Transcatheter Melody® valve implantation in pulmonary position. Expanding anatomical indications

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Transcatheter pulmonary Melody® valve implantation: immediate results and mid term follow in diverse RVOT anatomies

**Background:** Transcatheter pulmonary Melody® valve implantation was originally designed to treat surgical RV-PA conduits. We describe our experience in Melody implantation in different Right Ventricular Outflow tract (RVOT) anatomies.

**Methods:** retrospective review of clinical records of the 17 patients who underwent percutaneous Melody valve implantation in our center between February 2012 and October 2014. Indications, RVOT anatomies, technique, immediate and mid term results were evaluated.

**Results:** The indication was combined stenosis and regurgitation (n=13), severe pulmonary regurgitation (n=3), severe stenosis (n=1). The anatomy of the RVOT was previous surgical conduit (n=6), native outflow tract (n=6), pulmonary biological prosthesis (n=3) and single right pulmonary artery (n=2). Venous access used for the Melody implantation was femoral (n=13) and jugular (n=4). Pre-stenting was performed in 16 patients. Immediate results: successful implantation was achieved in all 17 cases. The peak hemodynamic gradient fell from $28.3 \pm 11.8$ to $10.88 \pm 6.2$ mmHg and the RV / Ao pressure ratio from $0.57 \pm 0.11$ to $0.41 \pm 0.10$, and only one patient had mild residual periprosthetic regurgitation. One patient developed a small aneurysm in the conduit distal to the prosthesis, that remained stable during follow up. Follow up. In a mean follow-up of $1.15 \pm 0.74$ years (maximum 2.4 years), the valves remained competent and all patients maintained the improvement in their functional class. One patient developed moderate gradient needing balloon redilatation of the Melody 4 years after the implantation. One patient had bacterial endocarditis 6 months after the implantation, resolved with antibiotic treatment.

**Conclusions:** Percutaneous Melody® valve implantation is an alternative to surgery not only for dysfunctional surgical conduits, but also for other anatomic types of RVOT, with good immediate results and in the medium term follow up.