

The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.



**REPLY:  
REIMPLANTATION  
SHOULD BE THE GOLD  
STANDARD TO TREAT  
THE REGURGITANT  
BICUSPID AORTIC  
VALVE**



**Reply to the Editor:**

In 1992, Dr John Kirklin asked me if I believed reimplantation of the aortic valve was a reproducible operation and I said yes, but it required a sound knowledge of functional anatomy of the aortic valve and better than average technical skills. Three decades later, I still feel the same. Reimplantation of the aortic valve is an extensive and complex operative procedure, and it may never be part of the surgical armamentarium of all cardiac surgeons.

Jahanyar and colleagues<sup>1</sup> from Brussels probably disagree with my views and believe that reimplantation of the aortic valve is the “gold standard” treatment for incompetent aortic valve regardless of the presence or absence of associated aortic root aneurysm. Their contention is based on an experience with 189 patients with incompetent bicuspid aortic valve (BAV) followed for 5.7 years (interquartile range, 2.7-8.7), with 13 patients lost to follow-up.<sup>2</sup> Freedom from reoperation at 12 years was  $91 \pm 5\%$ , and most reoperations (5 of 8) were due to mixed lesions (stenosis and insufficiency), but no information regarding late valve function is given.

Gebrine El Khoury and Hans-Joachim Schäfers are probably the 2 most experienced surgeons in the world in BAV repair. Their results are exceptionally good, and more importantly they use different techniques to repair the incompetent BAV. Are their results reproducible?

My personal results with reimplantation of the aortic valve in patients with Marfan syndrome have been excellent.<sup>3</sup> The cumulative incidence of reoperation in the aortic

valve was only 5%, and the cumulative incidence of moderate or severe aortic insufficiency 8% at 15 years.<sup>3</sup> I continue to follow these patients, and the rates of reoperation or significant aortic insufficiency remain as low as reported.

Coselli and colleagues<sup>4</sup> recently reported on the outcomes of 319 patients with Marfan syndrome operated on by 49 surgeons as part of a prospective, multicenter, comparative study. Aortic valve-sparing (AVS) was performed in 239 and the Bentall procedure in 77. The authors stated that “propensity score–adjusted competing risk modeling showed associations between AVS and higher cumulative incidences of major adverse valve-related events, valve-related morbidity, combined structural valve deterioration and nonstructural valve dysfunction, and aortic regurgitation.” Based on this study, AVS is a bad operation to treat patients with aortic root aneurysm associated with Marfan syndrome. In other words, my results may not be reproducible, and as the late John Kirklin told me, good operations must be reproducible operations.

I don’t agree with Jahanyar and colleagues<sup>1</sup> that reimplantation of the aortic valve is the “gold standard” treatment for all incompetent BAV. It may be in their hands, but the rest of us should use it only in patients with well-formed cusps without fibrosis or calcification and with main commissures aligned close to 180°.

Tirone E. David, MD

Division of Cardiovascular Surgery of the Peter Munk  
Cardiac Centre at Toronto General Hospital and University  
of Toronto  
Toronto, Ontario, Canada

**References**

1. Jahanyar J, El Khoury G, de Kerchove L. Reimplantation should be the gold standard to treat the regurgitant bicuspid aortic valve. *J Thorac Cardiovasc Surg Tech*. 2022;13:42-3.
2. de Meester C, Vanovershelde JL, Jahanyar J, Tamer S, Mastrobuoni S, Van Dyck M, et al. Long-term durability of bicuspid aortic valve repair: a comparison of 2 annuloplasty techniques. *Eur J Cardiothorac Surg*. 2021;60:286-94.
3. David TE, David CM, Manlhiot C, Colman J, Crean AM, Bradley T. Outcomes of aortic valve-sparing operations in Marfan syndrome. *J Am Coll Cardiol*. 2015;66:1445-53.
4. Coselli JS, Volguina IV, LeMaire SA, Connolly HM, Sundt TM, Milewicz DM, et al. Midterm outcomes of aortic root surgery in patients with Marfan syndrome: a prospective, multicenter, comparative study. *J Thorac Cardiovasc Surg*. September 4, 2021 [Epub ahead of print].

<https://doi.org/10.1016/j.xjtc.2022.02.043>