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Commentary: What matters is what you do, not what you use

Anthony L. Estrera, MD

First described in the 1970s, the basic tenets for the management of infective endocarditis (IE) include correction of the hemodynamic abnormality, restoration of ventricular/arterial continuity, appropriate antibiotic treatment, and thorough debridement of all infected tissue.¹ Although these goals remain the pillars of IE management, the Society of Thoracic Surgeons database indicates that early mortality persist at 10%—with more than 20% mortality when prosthetic valve endocarditis occurs.² What contributes to this mortality is more related to patient comorbidities and the infectious pathology than the type of prosthesis used. However, questions endure.

In fact, recent expert consensus guidelines from the American Association for Thoracic Surgery states that “choice of valve (mechanical or tissue prosthesis) should be based on normal criteria” and that with more root destruction requiring root reconstruction, “using an allograft may be beneficial, but a prosthetic biroot or prosthetic valved conduit ... are acceptable alternatives, with choice guided by surgeon training and experience.”³

Clemence and colleagues⁴ report a University of Michigan team’s experience with aortic valve IE examining the use of stented versus stentless prosthesis for the replacement from 1998 to 2017. From a total of 299 patients, 265 patients over a 20-year period were divided into 97 stented patients (37%) and 168 (63%) stentless patients. In all, 34 patients who had undergone homograft replacement were excluded. The authors demonstrated commendable results, with an early mortality of 4% for the stented

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CENTRAL MESSAGE

The authors conclude that to reduce the risk of reinfection, extensive debridement of all infected tissue was most important. Thus, it is not what you use but what you do that matters.

group and 6% for the stentless group. Cumulative incidence of reoperation at 10 years was just 12% in the stented group and 3.4% in the stentless group—with more recurrent endocarditis observed in the stented group (<1 year) but more structural valve degeneration in the stentless group (>8 years).

This current study comes on the heels of recently published work in which this University of Michigan group analyzed a larger cohort of patients with IE (1996 to 2017) to determine whether IE with associated aortic root abscess influenced outcomes.⁵ The study examined 336 patients divided into 179 root abscess patients compared with 157 no-root abscess patients. They found no significant difference in early mortality (8.4% vs 3.8%; $P = .11$, respectively). In examining both reports, a few observations should be highlighted:

1. The University of Michigan group appears to prefer the stentless prosthesis for IE—especially when more intensive pathology was encountered. They cite lower cost (than homograft), off-the-shelf availability, familiarity with full root and modified inclusion techniques, better hemodynamic parameters in the small annulus, and less fabric material (than with a stented valve), potentially decreasing the susceptibility to recurrent infection (not substantiated).
2. Even in this younger cohort (aged 50 years), very few mechanical valves were used (<5%).

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3. In patients without aortic root abscess, aortic root procedures were performed 46% of the time—speaking to the surgeons' comfort level with aortic root procedures.
4. In the current report, the use of homograft was excluded. The long-term outcomes would have been interesting to see.
5. Presence of root abscess or type of prosthesis made no difference in early or late outcomes after surgical management of IE.

The authors are to be applauded for their results in a complex patient population. It should also be recognized that the commendable results were likely due to the most important variables never included in statistical analysis; that is, surgeon skill and experience. In the end, the authors appropriately conclude that to reduce the risk of reinfection, “extensive and thorough debridement of all infected tissue”—not the type of prosthesis—was the most important

factor. Thus, it is not what you use but what you do that matters.

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Commentary: Regression or progression: Hominum, bovinum, porcinum?

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Clemence and colleagues¹ are to be congratulated for their report in this month's *Journal* of the University of Michigan's experience with aortic valve endocarditis using either a stented or a stentless (Freestyle; Medtronic, Inc, Minneapolis, Minn) prosthesis. This report mimics another recent study in which they compared those with and without a

Aortic annular abscess communicating into the right atrium—prosthetic valve removed.

CENTRAL MESSAGE

Stentless valves, stented valves, and homografts all have a relevant role in the surgical management of endocarditis depending on largely on the degree of tissue invasion requiring reconstruction.

root abscess, treated predominantly with either a stented or stentless bioprosthesis.² These reports are similar in that they cover the same time period and included largely the same patients. Notably, their primary conclusions were also essentially identical: emphasizing the value of

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