

The authors reported no conflicts of interest.

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## SUTURELESS BIOPROSTHESES FOR AORTIC VALVE REOPERATIONS: HOW



### TO GET OUT OF TROUBLES

#### To the Editor:

Sutureless bioprostheses have the well known advantage of a rapid implantation with significant reduction of the ischemic times during surgical aortic valve replacement (AVR).<sup>1</sup> This is particular beneficial in high-risk, elderly patients in whom surgical AVR might be indicated.

We were particularly interested in the article by Dhanekula and colleagues,<sup>2</sup> published in a recent issue of *The Journal of Thoracic and Cardiovascular Surgery Techniques*. The authors present their experience with reoperations for degenerated aortic bioprostheses in 22 patients in whom a Perceval stentless bioprosthesis (PSB; LivaNova) was used; 4 of them (18%) had a previous Bentall procedure. One of the main messages of their report is that PSB might provide definite advantages over traditional redo procedures because their peculiar design allows maximization of the effective orifice area.<sup>2</sup> Redo procedures to replace a malfunctioning prosthesis might be challenging and valve-in-valve AVR has partly solved this problem in cases of bioprostheses.<sup>3</sup>

Sutureless bioprostheses are extremely useful when used in complex reoperations such as those to replace an aortic valve inside a biological conduit. This issue has been recognized by Dhanekula and colleagues<sup>2</sup> but was more specifically addressed in our recent review of the literature, which has unfortunately been overlooked.<sup>4</sup> We have showed that sutureless and rapid-deployment bioprostheses were used in a variety of challenging situations, significantly simplifying such procedures. We identified a total of 25 patients in whom such prostheses were used in complex redo procedures: 17 of them had a stentless bioprosthesis (as AVR and root replacement in 11), 6 patients a homograft (4 AVR and 2 aortic root replacements), and

2 a valve-sparing procedure. All patients survived reoperation and were reported alive 3 months to 4 years postoperatively. These findings are particularly interesting when dealing with homograft root failure, which is frequently totally calcified rendering a redo modified Bentall procedure hazardous and technically highly demanding whereas in such cases the PSB has proved to be extremely effective.<sup>5</sup>

We agree with Dhanekula and colleagues<sup>2</sup> on the importance of the PSB in providing larger effective orifice areas compared with standard stented bioprostheses so as to minimize the occurrence of patient–prosthesis mismatch. However, in the specific setting we reviewed,<sup>4</sup> we also believe that in elderly, less active patients the problem of patient–prosthesis mismatch might not be so crucial compared with providing a rapid, lower-risk reoperation and a successful outcome.

There is enough current evidence that the PSB is of great help in extremely challenging situations, such as complex reoperations, particularly when undertaken for stentless valves or homograft root degeneration. In these settings, the PSB allows for a limited surgical approach, avoiding complex aortic root rereplacement, significantly reducing the risk of reoperation and getting most surgeons easily out of troubles.

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<https://doi.org/10.1016/j.xjtc.2022.08.001>