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REPLY FROM AUTHORS: SUTURELESS VALVES—EXPANDING THE SURGEON'S TOOLBOX

Reply to the Editor:

Currently, most patient with degenerated bioprosthetic valves are referred for valve-in-valve transcatheter aortic valve replacement (ViV TAVR). Although feasible for most, patients with small prosthetic valves (<23 mm internal diameter) are more prone to have higher residual gradients, patient–prosthesis mismatch (25%), and higher periprocedural mortality (10%).[1] In our article on sutureless valve use in reoperative AVRs, we present an alternative for patients deemed as inappropriate candidates for ViV TAVR by a heart team.[2] Our data revealed a significant improvement in hemodynamic parameters, minimal postoperative morbidity, and an objectively larger internal diameter in nearly all patients compared with if ViV TAVR was performed in their existing bioprosthesis. However, we recognize the concerns brought up by Grimm and Sultan[3] in their commentary, and we agree that currently this strategy is of most utility in specific populations.

Certainly, we hold reservation with sutureless valve use in patients younger than age 60 years, due to durability concerns with bioprostheses compared with mechanical valves in this population, yet-to-be-defined long-term outcomes of sutureless valves (although current 10-year data appear promising), and growing enthusiasm for alternative valve operations in this population (such as Ross, valve repair, and root enlargement procedures).[4-6] We also recognize that root replacement and annular enlargement provide a well-established strategy managing for small annuli, while also creating a scaffold for future ViV. However, there are still specific populations that can benefit from sutureless valve placement. Root replacement, annular enlargement, concomitant procedures, re-do traditional surgical AVR, and surgery after failed TAVR in older individuals with small, calcified annuli can be challenging and risky, especially in centers with limited experience in such procedures. Beyond limiting crossclamp and bypass times, this valve class also offers excellent gradients across valve sizes.[6] Although the data on ViV TAVR into sutureless valves is limited, early reports indicate favorable hemodynamic parameters and no episodes of coronary obstruction, offering a significant advantage over smaller stented valves in patients with small sinuses, low native coronary artery heights, and short predicted valve-to-coronary distances.[7]

Travel to a trout stream with an avid fly angler, and you will likely see them cycle through box after box filled with various flies to accommodate differing conditions. A carpenter would never show up to a job site with a single hammer. Contemporary aortic valve surgeons should be no different. Management of aortic valve disease is increasingly nuanced, and is no longer limited to traditional surgical AVR. Primary TAVR, ViV TAVR, and TAVR in TAVR continue to increase in prevalence with improving outcomes and evolving technologies, whereas alternative operations—such as the Ross procedure and valve-sparing techniques—continue to grow in popularity. These are all essential components within the heart team construct and critical elements to the modern aortic valve surgeon's toolbox, and we certainly believe sutureless valves merit space here. Our experience with these valves provides another solution that is well suited for certain cohorts and should be considered by heart valve teams, along with other conventional therapies, in patients with primary aortic stenosis as well as those with prosthetic valve dysfunction.

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References

1. Dvir D, Webb JG, Bleiziffer S, Pasic M, Waksman R, Kodali S, et al. Transcatheter aortic valve implantation in failed bioprosthetic surgical valves. *JAMA*. 2014;312:162-70. https://doi.org/10.1001/jama.2014.7246
2. Dhanekula AS, Nishath T, Aldea GS, Burke CR. Use of a sutureless aortic valve in reoperative aortic valve replacement. *J Thorac Cardiovasc Surg Tech*. 2022;13:31-9. https://doi.org/10.1016/j.xjtc.2022.02.025
3. Grimm JC, Sultan I. Commentary: sutureless valves or futureless valves? *J Thorac Cardiovasc Surg Tech*. 2022;13:40-1. https://doi.org/10.1016/j.xjtc.2022.04.004
4. Goldstone AB, Chiu P, Baiocchi M, Lingala B, Patrick WL, Fischbein MP, et al. Mechanical or biologic prostheses for aortic-valve and mitral-valve replacement. *N Engl J Med*. 2017;377:1847-57. https://doi.org/10.1056/NEJMoa1613792
5. El-Hamamsy I, Toyoda N, Itagaki S, Stelzer P, Varghese R, Williams EE, et al. Propensity-matched comparison of the ross procedure and prosthetic aortic valve replacement in adults. *J Am Coll Cardiol*. 2022;79:805-15. https://doi.org/10.1016/j.jacc.2021.11.057

6. Szecel D, Meuris B. Long-term outcome with sutureless valves: 12 years of Perceval experience. *Ann Cardiothorac Surg*. 2020;9:322-4. https://doi.org/10.21037/acs.2020.04.03
7. Landes U, Dvir D, Schoels W, Tron C, Ensminger S, Simonato M, et al. Transcatheter aortic valve-in-valve implantation in degenerative rapid deployment bioprostheses. *EuroIntervention*. 2019;15:37-43. https://doi.org/10.4244/EIJ-D-18-00752

https://doi.org/10.1016/j.xjtc.2022.09.003