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AORTIC VALVE NEOCUSPIDIZATION: OVERSIZED SHOES FOR CHILDREN?

Reply to the Editor:

For adult patients, aortic valve neocuspidization (AVNeo) with glutaraldehyde-treated autologous pericardium is a very attractive option, with neither any limitation in annulus size nor any need for anticoagulation and with favorable midterm results.¹ These features are enough to draw the attention of pediatric cardiac surgeons as well. In their letter, Kalfa and colleagues² mentioned their preliminary pediatric AVNeo cases, which had been performed on children for whom the Ross procedure was unsuitable.

Growth, however, poses a big hurdle in pediatric cardiac surgery. The fundamental question is “What is the optimal size?” The generous size of AVNeo neocusps seems suitable for growing children, but an increase in size of the aortic annulus and the sinotubular junction would probably affect function and durability of the leaflet, assuming that neocusps would not grow. One would easily imagine that the greater the size change in aortic root, the more likely the chances of leaflet failure. A finite study regarding aortic root size change may help to predict future behavior of neocusps.

On the other hand, the use of the autologous pericardium for neocusps in children raises concerns of durability. Thin,

easily calcifying leaflets in a rapidly beating, growing heart may yield different outcomes from those seen in adult patients. “Off-the-shelf” materials could be used, especially in patients with no available pericardium because of previous surgery or pericardial pathology. A proper material remains yet to be identified.

Despite substantial concerns, in children with otherwise untreatable pathology, AVNeo would be a valuable option. Giving to a child the chance of growing up until the inevitable next surgery is of priceless value. We are looking forward to seeing the pediatric AVNeo results of Kalfa and colleagues.²

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