

**Right heart failure due to an acute obstructing fracture of a Melody® valve stent**

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Introduction: Transcatheter pulmonary-valve-implantation has become a well established treatment of conduit dysfunction. Wire fractures, especially when no pre-stenting was done may occur, usually not causing functional problems. We report a case of an acute obstruction due to stent fracture two years after PPVI.

Patient: A 21 years old male patient with Fallot who underwent VSD closure and RV/PA conduit with 12 years received a 20mm PPV in May 2007 without pre-stenting.

Chest X-ray revealed a first singular wire fracture after three months. During FU over two years more fractures occurred but with no influence to the stent integrity. Cardiac MRI 6, 12 and 24 months after implantation showed normal stent morphology and valve function.

Patients case was discussed on the Implanter Meeting 2009 and close observation was recommended.

29 months after implantation the patient was admitted with acute right heart failure. Because of a "funny" shape of the PPV in chest X-ray he was referred to the cardiology department and underwent acute cardiac catheterisation.

The anterior proximal circumference of the PPV had completely lost its integrity with the fractured part protruding into the lumen of the distal portion in every systole causing subtotal obstruction.

The lesion could be passed to reestablish adequate pulmonary blood flow. Three pre-stents (Intrastent LDMax® 20x36mm) were implanted excluding the broken PPV. Finally a second Melody® on a 20 mm Ensemble® could be placed successfully. No residual gradient and full competence of the valve was observed during the follow up period of 14 months. No wire fracture could be found so far, although detection is difficult in an ensemble of five stents.

Discussion: Being a covered stent the Melody® valve may obstruct itself when broken parts - fixed by the tissue - are pressed into the lumen by the force of blood flow. The case history stresses the recommendation for pre-stenting every conduit before implanting a Melody®. Early treatment with a new PPV in not pre-stented patients may avoid severe complications.