Sutureless aortic valve replacement in combined procedures: Check whether there is room for the new guy before inviting them

John Bozinovski, MD, MSc

From the Division of Cardiac Surgery, University of British Columbia and the Royal Jubilee Hospital, Victoria, British Columbia, Canada.

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Address for reprints: John Bozinovski, MD, MSc, 106-2020 Richmond Rd, Victoria V8R-6R5, British Columbia,

Canada (E-mail: john.bozinovski@ubc.ca).

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It is not uncommon that mitral valve disease, sufficient to warrant consideration of intervention, occurs concomitantly with aortic valve disease.¹ Whether combined valve intervention is undertaken is affected by many factors related to the valve, patient, and operative team. The report from Baran and colleagues² regarding sutureless-aortic valve replacement (SU-AVR) in multiple valve operations touches on these. Our colleagues in Ankara describe SU-AVR in 30 patients undergoing concomitant mitral valve repair (n = 8) or replacement (n = 22). The authors conclude that SU-AVR is safe and reliable in multivalve surgery but requires vigilance when selecting recipients, the type of mitral prosthesis, and the technique for implantation of the aortic and mitral prostheses.

It may be that the shorter ischemic time afforded by SU-AVR does not translate to improved outcomes, although there is an implication that it does, especially in longer, more complex operations.³ The report by Baran and colleagues² does not suppose to answer that question definitively because there was no group for comparison. Indeed, it is unclear from which patient population the 30 patients were drawn. Over the duration of time from which the 30 combined valve procedures occurred, the authors report having performed a total of 149 combined valve procedures. However, the seeming benefit of the SU-AVR may have emboldened them to offer more complex operations to patients who otherwise might have only received isolated conventional AVR or isolated mitral valve replacement (MVR), leaving the secondary valve alone. Thus, the 30 patients were not necessarily drawn from the combined valve procedure cohort of 149 patients.

Among the strengths of the article is the finding that at 1 year paravalvular leak was less than mild, providing some reassurance that paravalvular leak is not a significant concern in combined SU-AVR/mitral valve procedures. As well, the authors have shown that a concomitant mitral valve procedure is not prohibitive to the use of an SU-AVR. However, patient and prosthesis selection is

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Central Message

A preoperative assessment of AMD is warranted before using sutureless aortic valves in combined valve procedures, especially when using bioprosthetic mitral valves.

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important. Of the 22 cases in which MVR was undertaken, 3 patients (14%) required explantation and reimplantation because of initial supra-annular positioning of the SU-AVR. These 3 patients had biologic MVR (21% of the biologic MVR recipients). The 8 patients with a semi-rigid annuloplasty ring and the 8 patients with mechanical MVR had no need for revisions. Although the authors cautioned on the use of SU-AVR in patients in whom the aorto-mitral distance (AMD) was less than 5 mm, they did not comment on the measured AMD in the 3 patients who required SU-AVR revision. Because all patients with an AMD less than 5 mm had mechanical MVR, it seems the supra-annular positioning occurred despite having an AMD greater than 5 mm. This suggests an even greater AMD is needed for biologic MVR with SU-AVR or risk suboptimal deployment 20% of the time. Reimplantation of the valve would certainly expend any saving of ischemic time the SU-AVR intended on providing. They suggest computed tomography to assess AMD and guide decision-making. In summary, make sure there is room for the new guy before inviting them in.

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