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Commentary: Reason for optimism—or the start of a long, dark winter?

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With the continued growth of transcatheter aortic valve replacement (TAVR) procedure volume, so too there is an increasing focus on the still-uncertain and evolving treatment algorithm for severe aortic stenosis, especially in younger, lower-risk patients likely to require multiple interventions and devices over their lifetime.^{1,2} For better or worse, much of the decision making is currently driven by patient choice. Recent reports describing the technical challenges and generally suboptimal outcomes of explanting failed TAVR devices from either native or surgical valves have served to validate growing concerns.³⁻⁵

In this month's *Journal*, Fukuhara and colleagues⁶ comprehensively describe their experience with 28 patients (4 referred from outside institutions) who underwent either subsequent valve reintervention following primary TAVR (18 patients) or valve-in-valve TAVR (10 patients). Owing mostly to unfavorable anatomy or the need for concomitant procedures, repeat TAVR was undertaken in only 8 of the 28 patients, belying the idea of patients being advised they can undergo repeat TAVR-in-TAVR with any degree of certainty. Importantly, TAVR in previous surgical aortic valve replacement, albeit with small numbers, was 3 times more likely to fail, and mortality among the TAVR explantation group was 15% (3 of 20). The authors appropriately advise that "careful assessment of aortic root anatomy and the feasibility of a repeat TAVR procedure should be part of the initial TAVR workup for young patients choosing to

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CENTRAL MESSAGE

As data demonstrating the uncertainty of repeat transcatheter aortic valve replacement (TAVR) accumulate, so too does evidence that the morbidity and mortality associated with TAVR valve explantation is not insignificant.

undergo a TAVR procedure" and further suggest at least considering a mechanical prosthesis.

That said, it is unclear if these 28 out of more than 1400 TAVR cases represent a relatively large number or a small number, and thus the extent to which this report can or should inform the algorithm for initial and subsequent valve choice. Center-specific referral bias will almost certainly impact the number of patients presenting for additional procedures, with the true incidence therefore unknown. Also unknown is how many patients who underwent TAVR explantation because they needed concomitant procedures would have needed those same procedures had they initially undergone surgical aortic valve replacement. Or how many, rightly or wrongly, might have, if treated elsewhere, undergone repeat TAVR along with other catheter based-interventions, such as coronary stenting, transcatheter mitral valve repair, or replacement. Similarly, the use of leaflet splitting techniques (BASILICA) might have allowed repeat TAVR in at least several of those with presumed high risk of coronary obstruction.⁷

As the authors acknowledge, the extensive use of self-expanding TAVR devices and stentless surgical valves somewhat limits the generalizability of their experience. Nevertheless, the technical challenges and the morbidity and mortality associated with surgical explant demonstrated by this very experienced group should serve as a warning to

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pause and consider these decisions carefully at all stages. Whether the results of valve explantation will improve with more experience in a presumably younger and healthier lower-risk cohort in the future remains to be determined. Should we interpret this report with optimism, or does it portend the coming of a long, dark winter? I suspect we will know soon enough, but clearly the early results are not that encouraging.

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