Commentary: Finding valor in discretion: Musings on contemporary therapy for the failing aortic homograft

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Central Message

Redo surgery for failing homograft poses a complex planning and technical challenge with significant morbidity and mortality. TAVR and sutureless valve technology may improve outcomes.

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The better part of valour is discretion; in the which better part I have saved my life.

—William Shakespeare, *Henry IV, Part I*
Act V, scene 4, lines 136-8

Since the first homograft by Dr Ross¹ in 1962, there have been varying levels of enthusiasm for use of the technique around the world. In their article in this issue of the *Journal*, “Repeat Aortic Valve Replacement for Failing Aortic Root Homograft,” the Mayo Clinic group of Sedeek and colleagues² report on 54 consecutive patients undergoing reoperation between 2000 and 2018, with transcatheter aortic valve replacement (TAVR) performed in 11 cases and surgical aortic valve replacement in 40. Subsequent to 2014, 80% of patients were treated with TAVR. The surgical reoperations were not straightforward; cardiac injury on sternal reentry occurred in 38%, redo root replacement was required in 75%, concomitant operations were performed in 58%, and Cabrol modification was performed in 17%. On the other hand, vascular injury occurred in 36% of patients in the TAVR group versus 15% in the surgical aortic valve replacement group. Procedural mortalities were 8% in the surgical aortic valve replacement group and 1% in the TAVR group, with mortalities during the follow-up period of 30% and 18%, respectively.

Although a surgical mortality of 8% is commendable in such a complex reoperative setting, most surgeons are unlikely to have this breadth of surgical experience. This article is valuable in drawing attention to the potential for improvement in early results with TAVR, likely as a result of the avoidance of the often encountered calcification of the homograft requiring complete excision, reconstruction, and reimplantation of the calcified coronary ostium, all of which further press surgical skill.^{3,4} The development of TAVR and sutureless valve technology may alleviate the need for such extensive surgery without compromising short-term and, possibly, long-term survival. Previous publications have shown TAVR to be used successfully in

stentless root failures from either valve stenosis or regurgitation.⁵ The analysis of homograft root geometry adds to our understanding of a cicatrized homograft root and will assist others in planning TAVR prosthesis sizing and positioning, with a recommendation to overfill slightly. Another option exists for patients in whom TAVR is not considered to be feasible, which is not addressed in the article—the use of rapidly deployable sutureless valves.^{6,7} Although extensive root reconstruction is feasible in experienced hands, consideration of TAVR as a means of addressing the failing aortic homograft, along with judicious use of sutureless valve implantation when a surgical approach is mandated, may, for the better part, save lives.

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