REIMPLANTATION OF A LARGER STENT FOR AN EMBOLIZED COARCTATION STENT IN A CHILD POST TRANSCATHETER CLOSURE OF THE DUCTUS ARTERIOSUS AND STENTING OF COARCTATION OF THE AORTA

Louisa Joan Go,[1], Dexter Eugene Cheng,[2]

[1] National Children's Hospital; Philippine General Hospital; Pediatric Cardiology, [2] National Children's Hospital; Delos Santos Medical Center; Pediatric Cardiology

Coarctation of the aorta with patent ductus arteriosus management has progressed over the years with the availability of stents that can potentially expand to adult sizes but routine transcatheter management is usually reserved for older and larger patient due to frequent planned reinterventions and limitation in arterial sheath sizes in smaller children.

We present a 2-year-old male, child of Jehovah's witness parents, diagnosed with congenital rubella syndrome, significant developmental delay, and failure to thrive. His upper and lower extremity blood pressure and pulses were discrepant. There was a grade 2 continuous murmur on the left upper parasternal area and a separate Gr 2 systolic murmur at the left upper back.

Echocardiogram showed a 5. 5 PDA with continuous left to right shunting and a discrete juxtaductal coarctation with a mean gradient of 80mmHg. The parents refused surgery because of risk of blood transfusion. Transcatheter option was presented as an alternative treatment due to less risk for bleeding but there will be planned reintervention due to the size of the child.

A transverse aortic angiogram showed a 4mm PDA and a discreet 2mm coarctation at the distal isthmus. There was no worsening of the coarctation gradient after ADO device closure. A 4.0mm diameter by 12mm length Abbott Sierra coronary stent was implanted, which was twice the diameter of the narrowest segment, to minimize the risk for vascular injury. The objective was staged dilatation. Post stenting, the gradient decreased to 54mmHg from baseline of 80mmHg. Echocardiogram showed the PDA device in place and the stent right beside it with good flow. The doppler pattern was still saw toothed but the gradient had decreased, with a peak of 70 and mean of 28mmHg. On follow up clinical evaluation, the child has had significant weight gain and an improvement in motor milestones.

He was brought in for re-dilation and unzipping of the stent after 4 months. However, during the attempts to cross the stent, the entire stent was pushed out of the coarctation segment by the catheter tip, which embolized over the wire to the transverse arch. The stent was retrieved using a hose neck snare. A 7mm bare metal Cook Formula Stent was then implanted, which led to significant reduction of the peak gradient to 12mmHg.

Transcatheter closure of a hemodynamically significant PDA and stenting of severe coarctation with a coronary stent is a viable option for small children with limited sheath size. This will allow the child to grow and eventually allow for a larger sheath during re-intervention, which is inevitable with growth.