Closure of a Krichenko Type C Patent Ductus Arteriosus

Dr. David Meerkin
Dr. Amiram Nir
Department of Cardiology
Shaare Zedek Medical Center
Jerusalem

Diagnosis
A 7 year-old asymptomatic girl presented with a continuous heart murmur heard at routine check up. A transthoracic echocardiogram revealed a patent ductus arteriosis (PDA) that measured 3mm in diameter and 5mm in length. It was associated with a moderate left to right shunt. Aorto-pulmonary pressure gradient was 90mmHg. Additionally, mild flow acceleration was noted across the aortic arch.

Procedure
The patient was intubated and under general anesthetic underwent right and left heart catheterization. Aortic coarctation was excluded by angiography and pressure measurements. An aortogram performed with a 4Fr pigtail catheter in the left lateral position demonstrated the presence of a PDA (Figure 1). It measured 2mm in diameter with a length of 5mm.

A 4Fr Judkins Right 4 (JR4) coronary catheter was advanced from the right femoral vein to the pulmonary artery and used to cross the PDA. A 0.035" wire was passed distally through the catheter to the abdominal aorta. The JR4 catheter was exchanged on the wire for a 4Fr AMPLATZER® TorqVue® Low Profile Delivery Catheter that was advanced to the aorta at the level of the diaphragm. A 9-PDA2-03-04 (03 = device waist, 04 = device length) AMPLATZER® Duct Occluder II (ADO II) was advanced through the delivery catheter and the distal disc was deployed in the descending aorta. The system was then retracted to engage the aortic ampulla of the PDA. The mid portion of the device was then exposed to occlude the ductal channel. The proximal disc was then exposed and pushed against the pulmonary arterial wall (Figure 2).
An aortogram demonstrated excellent positioning and ductal occlusion with no device protrusion into the aorta (Figure 3).

Finally, the device was released and repeat aortography confirmed an excellent result (Figure 4). Echocardiography reaffirmed ductal occlusion with the absence of device protrusion in the pulmonary artery.

**Conclusion**

This case demonstrates the ease and rapidity of PDA closure with the ADO II. The combination of the 4Fr TorqVue Low Profile delivery system and the ADO II device allows for the closure of the ductus. The device results in complete closure of the ampulla and duct with the added safety of both pulmonary artery and aortic retention discs that seat well against the vessel walls with no interference to flow.

![Figure 3: Aortogram prior to release](image1)

![Figure 4: Aortogram post-release](image2)