Authors have nothing to disclose with regard to commercial support.

A BRIDGE TO HEART TRANSPLANT: SYSTEMIC ATRIOVENTRICULAR VALVE REPLACEMENT WITH A MELODY VALVE IN AN INFANT

WITH A SINGLE-VENTRICLE PHYSIOLOGY

To the Editor:

We recently reported a case of atrioventricular valve (AV) replacement with a Melody valve (Medtronic, Minneapolis, Minn) in a 3-month-old, 3.2-kg infant with unbalanced atrioventricular septal defect, dominant left ventricle who presented with severe AV regurgitation and borderline ventricular function.¹ In this letter, we would like to report an update on the Melody valve status and the patient's clinical

course until successful heart transplantation at 13 months after the AV replacement.

The patient was transferred to the ward 3 weeks after the Melody valve replacement and remained in the hospital until transplant. He has been in overall stable condition with standard diuretic regimen and fluid restriction. He never needed noninvasive respiratory support or oxygen inhalation. End-organ function remained within normal range, but he required a gastrojejunal tube for ongoing feeding intolerance. He had slow but steady weight gain (Table 1). The systemic ventricle function recovered to normal 1 month after the Melody valve replacement, and the peak pressure gradient across systemic ventricle outflow tract has been minimal (Table 1). The regurgitation of the Melody valve remained trivial. There was an increase in a mean gradient across the Melody valve, which had some fluctuation. The patient never required balloon dilatation of the valve (Table 1; Figure 1, A-D). Moderate left upper pulmonary vein stenosis had developed at the last follow-up echocardiography.

The patient received ABO-incompatible heart transplantation at 13 months (411 days) after the Melody valve replacement. Left upper pulmonary vein stenosis was present but was not related to the Melody valve stent. The vein was repaired with a left-sided sutureless repair. There was no residual anatomic lesion.

The examination of the explanted heart showed that the distal stent wedge resection was aligned with systemic ventricular outflow tract, and no folding, bulging, or fracture of the Melody valve stent was identified (Figure 1, H). All 3 valve cusps were macroscopically thin and intact (Figure 1, F).

The case we presented¹ demonstrated that AV valve replacement with a Melody valve could successfully bridge

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TABLE 1. The follow-up echocardiography after the Melody valve* replacement

Time after valve replacement (mo)	Weight (kg)	Degree of Melody valve regurgitation	Melody valve mean pressure gradient (mm Hg)	SVOT peak pressure gradient (mm Hg)	Systemic ventricular function
1	3.9	Trivial	4	Not measured	Normal
2	5.3	Trivial	7	5	Normal
3	5.5	Trivial	6	22	Normal
4	6.4	Trivial	13	20	Normal
6	7.3	Trivial	7	10	Normal
7	7.9	Trivial	8	17	Normal
8	8.5	Trivial	10	Not measured	Normal
9	8.8	Trivial	8	Not measured	Normal
11	8.5	Trivial	10	Not measured	Normal
13	9.03	Trivial	8	9	Normal

SVOT, Systemic ventricular outflow tract. *Medtronic, Minneapolis, Minn.

FIGURE 1. Well-preserved valve function of the Melody valve (A-D) and encouraging gross inspection (F-H).

a complex single ventricle patient to heart transplantation. Given the well-preserved valve function and the encouraging gross inspection of the implanted Melody valve, the strategy may also be used as an adjunctive treatment in the staged single-ventricle palliation in patients with irreparable AV valve regurgitation.

Shuhua Luo, MD, PhD^{a,b,c}

Osami Honjo, MD, PhD^{a,b}

^aDivision of Cardiovascular Surgery

Labatt Family Heart Centre

The Hospital for Sick Children

Toronto, Ontario, Canada

^bDepartment of Surgery

University of Toronto

Toronto, Ontario, Canada

^cDepartment of Cardiovascular Surgery

West China Hospital of Sichuan University

Chengdu, China

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LESSONS LEARNED FROM MELODY VALVE RETRIEVED AT TRANSPLANTATION

Reply to the Editor:

In their letter to the Editor, Honjo and co-authors¹ provide an update on a patient who underwent common atrioventricular valve replacement with a stented bovine jugular vein graft

FIGURE 1. Melody (Medtronic, Minneapolis, Minn) valve examined at cardiac transplantation, 3 months after implantation.