Dare to double spare?

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Valve preservation surgery has been firmly established as optimal surgical treatment for degenerative mitral valve disease and is emerging as the procedure of choice for certain forms of aortic root pathology.¹ In the current issue of the *Journal*, Javadilaskari and colleagues² from the Cleveland Clinic present a series of 118 patients with both aortic root and mitral valve pathology of whom 41 had combined aortic and mitral valve-sparing operations. The authors should be congratulated for pushing the limits of valve preservation, and the low reoperative rate of 7.8% at 10 years speaks to the validity of their approach. Mitral repair rate of 86% in light of a significant number of patients requiring anterior leaflet procedures is impressive as is the overall 1.4% perioperative mortality for these complex operations. The surgical expertise required to execute these operations calls for an “aortic surgeon” to collaborate with a “mitral surgeon” as described by the authors, and such cooperation in centers of excellence will undoubtedly provide optimal outcomes for these challenging patients. The novel concept of a cardiac surgeon team challenges traditional barriers and is in itself noteworthy and deserves attention. On many levels, the study challenges the cardiac community to join the quest that the authors embarked on several years ago.

The extrapolation of the presented surgical strategy may, however, be difficult in a “real-world” scenario. The cohort of 41 combined valve-sparing operations over almost 30 years at a center currently performing more than 4000 cardiac operations annually represents a highly unusual and selected patient population that is unlikely to be duplicated in but a few centers around the world. Currently, only 5% of cardiac centers in the United States perform more than 16 aortic root surgeries per year,³ and rate of mitral valve repair nationally is still suboptimal.⁴ The call to perform such specialized procedures in high-volume centers⁵ should therefore be heeded. The authors demonstrated that double valve-sparing operations were associated with very good survival, but the follow-up was limited with only 15 patients at risk at 5 years and 8 at risk at 10 years. On the same note,

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Central Message

In selected patients with degenerative aortic root and mitral valve pathology, double valve-sparing operations offer very good midterm survival and freedom from reoperation.

See Article page 1023.

freedom from reoperation was impressive, but echo follow-up was not available, and therefore it is unknown what proportions of these patients may be surviving with significant single or double valve insufficiency. As such, the authors have illustrated the feasibility of a double valve-sparing procedure, but durability, in large part, remains to be determined. On the other hand, the results of a combined Bentall and mitral valve operation at 10 years were quite satisfactory, with 73.0% survival rate and 9.8% reoperation risk. For most surgeons in busy clinical practice, this approach is familiar and feasible. The competing risk of reoperation also should be evaluated in the context of now readily available transcatheter technologies that provide novel solutions. Transcatheter aortic valve replacement for prosthetic aortic valve degeneration is becoming a clinical reality and mitral options are on the horizon.⁶ A degenerated bio-Bentall could be addressed with a valve-in-valve transcatheter aortic valve replacement, but a failing valve-sparing aortic operation would, under current indications, require surgical intervention.

The feasibility of a combined aortic and mitral valve-sparing operation for very select patients has been demonstrated by the Cleveland Clinic group, and the collaboration of subspecialty experts to provide this surgical therapy should be applauded. As clinical experience grows and long-term follow-up data become available, double valve-sparing operations may gain further clinical foothold, but at present, caution should be exercised

when contemplating these complex surgeries and alternatives considered.

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