



RIGHT VENTRICULAR OUTFLOW TRACT STENTING IN TETRALOGY OF FALLOT CHILDREN WITH VENTRICULAR DYSFUNCTION: A SERIAL CASE

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History and physical:

A 7-year-old boy was admitted to the emergency department (ED) with complaining shortness of breath. Peripheral saturation was 70% at admission, during hospitalization he suffered recurrent hyper cyanotic spell and cardiac arrest. For second case an 8-years-old boy came to ED with dyspnea during exertion, peripheral oxygen saturation was 60%.

Imaging:

Transthoracic echocardiography (TTE) in first case shown classical ToF, McGoon ratio 1.4 and biventricular dysfunction. Left ventricular ejection fraction (LVEF) was 39.5% and tricuspid annular plane systolic excursion (TAPSE) 12,6 mm, we also found thrombus in left ventricle. In second case TEE we also found ToF with biventricular ventricular function, very poor left ventricular function, LVEF 15%, TAPSE 12,2 mm and tight infundibular pulmonary stenosis.

Indication for intervention:

Due to poor ventricular function patients was considered high risk for morbidity and mortality if surgical procedure performed, surgical conference decided to do right ventricular outflow tract (RVOT) stenting as a palliative strategy for both cases.

Intervention:

First case: 8F sheath was inserted suddenly patient developed bradycardia and pulseless electrical activity. Cardiopulmonary resuscitation (CPR) was performed for two minutes then procedure continued after return of spontaneous circulation (ROSC). 3.5/5F guiding Judkins Right catheter was put in distal right pulmonary artery (RPA). 0.035" stiff wire was inserted to distal RPA and he suffered another cardiac arrest and CPR was done for the rest procedure. Mustang Balloon (NC) 6x60mm inserted, inflated 8 atm three times, followed by stenting with 9.0x39 mm Omnilink vascular stent and inflated up to 16 atm. Three minutes after stent

deployment ROSC was achieved and saturation was increased from 72 to 92%. TTE showed LVEF increased to 55 % after one week of stenting placement.

Second case: 8F sheath was inserted and 3.5/5F guiding JR was put in RVOT. By using 0.035" soft hydrophilic wire catheter advanced into distal RPA, then exchanged to 0.035" super-stiff wire. Mustang vascular balloon 8.0x60mm inflated up to 20 atm for several times. Omnilink vascular stent 10.0x19mm was put in the RVOT and inflated up to 14 atm. Saturation was increased from 69 to 93%. Two weeks after stent implantation LVEF was improved to 40%.

Learning points of the procedure:

ToF with ventricular dysfunction is a rare finding and make surgical strategy become high risk. Non-surgical interventions such as RVOT stenting is expected to reduce hypoxia and increase oxygen saturation in order to improve ventricle function before undergo surgical procedure.

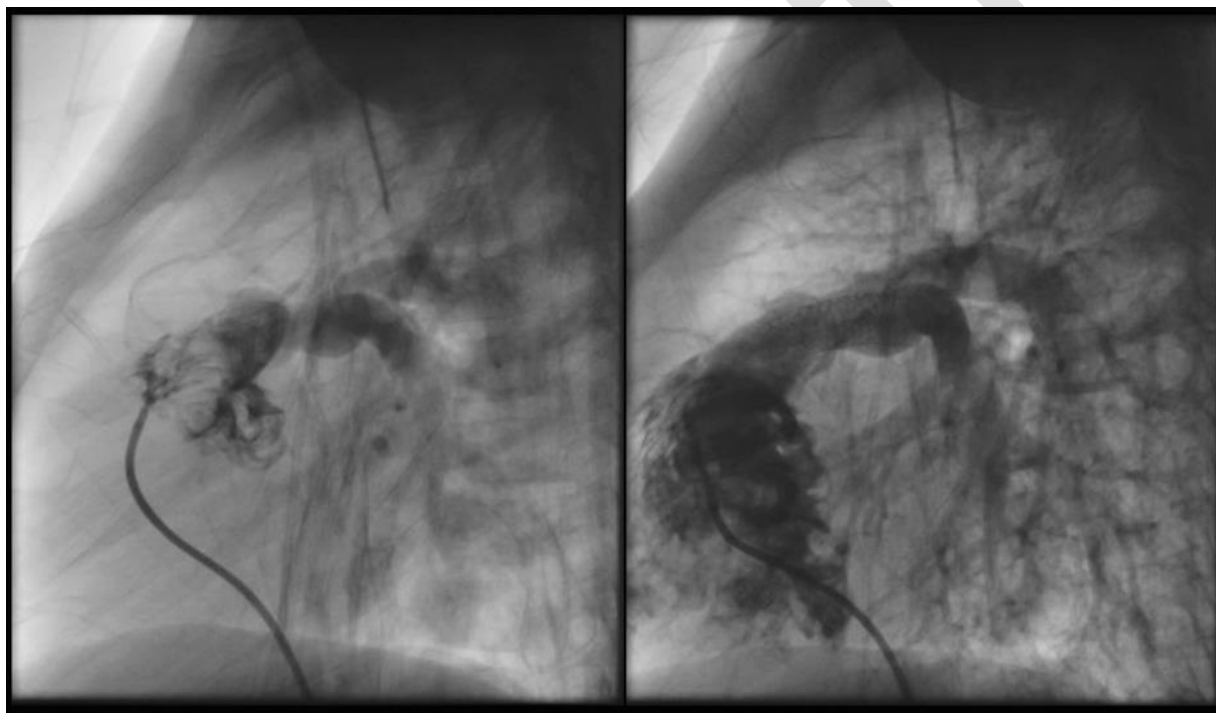


Image 1: First case RVOT angiography pre and post stenting

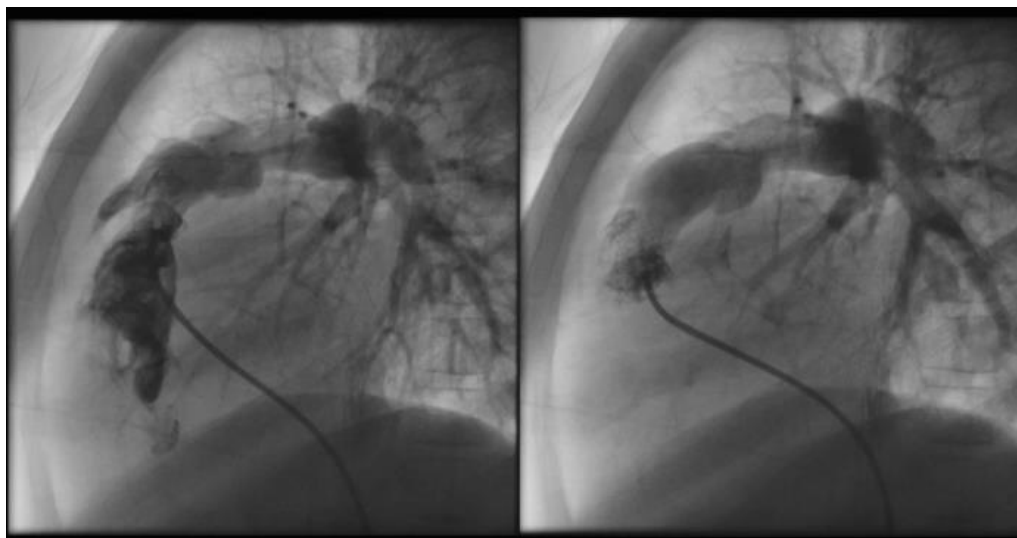


Image 2: Second case RVOT angiography pre and post stenting

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