Infective endocarditis of the Melody valve in a patient with absent pulmonary valve syndrome

Ana Veljača[1]*,
Irena Ivanac Vranešić[1],
Dražen Belina[1],
Željko Đurić[1],
Kristina Marić Bešić[1,2],
Darko Anić[1,2],
Hrvoje Gašparović[1,2]

[1]University Hospital Centre Zagreb, Zagreb, Croatia
[2]University of Zagreb, School of Medicine, Zagreb, Croatia

KEYWORDS: infective endocarditis, absent pulmonary valve syndrome, cardiac surgical procedures.

CITATION: Cardiol Croat. 2025;20(5-6):172. | https://doi.org/10.15836/ccar2025.172

***ADDRESS FOR CORRESPONDENCE:** Ana Veljača, Klinički bolnički centar Zagreb, Kišpatićeva 12, HR-10000 Zagreb, Croatia. / Phone: +385-91-5497805 / E-mail: veljaca.ana@gmail.com

ORCID: Ana Veljača, https://orcid.org/0009-0004-4843-3179 • Irena Ivanac Vranešić, https://orcid.org/0000-0002-6910-9720
Dražen Belina, https://orcid.org/0000-0002-9830-1981 • Željko Đurić, https://orcid.org/0000-0001-9448-8286
Kristina Marić Bešić, https://orcid.org/0000-0002-4004-7271 • Darko Anić, https://orcid.org/0000-0002-7378-944X
Hrvoje Gašparović, https://orcid.org/0000-0001-6871-8746

Introduction: Absent Pulmonary Valve Syndrome (APVS) is a rare congenital anomaly characterized by features of tetralogy of Fallot with complete absence of pulmonary valve tissue.[1] After complete surgical correction, many patients require reoperation/reintervention later in life due to significant right ventricular outflow tract (RVOT) dysfunction. The Melody transcatheter pulmonary valve (TPV) is an effective option for addressing RVOT dysfunction in patients with previously implanted conduit between the right ventricle (RV) and the pulmonary artery (PA).[2,3]

Case report: 24-year-old male underwent complete surgical repair of the APVS at 18 months of age, which was performed in our institution. His initial surgery included the closure of the ventricular septal defect with the implantation of the RV-PA conduit. At the age of 11, he required reoperation due to stenosis of the conduit, and a larger (22 mm) Contegra conduit was implanted. A decade later, he underwent the implantation of a Melody TPV to address restenosis in the RV-PA conduit. Four years after implantation, the patient presented with cough and febrile illness at the local hospital. An echocardiogram showed signs of pulmonary valve (PV) stenosis, which raised suspicion of infective endocarditis (IE). MSCT pulmonary angiography revealed the presence of septic emboli in the lungs, accompanied by lung infarctions. Initial laboratory tests showed leukocytosis, elevated C-reactive protein levels, and blood cultures confirmed the presence of *Staphylococcus epidermidis*. Subsequently, antibiotic therapy was initiated, and the patient was transferred to our institution where an echocardiography exam confirmed severe PV/conduit stenosis with suspicion of distal conduit thrombosis. Urgent surgery was indicated with the removal of the Melody valve and conduit, followed by the implantation of an aortic homograft in the pulmonary position. The patient completed antibiotic treatment and was doing well at the 3-month follow-up.

Conclusion: Although a TPV implantation is nowadays a standard treatment procedure for residual RVOT dysfunction in patients with previously implanted PV conduits, it carries a significantly increased risk for IE. Clinicians should be aware that these patients need prompt evaluation for IE if a new febrile illness with PV stenosis occurs.

RECEIVED:
March 16, 2025
ACCEPTED:
April 2, 2025

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