SUCCESSFUL LVOT STENTING IN TRANSPOSITION OF GREAT ARTERIES WITH LVOT OBSTRUCTION: A CASE SERIES

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History and physical:

The first case was a 13-day-old baby, 2.8 kgs, with peripheral saturation of 28%. The second case was a 28-day-old baby, 3.7 kgs with peripheral saturation of 50% and high level of lactat. The third case was a 3-year-old boy, 12 kgs, with hypoxic spell despite of optimal propranolol doses with peripheral saturation of 68%.

Imaging:

Transthoracic echocardiography (TTE) of the three cases showed TGA, VSD and subvalvar PS.

Indication for intervention:

We attempted to stent the LVOT as an alternative option for systemic to pulmonary arterial shunt in TGA with subvalvar PS when ductal stenting is not possible.

Intervention:

In the first case, 3.5/5F JR guiding catheter and 0.014" floppy coronary wire was used to cannulate the LVOT and advanced to distal RPA. Several predilatations were performed using 2 x 20 mm semi-compliant coronary balloon inflated up to 12 atm and followed by 3 x 20 mm non-compliant coronary balloon inflated up to 14 atm. Stenting was done with 4 x 24 mm coronary stent inflated up to 22 atm. Peripheral saturation was increased to 82%.

In the second case, angiography showed a total occlusion of PDA. PDA recanalization was failed. Plan was changed to LVOT crossing, from retrograde to antegrade approach using 0.014" coronary wire. The wire was changed to 0.035" stiff wire. Then the patient suffered of bradycardia and PEA. CPR was attempted and the procedure was continued. LVOT was predilated using 6.0 x 60 mm non-compliant vascular balloon inflated up to 10 atm, followed by RV-VSD-LVOT-MPA stenting using 7.0 x 29 mm vascular stent inflated up to 11 atm. ROSC was achieved in 5 minutes. Aorta saturation was increased to 90%.

In the third case, 3.5/5F JR guiding catheter and 0.035" stiff wire was placed inside the distal LPA. Several predilatations were performed using 6 x 40 mm non-compliant vascular balloon inflated up to 20 atm. Stenting was done in LVOT with 8 x 29 mm vascular stent inflated up to 14 atm. Aorta saturation was increased to 95% with McGoon ratio increase from 1.5 to 1.9.

Learning points of the procedure:

These three cases highlight an alternative approach to ductal stenting or surgical method of systemic to pulmonary shunt. LVOT stenting in TGA with subvalvar PS is minimally invasive, balances out antegrade pulsatile pulmonary blood flow, and permits pulmonary arterial growth.

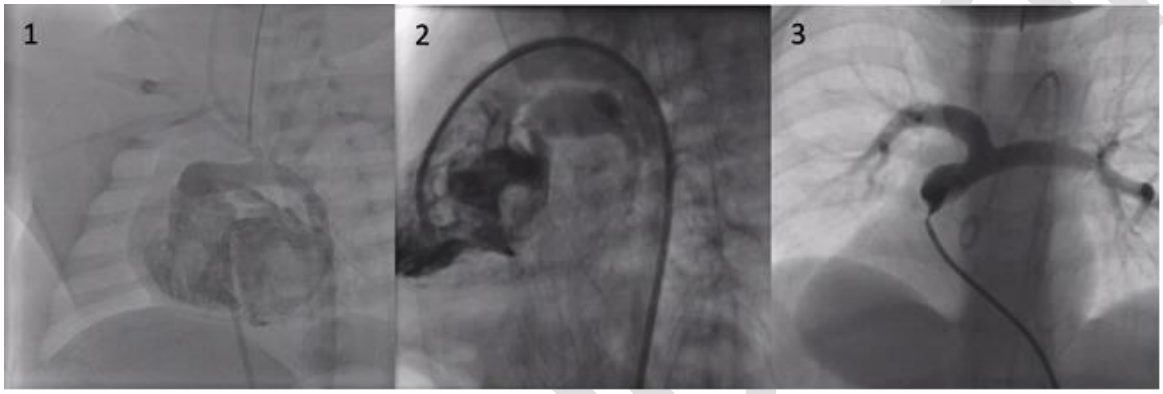

Image 1: Angiography showed subpulmonic infundibular stenosis in the three cases.

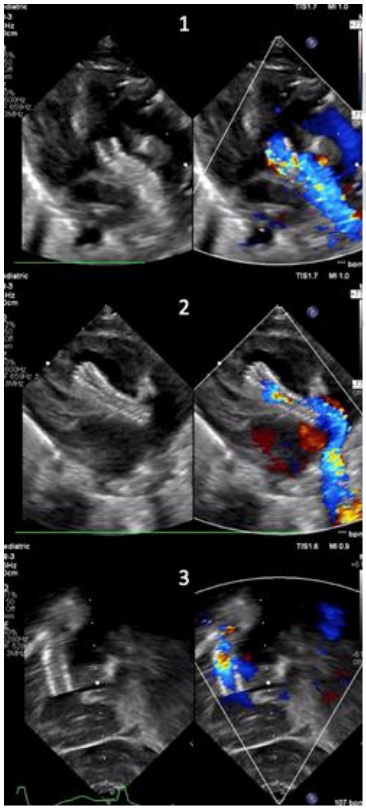

Image 2: TTE evaluation showed patent stent in the LVOT.