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Commentary: Aortic valve repair: How much is too much?

Derek Serna-Gallegos, MD,[a,b] and Ibrahim Sultan, MD[a,b]

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CENTRAL MESSAGE

Complex aortic valve repair can be performed for rare aortic valve congenital anomalies with acceptable short-term results, but long-term results are unknown.

Motoki and colleagues[1] present a case of a rare congenital anomaly, pentacuspid aortic valve, in a 52-year-old patient who underwent cusp repair with tricuspidization and aortic root remodeling. The authors are to be congratulated for a good outcome and on their previous work on complex aortic valve repair.[2] This was performed on a 52-year-old woman with severe aortic regurgitation and a normal aortic root. Follow-up at 3 years demonstrated mild central aortic regurgitation with improved left ventricular remodeling. This case is essentially a proof-of-concept exercise and adds to the growing amount of literature regarding aortic valve repair.[3] Recognizing the cons of both lifelong anticoagulation and the inevitable structural valve degeneration of bioprosthetic valves, there is understandably growing interest in aortic valve–sparing techniques. With as rare of a condition as pentacuspid aortic valve is, it is challenging to imagine that the specific technique will have a profound change in the big picture of aortic valve sparing operations. Nevertheless, this case demonstrates that with adherence to the principles of restoring cusp coaptation, and stabilization of the aortic annulus and sinotubular junction complex repair can be performed with adequate short-term results in selected patients. However, while surgeons may be able to repair most aortic valves with pure regurgitation, the ability to repair versus reassure patients of valve repair durability are 2 very distinct points. Most reports on long-term valve repair data are self-selected, and even bicuspid valve-sparing root reimplantation typically forms a small percentage of the valve-sparing root reimplantation cohorts.[4,5] For readers to take away that complex aortic valve repair translates to long-term durability would be misleading. In cases in which the cusps have significant calcifications, numerous fenestrations or cusp restriction, or immobility related to rheumatic disease, durable repair of the valve would be unlikely. The repair may fail in the long term with stenosis or regurgitation or a combination of both. Replacement of a pentacuspid valve is a reliable, proven treatment and in the hands of almost all surgeons can be the right choice. No matter the mid- and long-term outcome of this particular patient, the rarity of the disease makes it unlikely that any conclusions can be drawn from this endeavor other than technical safety and feasibility. The eventual results of the PROACT Xa trial, if they demonstrate safe maintenance of anticoagulation with apixiban, will have significant effects on the future of aortic valve interventions operations in patients who have unfavorable anatomy for durable aortic valve repair and freedom from aortic valve reintervention.[6] The ability to avoid warfarin anticoagulation with a mechanical valve could be a "game changer" in the aortic valve space and would likely lower the threshold for the use of mechanical prostheses in the aortic position for such patients.

From [a]Division of Cardiac Surgery, Department of Cardiothoracic Surgery, University of Pittsburgh; and [b]Heart and Vascular Institute, University of Pittsburgh Medical Center, Pittsburgh, Pa.

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Address for reprints: Ibrahim Sultan, MD, Division of Cardiac Surgery, Department of Cardiothoracic Surgery, University of Pittsburgh, Center for Thoracic Aortic Disease, Heart and Vascular Institute, University of Pittsburgh Medical Center, 5200 Centre Ave, Suite 715, Pittsburgh, PA 15232 (E-mail: sultani@upmc.edu).

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