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Commentary: Aortic valve reconstruction and the Ozaki procedure in children—Finding the best fit

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CENTRAL MESSAGE

Aortic valve repair can have acceptable short-term results. Effective patient selection will yield optimal results.

Aortic valve disease continues to be a challenging problem in pediatric patients. We continuously search for new innovations, as our best options are imperfect. In this issue of the *Journal*, Wiggins and colleagues[1] from Great Ormond Street present their short-term results using the Ozaki procedure (neotricuspidization) and other valve reconstruction techniques in children and young adults. This is currently the largest retrospective single-center review in children and young adults, comprising 58 patients from 2015 to 2019. The median age at the time of surgery was 14.8 years. The smallest annular dimension in the cohort was 18 mm. There was 1 late death unrelated to valve repair and 7 reoperations during a median follow-up of 14.1 months. The authors concluded that aortic leaflet repair provided acceptable short-term outcomes.

Initial enthusiasm for the Ozaki procedure may be understandable, given our current lack of dependable solutions for children with aortic valve disease. However, we should not ignore history and should keep in mind that short-term success has never been the issue with aortic valve repair. In this study, 25% of patients had greater than moderate aortic regurgitation at 3 years and 12% required reoperation within the short follow-up period.[1] The durability of repair remains the question.

The role of aortic valve repair techniques including the Ozaki procedure remains to be defined. In some studies, including that from the host institution, patients undergoing the Ross procedure with similar dimensions as the current cohort had a 10-year freedom from aortic valve reoperation of 80% to 92%,[2,3] and thus it may be difficult to recommend aortic valve repair when the Ross procedure can have excellent outcomes. However, as the authors admit, aortic valve repair is not intended as a long-term solution. They propose several circumstances when aortic valve repair can be highly beneficial, such as in patients with anatomy unsuitable for the Ross procedure (eg, those with truncal arteriosus) or in staging patients toward aortic valve replacement with a prosthesis large enough to account for growth to adulthood. Another such situation may include patients at increased risk for root dilation, who could be staged toward a ''reinforced'' Ross procedure within an adult-sized gel-weave graft.

The challenge remains to find the best options for the care of aortic valve disease in children and young adults. The role of valve repair remains to be defined, but it appears that selective application in a particular group of patients may yield the best results.

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