

Hybrid melody valve implantation in mitral position in a child with Shone's complex and failure of two previous prosthetic valves.

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Background:

The use of the stented bovine jugular vein graft (Melody™ valve) in the mitral position in children is an off-label treatment option for valve replacement. It is useful as not only it can be implanted in very small annuli but also it may limit pannus formation. Additionally only antiplatelet treatment is sufficient postoperatively, compared to anticoagulation for mechanical valves.

Case Report:

We describe a case of Melody™ valve implantation in the mitral position in a three year old girl with Shone's complex who underwent two unsuccessful mitral valve repairs followed by two mechanical valve replacements. Both mechanical valves prosthesis were 19 mm Saint Jude®, placed supraannular. During removal of both mechanical valves, pannus formation was noted intraoperatively, due to florid fibrous proliferation presumably related to underlying Shone's complex. This pannus was impinging the valve mechanism with restricted leaflet motion on fluoroscopy and there was secondary thrombus formation.

It was felt that further mechanical valve replacement would lead to the same problem. An 18 mm Melody™ valve was chosen and implanted surgically as per the technique described by the Boston Group (Shortening and trimming of the valve, creating a wide V shape opening to the outflow). The Melody™ valve was then directly balloon expanded up to 18 mm. The heart resumed activity in complete heart block needing pacing. Later a permanent pacemaker was implanted. The immediate post-operative Echo showed valve length 23 mm with circumferential inner diameter 16mm. The mean estimated inflow gradient through the Melody™ valve was 4 mmHg with no regurgitation. The peak velocity in the left ventricle outflow tract was 1.6 m/sec. The post-operative period was uncomplicated and the child was discharged after 20 days.

Conclusion:

In selected patients Melody™ valve should be considered as a treatment option for mitral valve disease in children especially where all other techniques have failed. This technique as described by the Boston Group can be safely performed even in complex cases such as this one. This use of the Melody™ valve, is however off-label without long-term follow-up data, and so close follow-up of the patient is needed.