

Commentary: Aortic valvuloplasty in children...if you like it then you should've put a ring on it!



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Central Message

Aortic ring annuloplasty might be an effective treatment strategy in select children with bicuspid aortic valve disease.

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In this month's edition of *The Journal of Thoracic and Cardiovascular Surgery*, Wolsky and colleagues present, to our knowledge, the first case report showcasing the use of a geometric ring annuloplasty to repair a dysfunctional bicuspid aortic valve in a child.¹ The treatment of complex aortic valve disease in children remains a controversial topic and is muddled by numerous and disparate treatment modalities; multiple techniques of leaflet repair, neocuspidization (Ozaki technique) and valve replacement (mechanical, bioprosthetic, pulmonary autograft [Ross procedure]). The pendulum seems to continue to swing between evolving reparative techniques and a finely-tuned Ross procedure.² This timely report introduces a reproducible technique to effectively recruit and repair native aortic valve tissue in an appropriately selected child.

The male patient is 12 years old and clinically asymptomatic with a severely regurgitant bicuspid aortic valve and significant left ventricular hypertrophy. A 19-mm bicuspid annuloplasty ring, sized to the nonfused cusp, was implanted and after additional leaflet height manipulation, the patient received an excellent clinical result with minimal aortic stenosis or regurgitation. I concur with the authors assessment that the strengths of this technique are its reproducibility and ability to reduce annular size, create 180° commissures, recruit effective leaflet height, and namely, the preservation of all native tissue. However, the lack of robust clinical data about long-term durability remains a significant weakness of this study.

The case report details 6-month objective data about valve function and 1-year subjective clinical data. The newness of this technique significantly limits the authors ability to describe long-term effectiveness and freedom from reoperation/reintervention. In particular, I am concerned about the long-term hemodynamics of a 19-mm ring as children grow into adults, and the long-term mobility

and function of such thickened and dysfunctional leaflets. The authors report that they have now performed this procedure in more than 30 pediatric patients with similarly good results, but acknowledge that they have minimal 2-year follow-up data. However, the authors reference recent data in an adult series of similar patients with excellent 2-year functional results, even in patients who were repaired with a 19-mm ring.

I congratulate the authors on an excellent case report using a novel technique for aortic valve repair in children. I am optimistic and look forward to the analysis and publication of their midterm data. However, this report is emblematic of the problem of addressing aortic valve disease in children: the numerous and different single-center experiences using different techniques. Perhaps it is time for the pediatric community to implement a more collaborative and multi-institutional effort to address what is actually the most effective technique for the different valve morphologies and hemodynamics. There is clearly a role for each of these modalities, but until we can clearly identify these roles, we continue to push ahead in isolation.

References

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