



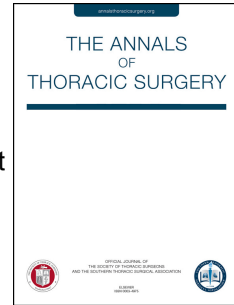
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Further Insights into the New Field of TAVR Explant Surgery: Debunking One Myth at a Time

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Invited Commentary:

It has become abundantly clear that transcatheter valve interventions have reorganized the entire field of heart valve disease. With the evolution of indications from inoperable to now low-risk patients, TAVR volumes have been skyrocketing and have now surpassed the number of surgical aortic valve replacements [1]. However, as with any drastic technological change, it will take some time to gather and analyze data in order to fully appreciate the ramifications (both positive and negative) of this new technology. A recent FDA warning letter concerning possible early structural valve deterioration of the Trifecta valve has given a reminder to the global heart valve community that long-term data and scrutiny are necessary before making conclusions regarding any prosthetic heart valve [2].

What can be reasonably assumed, however, is that with the increasing volume of TAVR implants will come a rise in the number of cases that require TAVR explant for a number of indications. Certain assumptions have been made regarding this new field of TAVR explant surgery based on early limited reports and a large amount of hypothesizing. These included the thoughts that 1) TAVR patients might be more likely to have subsequent prosthetic valve endocarditis and 2) that subsequent surgery to remove a TAVR valve would be more likely to require a root replacement, thereby entailing higher operative risk.

The analysis by Fukuhara and colleagues from Michigan in this issue of *The Annals of Thoracic Surgery* provides insights into TAVR explant for endocarditis [3]. The authors evaluated

6257 patients with prosthetic valve endocarditis after TAVR (n=374) or SAVR (n=5883) from the STS database.

Surprisingly, it was noted that aortic root replacement was required less frequently in the TAVR group (24.9% of cases) compared to the SAVR group (34.8% of cases). Patients requiring surgery for TAVR endocarditis also had shorter CPB and aortic cross-clamp times which the authors posit was associated with the redo sternotomy needed in the SAVR group. Perhaps the most encouraging result was that multivariable logistic regression revealed that prior TAVR was not associated with mortality. All of these data debunk previously held assumptions that contributed to the low rate of operative intervention for TAVR endocarditis which the authors discuss in detail. The present study had neither the data nor the intention to reveal the true incidence of endocarditis after TAVR. However, it is clear that the authors have been successful in providing data to encourage an aggressive and dynamic stance for all of us as we enter the new, and expanding, field of TAVR explant surgery.

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References:

- [1] Bowdish ME, D'Agostino RS, Thourani VH, et al. STS Adult Cardiac Surgery Database: 2021 Update on Outcomes, Quality, and Research. *Ann Thorac Surg*. 2021 Jun;111(6):1770-1780. doi: 10.1016/j.athoracsur.2021.03.043. Epub 2021 Mar 29.
- [2] Abbott Triecta Valves: Potential Risk of Early Structural Valve Deterioration- Letter to Health Care Providers. <https://www.fda.gov/medical-devices/letters-health-care-providers/abbott-triecta-valves-potential-risk-early-structural-valve-deterioration-letter-health-care> . February 27,2023. Accessed March 11, 2023.
- [3] Fukuhara S, Wu X, Hawkins R, et al. Prosthetic Valve Endocarditis after Transcatheter and Surgical Aortic Valve Replacement. *Ann Thorac Surg* 2023; in press.