Case Report

Challenges in Transcatheter Closure of Patent Ductus Arteriosus in Adults

Harish Surwade* Parag Bhalgat[1], Rahul Chhabria[2]

1. Pediatric consultant cardiologist, Jaslok hospital and research center, Mumbai
2. Consultant cardiologist, Jaslok hospital and research center, Mumbai

***Corresponding Author: Harish Surwade *.** DNB Registar in cardiology, Jaslok hospital and research center, Mumbai.

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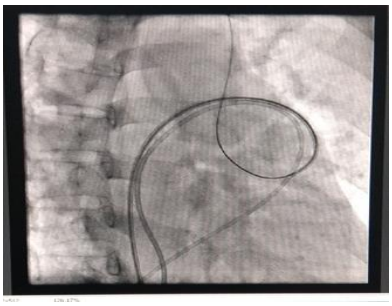
INTRODUCTION

Transcatheter closure of patent arterial duct is standard of care and well-established procedure in infants as well as grownups1. The procedure is carried out generally in infancy and the first few decades of life. It is extremely rare to find an open duct in the fourth or fifth decade of life. Closure of duct later in life can be challenging. Long-standing volume overload can change anatomy i.e. dilated pulmonary artery, dilated aorta, severe pulmonary hypertension, the abnormal orientation of duct, etc.

We wish to discuss a case of PDA device closure in 45 yr female and challenges encountered along with the possible explanation for same. **(**6**)**, **(**7**)**

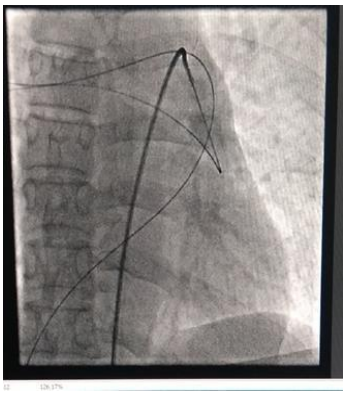


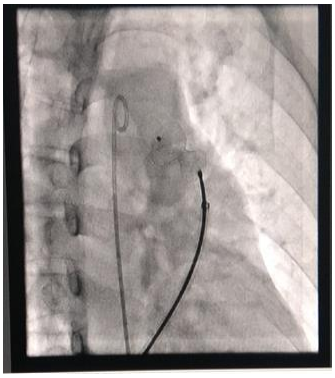
CASE

A middle-aged premenopausal lady, 45 yr presented with CL II symptoms. There were no risk factors like diabetes, hypertension, tobacco. On examination, she had a continuous murmur in Lt infraclavicular area. Pulse pressure was wide. Transthoracic echocardiogram showed a 7mm patent arterial duct with Lt to Rt shunt. There was volume overload on the left side. There was no other cardiac lesion. Pro and cons of PDA closure with the device were explained. **(**4**)**

After valid consent, the procedure was carried out under local anesthesia. Baseline hemodynamics were suggestive of wide puls pressure (Aorta 136/ 68mmHg) and elevated pulmonary artery pressure (40 /16mmHg).5 PDA was profiled in the left lateral and RAO 30 views. Due to dilated aorta, PDA ended on in the left lateral. In the RAO 30 view, PDA had a more vertical course than usual.

There was a big ampulla. Aorta as well as MPA were dilated. Multiple attempts to cross PDA from PA end with straight/angle tip wire with catheters like Judkin's Right, multi-purpose A, etc failed. PDA was crossed from Aortic end and wire was parked in the left pulmonary artery. With wire as a landmark, one more attempt was made to cross PDA from the pulmonary artery. PDA could be easily crossed with MAP over an angled wire in the retrograde direction. After this Exchange length wire was parked in descending aorta and the delivery sheath was advanced in DTA. Wire in LPA was removed. PDA was closed with an 18*16 device as a standard procedure. The device was also setting more vertical than usual. Post-procedure there was no residual shunt.





DISCUSSION

In infancy and toddlers, the lie of PDA is more horizontal **(**2**)**, **(**3**)**. Great vessels are not of the size as seen in adults. With currently available hardware, the retrograde crossing of PDA is hardly

met with difficulties. **(**7**)**, **(**8**)**, **(**9**)** In present patient, due to age and long-standing shunt, there was significant dilatation of the main pulmonary artery and aorta. The vertical orientation of PDA may be due to the dilatation of great vessels. All these factors made the retrograde crossing impossible. Placing wire and catheter from aortic end helped in more than one way10. It changed the orientation of PDA as well as provided landmarks for catheter and wire manipulation. Had it failed, snaring of wire from PA was the only option left.

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