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**The size is not the matter: Percutaneous pulmonary valve implantation in extreme small conduits.**

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Background: Guidelines allow percutaneous pulmonary valve implantation (PPVI) with the Melody valve, in dysfunctional right ventricular outflow tract (RVOT) conduits >16 mm in diameter at the time of implant. It is not clear that small original conduit diameter should be an a priori exclusion criterion for PPVI. Limited data are available regarding the ability to enlarge conduits substantially beyond the original diameter or with significant conduit wall injury.

Methods: All patients with an original (implanted) expandable RVOT conduit diameter <16 mm who underwent percutaneous catheterization for intended PPVI at our institution from March 2007 to November 2018 were analyzed for this study.

Results: A total of 31 patients met inclusion criteria and 20 were finally included, (11 of 31(35%) patients had a conduit that was larger than the reported implant diameter (1 pulmonary homograft, 10 Contegra) and were excluded). Median age and weight of the 20 patients was 9,9 (3,4-17) years and 33 (13-81) kg. The median original conduit diameter was 13 (11-15) mm, and the median narrowest conduit diameter was 11,7 (7-14,9) mm. Conduits were enlarged to a median diameter of 20,4 mm (42% larger than the implanted diameter). Largest balloon to measured conduit diameter ratio was 166% (129-257). There was significant hemodynamic improvement post-implant, median RV/Ao pressure ratio pre-procedure and post-procedure was 65% (37-104) and 42% (24-88), and no significant residual peak RVOT pressure gradient and pulmonary regurgitation. During a median follow-up of 2.7 years, freedom from RVOT reintervention was 100% and 95% at 2 and 4 years, respectively, and there were no deaths and 2 cases of endocarditis.

Conclusion: In our experience, PPVI with the Melody valve into small conduits (<16mm), was feasible and safe, with favorable outcomes, that did not appear to differ dramatically from published series in larger conduits and valves. We achieved a median diameter 42% larger than the nominal conduit implanted (29% previously reported in a multicentric study) without significant conduit wall injury.