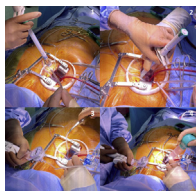


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### SUTURELESS AORTIC VALVES: THE ACE UP THE SLEEVE OF THE CARDIAC SURGEON, DO WE KNOW WHEN TO USE IT?

To the Editor:

With the rapid development of transcatheter treatment methods, cardiothoracic surgery has been urged to refine conventional operative approaches, thus leading toward minimal invasiveness and a reduction in intraprocedural complications. Sutureless aortic valve replacement (SU-AVR) was initially introduced as an alternative to conventional surgical aortic valve replacement (SAVR) to facilitate a minimally invasive approach and shorter aortic cross-clamp time (CCT), an important independent predictor of mortality following cardiothoracic procedures. In their current study, White and colleagues<sup>1</sup> analyzed and compared the outcomes after conventional SAVR and SU-AVR. We congratulate the authors on their successful results and would like to comment on some essential findings provided by this study.

As previously mentioned, the main aim of sutureless prostheses was to enable a minimally invasive approach, which is lacking in the study's cohort, as the patients seem to have entirely undergone a median sternotomy. The importance of completing the learning curve in SU-AVR has already been described in the Sutureless and Rapid-Deployment Aortic Valve Replacement International Registry in 3343 patients by Di Eusanio and colleagues,<sup>2</sup> where the median aortic CCT was significantly lower than in the cohort of White and colleagues. Similarly, in our experience a significant decrease in CCT and cardiopulmonary bypass time in patients undergoing an isolated SU-AVR has been reported.<sup>3</sup>

It comes as no surprise that White and colleagues reported no significant difference in postoperative mortality following SAVR and SU-AVR after a median follow-up

period of less than 3 years. Despite the fact that we are unaware of the risk profile of the patients, the reported mortality agrees with the current literature on patients with low- and mid-risk profiles and is not expected to differ from the mortality after conventional SAVR as reported in the Sutureless and Rapid-Deployment Aortic Valve Replacement International Registry. However, other surgical groups do show a significantly shorter intensive care unit stay duration when compared with the report of White and colleagues.<sup>2</sup> Szeceł and Meuris<sup>4</sup> illustrated favorable outcomes in a long-term follow-up of 12 years after SU-AVR in the high-volume SU-AVR center of Leuven, Belgium.

As the authors correctly state, in the early implementation phases of sutureless aortic valve prostheses, a greater rate of permanent pacemaker implantation was attributed to these valves. Nevertheless, Di Eusanio and colleagues<sup>2</sup> share a similar experience to our group on this matter, reporting that the risk of permanent pacemaker implantation significantly decreases after completing the learning curve (5.4%) and is then comparable with the pacemaker implantation rates after conventional SAVR and transcatheter aortic valve implantation. Following our modification of the implantation technique (Snugger method, Figure 1) and avoidance of oversizing, only 3.1% of our patients had to undergo a permanent pacemaker implantation.<sup>3</sup> Even in high-risk patients undergoing a SU-AVR combined with mitral valve surgery, who inherently are carrying a significantly greater risk of developing an atrioventricular block, only 5% of our patients needed a permanent pacemaker.<sup>5</sup>

In conclusion, we want to emphasize the importance of the implementation of sutureless aortic valve prostheses in minimally invasive and high-risk cardiothoracic procedures as a feasible tool with excellent hemodynamics enabling the provision of high-quality medical care.

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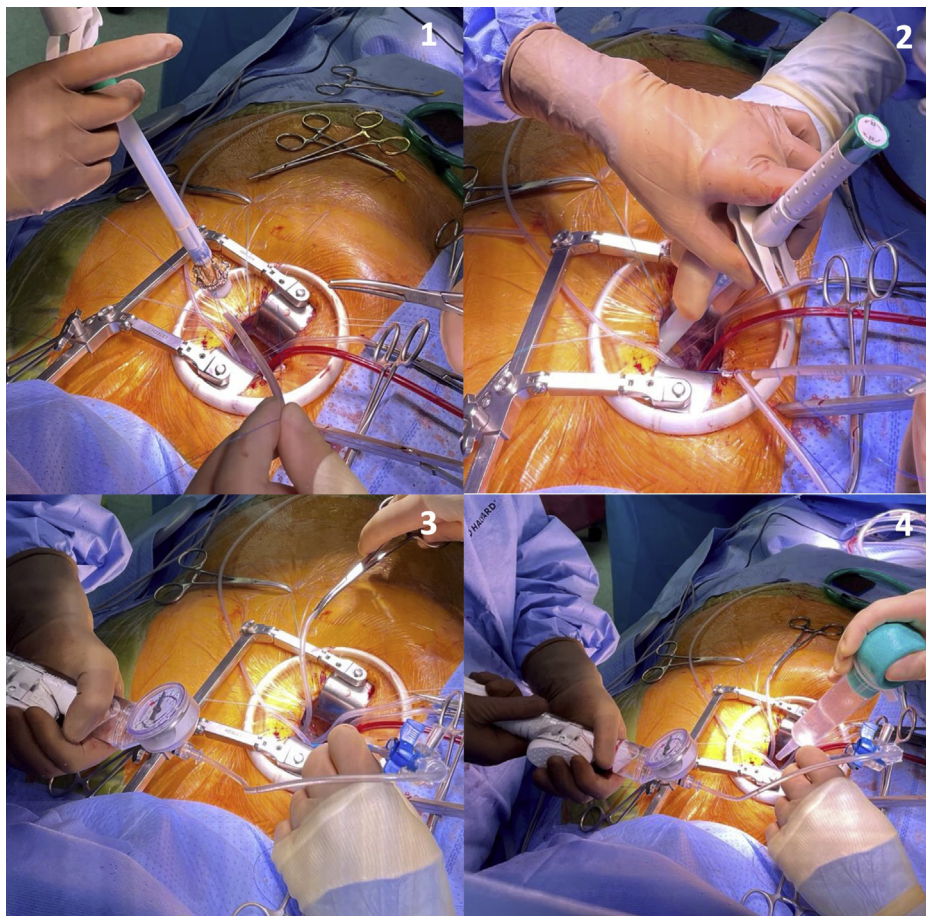


FIGURE 1. SU-AVR via right anterolateral thoracotomy with a Snugger method.

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