

**Long term outcomes after percutaneous pulmonary valve implantation in complex right ventricular outflow tracts using the “folded” Melody® valve technique.**

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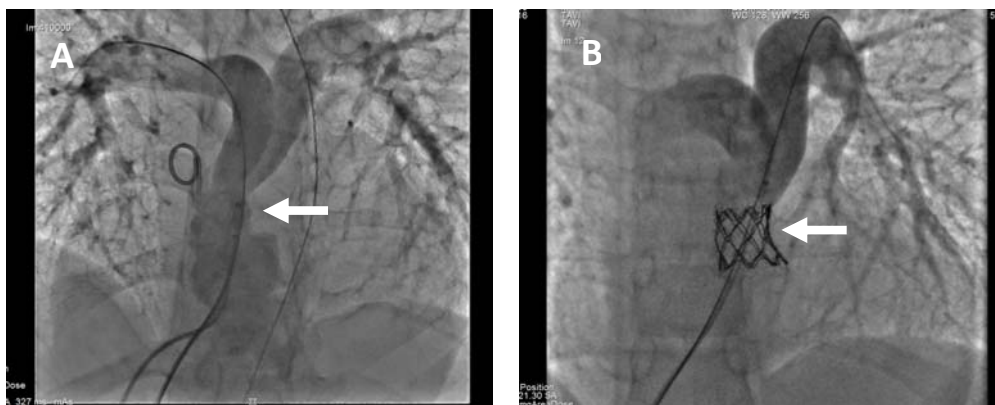
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Introduction: Percutaneous pulmonary valve implantation (PPVI) has been validated as a valuable therapeutic option for the management of patients with dysfunctional right ventricular outflow tracts (RVOT). In these complex lesions, we reported that the implantation of a modified and “folded” Melody® valve was feasible and provided good early hemodynamic results

Methods: This is an observational multicenter study conducted in French tertiary Centers, between April 2012 and November 2018. Procedural and follow-up data of patients implanted with a “folded” Melody® valve were collected retrospectively from medical records in order to identify the clinical and hemodynamic mid-and long-term outcomes including: survival rate, clinical conditions, valvular function, need for reintervention, stent fracture and infective endocarditis.

Results: PPVI using the folded valve technique was performed in 10 patients. Mean age at PPVI was 22.8 years old (range 12 to 41). 60% were males. Indications for the folding valve were short RVOT and early bifurcation of pulmonary arteries in 6 patients and bioprosthetic valves in 4 . No complication occurred during procedures. All patients had excellent hemodynamic results (mean post PPVI RV-PA gradient was 12.2 mmHg, 4 patients had trivial pulmonary regurgitation (PR) and the remaining had no PR). After a mean follow up of 30.6 months (range 10 to 66 months), mean echocardiography assessed RVOT peak velocity was 2.9m/s. Only one patient had trivial pulmonary regurgitation and two had mild to moderate pulmonary stenosis. No patient had reintervention. No valve dysfunction nor stent fractures were observed. No patient developed Endocarditis. Survival rate after 30.6 of follow-up was 100%.

Conclusions: The “folded valve technique” is a safe modification of the Melody® valve which provides good long term results without increased rate of valve related complications.



Folded Melody® valve implantation in a patient diagnosed of Truncus arteriosus type 2A with short RVOT and early PA bifurcation. (A) Angiogram showing short RVOT with early PA bifurcation (white arrow) and free PR; (B) Angiogram after Folded valve implantation showing good valve function. Note the terminal stent struts on either sides of the Melody® valve that were folded over itself and the significant decreasing of device's length (white arrow).