for coarctation of aorta in adolescents and adults, but stenting of interrupted aortic arch (IAA) is very challenging. We report 2 cases of adults, who had successful percutaneous reconstruction of IAA in our institute.

Case 1 (33 year old) and case 2 (52 year old) presented with resistant systemic hypertension and subsequently diagnosed as having IAA in MRI scan. Right radial and right



Abstract 25 Figure 1 Showing the 3 dimensional magnetic resonance angiogram images of the aorta of the 2 cases of IAA. (A) Case 1, 33 year old man with IAA with proximal and distal stumps facing end to end. (B) Case 2, 52 year old with IAA with proximal and distal stumps facing side to side.



Abstract 25 Figure 2 Angiograms of case 1 with IAA. (A) showing left anterior oblique (LAO 20) view of the angiogram. The atretic segment was crossed retrogradely from descending aorta with RF wire which was snared from radial artery. (B) showing lateral (LAO 90) angiogram with final result after implantation of 45mm length covered CP stent.

femoral arterial access was gained in both cases. Simultaneous angiograms in proximal and distal aortic segments confirmed IAA distal to the left subclavian artery, with a short atretic segment. After multiple failed attempts to cross the atretic segment by 0.035" Terumo wire and coronary guide wires, the atretic segment in both the cases was crossed by using radio-frequency (RF) guidewire ((Baylis MedComp Inc, Montreal, Canada). We crossed the atretic segment retrogradely from descending aorta in case 1 and antegradely from aortic arch in case 2 (Figures 1, 2). We snared the RF wire with goose neck snare and created an artero-arterial circuit. We placed the Amplatzer superstiff wire in the right subclavian artery and deployed 45mm length covered Cheatham platinum stents (NuMED Canada Inc, Canada) across the atretic segment in both the cases. Final angiogram showed good stent position with no complications and the pressure gradient across the stent was 2 mmHg. The echocardiograms 24 hours after the procedures were satisfactory with no complications.