For a better landing

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A high proportion of the patients with tetralogy of Fallot who previously underwent corrective surgery require pulmonary valve replacement (PVR) due to significant pulmonary insufficiency and progressive right ventricular dilatation. Percutaneous PVR using a Melody valve (Medtronic Inc, Minneapolis, Minnesota) has been increasingly used with excellent medium-term freedom from reintervention.^{1,2} However, there are some anatomic contraindications for percutaneous Melody valve implantation, such as markedly dilated right ventricular outflow tract (RVOT) with no waist to anchor the valve, and an implanted tissue valve with an unfavorable angulation. Trezzi and colleagues³ report an innovative surgical technique of PVR for patients with postrepair tetralogy of Fallot with pulmonary insufficiency.³ The technique was particularly designed to overcome 2 major above-mentioned contraindication for future percutaneous PVR. The polytetrafluoroethylene (PTFE) graft was used for 2 purposes: to reduce the size of the RVOT, and to provide a cylindrical RVOT geometry that is a suitable landing site for future

Melody valve (Medtronic Inc, Minneapolis, Minnesota).

Central Message

Surgical technique for placement of the Melody valve (Medtronic Inc, Minneapolis, Minnesota) in dilated right ventricular outflow tract.

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percutaneous PVR. The initial experience of 8 patients appears to be promising. In addition to 2 major advantages, relatively straightforward surgical technique required and reproducibility would be further benefits of this technique.

Whether this technique with a Melody valve brings a better long-term outcome regarding valve durability and reintervention rate is yet to be determined. Although medium-term valve competency of the Melody valve up to 7 years is excellent,² we still have to see how this valve works 10 to 15 years after implantation. There is a concern of infectious endocarditis after Melody valve implantation: 4.3% in 1 series, and 89% freedom from infectious endocarditis at 5 years in the other series.^{1,2} These numbers are somewhat higher than those with a tissue valve in the

FIGURE 1. Melody valve with a PTFE sewing cuff (Medtronic Inc, Minneapolis, Minnesota).

pulmonary valve position among tetralogy cohort, which ranges from 0% to 3.5%.^{4,5} With an extra PTFE graft in situ, infectious endocarditis risk has to be determined in the subsequent follow-up studies.

We have recently performed PVR in a patient aged 2.5 years who had undergone tetralogy of Fallot and had a hugely dilated RVOT and right ventricle at 2 years following the corrective surgery. Based on our experience with Melody valve implantation in the mitral valve position, we created a sewing cuff by placing a 4 mm PTEF graft wrapped around the Melody valve (Figure 1) and surgically implanted the valve in the pulmonary valve position using a continuous suturing technique. The valve was not dilated by a balloon and was left as a baseline diameter of 18 mm. This technique is particularly attractive for a patient like this who is in rapid somatic growth. The valve can be dilated in future when the valve becomes small relatively to the rest of the heart.

Trezzi and colleagues³ should be congratulated for their innovative approach to overcome this difficult problem, and their follow-up study would be of great interest.

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