



## RIGHT VENTRICULAR OUTFLOW TRACT STENTING IN TETRALOGY OF FALLOT IN NEWBORN WEIGHTING LESS THAN 2 KG

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### **Background:**

Tetralogy of Fallot with cyanosis requiring surgical repair in early infancy reflects poor anatomy and is associated with more clinical instability and longer hospitalization than those who can be electively repaired later. We bridged symptomatic infants with risk factors for early primary repair by right ventricular outflow tract stenting (RVOT stent). With today's generation of coronary stents which have better profile, flexibility and trackability, RVOT stent may be achieved safely and with considerably less difficulty than previously described, especially in very premature new born baby.

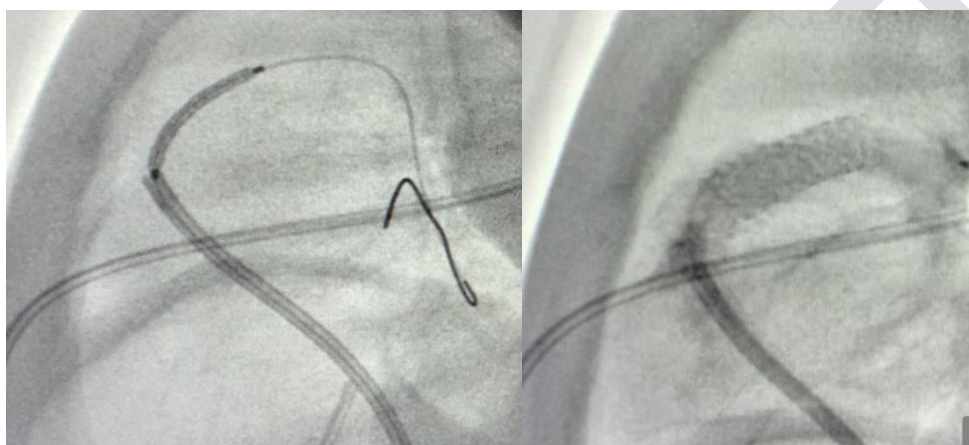
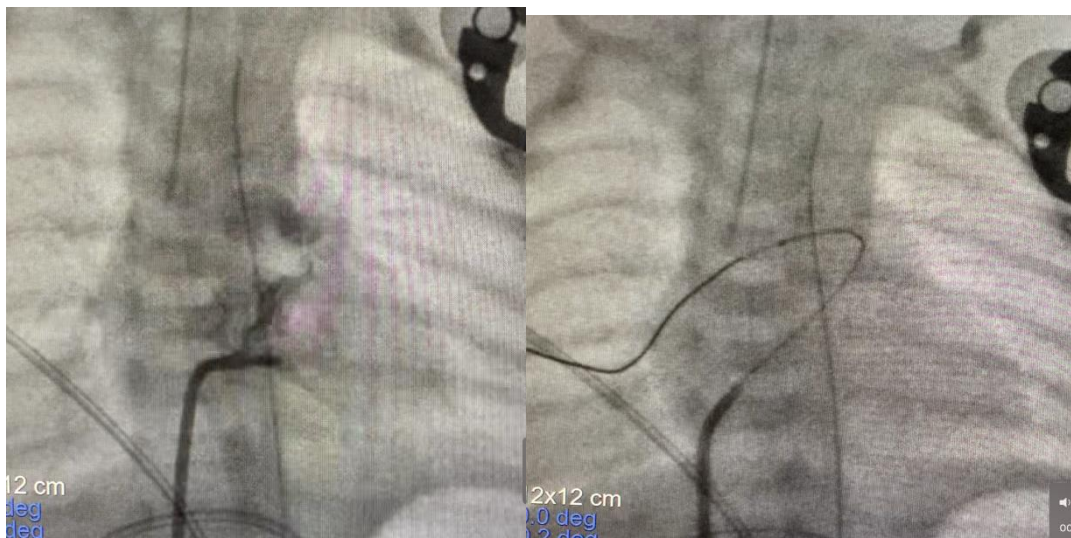
### **Method:**

Several cases report.

### **Results:**

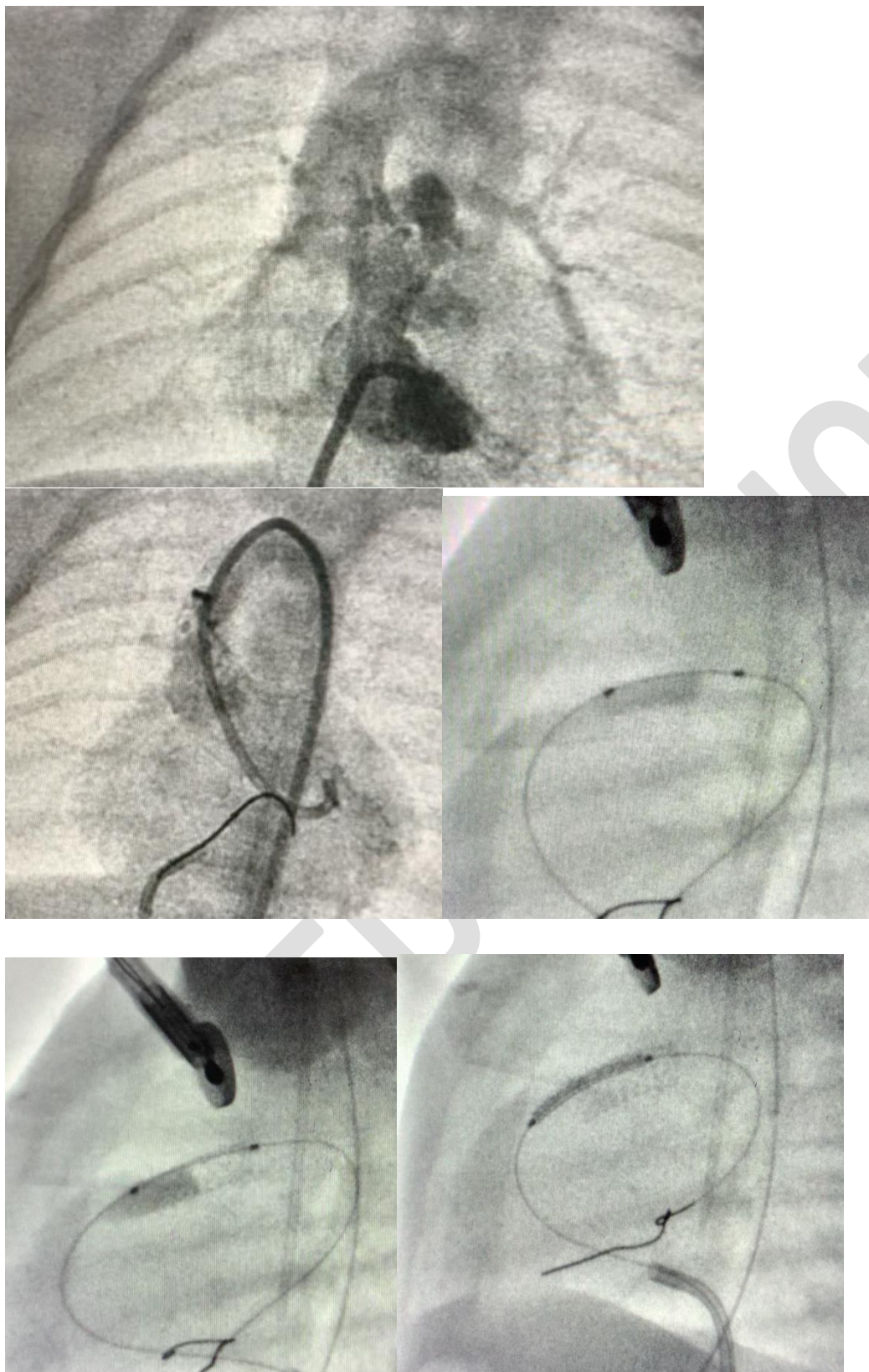
#### Case 1

A 15-day-old 1500 gram newborn with duct dependant tetralogy of Fallot, severe right ventricular outflow tract obstruction. His saturation was 72% under artificial ventilation. She was then catheterized. To prevent femoral artery damage, we obtained only a femoral venous access and with the help of a 5 Fr guiding catheter, we deployed a 4.5 x 15 mm coronary stent. Oxygen saturation was increased to 85%. He was stable and weaned the ventilation 3 days after procedure with saturation around 85%.



## Case 2

A 5-day-old 1500 gram newborn with duct dependant tetralogy of Fallot, severe right ventricular outflow tract obstruction and a saturation of 62% was catheterized. 5 Fr and 4Fr sheaths were used for the femoral vein and artery catheterization at first attempt. However, the RVOT was so coarse that we couldnot guide the 0.014 guirewire to the pulmonary artery both from venous and arterial site. The patient was transferred back to NICU ward with high dose epinephrine and nor epinephrine to maintain satuarion about 60%. 3 days later, Second attempt was successful with the help of microcatheter and 0.014 guirewire and 3.5x 15 mm coronary balloon. We deployed a 4.5x15 mm coronary stent without using a guiding catheter. Venous catheter was used to guide the best place for stent deployment. Oxygen saturation was increased to 83%. However, because the RVOT was not covered entirely by the stent, the saturation went down. Another 4x 13 mm coronary stent was placed, which turned the patient to stable again. No vascular complication occurred and the child was discharged 1 week later.

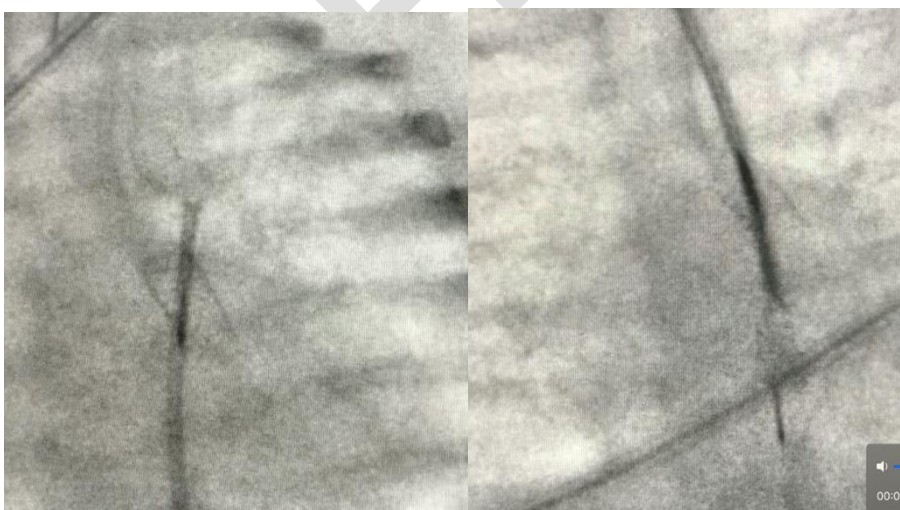
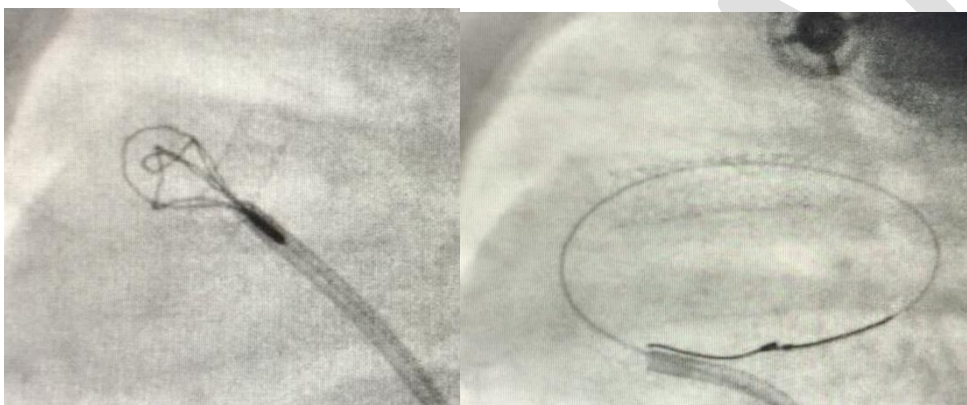
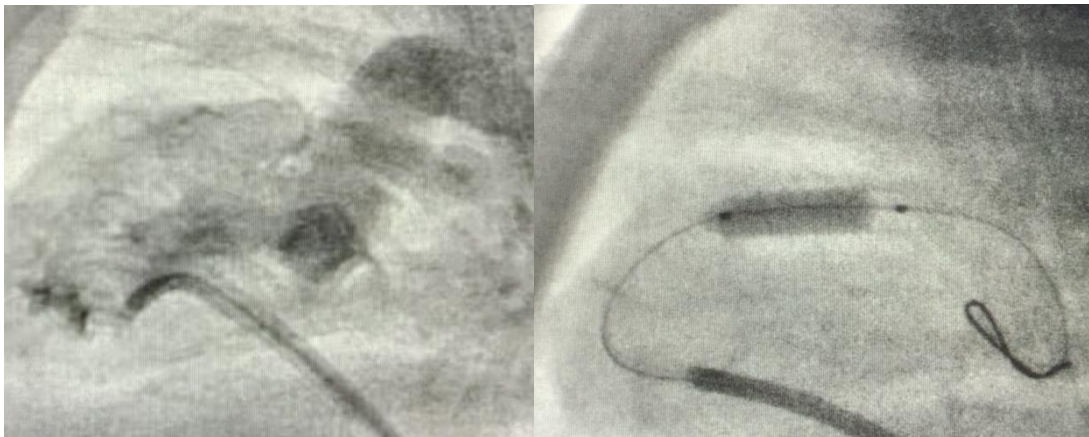


### Case 3

A 7-day-old 24000 gram premature newborn with duct dependant tetralogy of Fallot, severe right ventricular outflow tract obstruction and a saturation of 68% was catheterized. On angiography, the PDA has closed and the RVOT was measured to be 2 mm at the most narrow



part. We stented the RVOT with 4x 13 mm coronary stent which ambolized away to the descending aorta through the VSD. Another attempt to stent the RVOT with a second 4.5x16 mm coronary stent was successful to make the patient stable with saturation around 85% before snaring the first stent out of the aorta through 4 Fr sheath at the carotid artery. The patient was discharged 10 days after the procedure without vascular complications.





**Conclusion:**

Right ventricular outflow tract stenting of symptomatic tetralogy of Fallot with poor anatomy (small pulmonary arteries) and adverse factors (multiple comorbidities, low weight) relieves cyanosis and defers surgical repair. However, the procedure can be very tough and surprising.

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