

Acute pulmonary oedema: An immediate complication after percutaneous pulmonary valve implantation

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Background

Percutaneous implantation of pulmonary valve is an alternative to surgery in right ventricular outflow tract (RVOT) residual lesions. Acute pulmonary oedema is a rare complication that appeared in 2 of our 25 valve implants.

Case 1: Twenty year old male (56Kg) with Tetralogy of Fallot operated with transannular patch as an infant. At age 13 a surgical bioprosthesis pulmonary valve was implanted. Seven years after, the valve degenerated to stenosis and regurgitation. The patient was catheterized and a 39 mm CP stent was implanted over the bioprosthetic valve, in the same procedure a Melody valve was implanted. The procedure ended with good results and a right ventricle (RV) pressure at 40% of systemic pressure. No complications occurred. The patient received 98 ml of contrast and under 1000 ml of saline infusion. Minutes after extubation the patient suffered abrupt desaturation with radiologic image of acute pulmonary oedema.

Case 2: Twenty-three year old male (60Kg) with TGA. Arterial switch was performed in neonatal period. In the evolution, at 4 years of age, he required RVOT surgery with transannular patch due to pulmonary stenosis. The stenosis evolved to severe RVOT obstruction with systemic pressure in RV. Two stents were implanted in RVOT and 6 months after a Melody valve was implanted, with good results and RV pressure at 47% of systemic pressure. No complications occurred during the procedure. The patient received 269 ml of contrast and 1000 ml of saline. Minutes after extubation the patient presented serohematic secretions in the airway and had radiologic findings of acute pulmonary oedema.

Both cases resolved after 24 hours of mechanical ventilation and intravenous diuretic treatment.

Comment. A latent diastolic dysfunction of the left ventricle could explain the acute pulmonary oedema after the increase of flow in the pulmonary circulation due to the valve implantation. Larger series of patients could help identify risk factors for this complication.