

Edge-to-edge mitral repair with the Pascal system in a patient with corrected tetralogy of Fallot and bilateral hip joint contractures due to poliomyelitis

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A 62-year-old male with a medical history of anatomical correction of tetralogy of Fallot and simultaneous tricuspid and aortic valve replacement at the age of 52 was admitted to our hospital with progressive dyspnea and fatigue that had gradually worsened during the last few months. As the sequence of poliomyelitis that the patient had suffered in early childhood, he developed hip joint contractures. Transthoracic echocardiography (TTE) revealed significant functional mitral regurgitation (MR) with posterior leaflet restriction (effective regurgitant orifice 0.4 cm², regurgitant volume 52 ml), systolic dysfunction of the dilated left ventricle (ejection fraction, 42%; left ventricular end-diastolic diameter, 62 mm), hypokinetic right ventricle (S' 9 cm/s; tricuspid annular plane systolic excursion [TAPSE], 12 mm) and biatrial enlargement. The function of the previously replaced tricuspid and aortic valves was fine. Coronary angiography did not show any significant

coronary lesions. The patient was on optimal guideline-driven pharmacotherapy over the past few months and was not a candidate for a heart transplant. Given the high surgical risk, the patient was qualified for MR transcatheter edge-to-edge repair (TEER) with the MitraClip system (Abbott Vascular, Santa Clara, CA, US) [1]. However, the pre-procedural checkup revealed that the stand stabilizing the MitraClip delivery catheter could not be placed over the patient's lower extremity because of severe hip contractures; positioning the MitraClip stand in between the patient's legs was unmanageable. Nevertheless, it was possible to place the smaller stand for the PASCAL (Edwards Lifesciences, Irvine, CA, US) TEER system in an unusual fashion between the patient's legs (Figure 1A), and the successful procedure was then performed in a standard manner. A Single PASCAL ACE device was implanted with good immediate echocardiographic results (Figure 1B–E). The patient

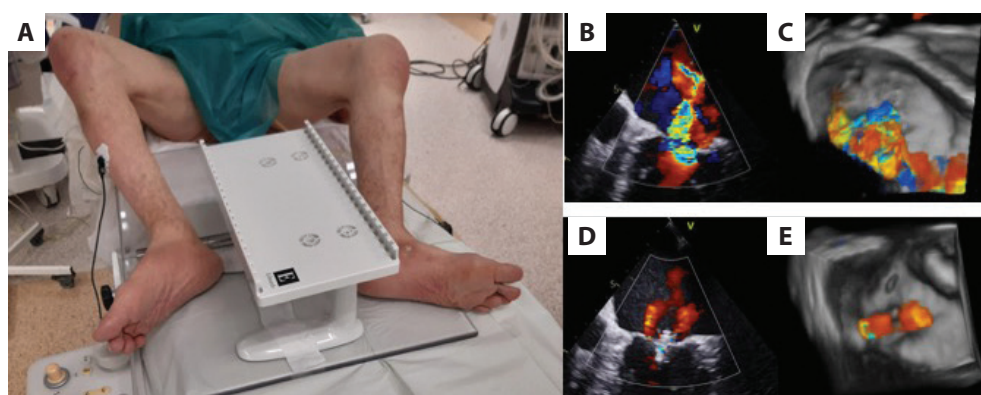


Figure 1. Patient's positioning and Pascal delivery stand (A). Baseline, severe mitral regurgitation demonstrated on 2-dimensional transesophageal echocardiography (TEE) (B) and 3-dimensional TEE (C). Reduction in mitral regurgitation to mild with two separate, small residual jets after implantation of the device demonstrated on 2-dimensional TEE (D) and 3-dimensional TEE (E)

was discharged home uneventfully in the New York Heart Association functional class II. TTE performed at 30-day follow-up documented stable and good procedural results.

To the best of our knowledge, this is the first case report of the PASCAL device implantation in a patient with congenital heart disease. The progression of left ventricular heart failure and functional MR occurs in patients after tetralogy of Fallot correction [2, 3] and the TEER procedure may be a viable therapeutic option for those patients. Moreover, we described a practical solution for the unusual procedural obstacle related to the hip joint contractures.

Article information

Conflict of interest: None declared.

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