Commentary: Infective endocarditis: Finding the right time for the right side

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Pavan Atluri, MD (left), and Jason J. Han, MD (right).

Central Message

Right-sided infective endocarditis poses a multifaceted challenge both clinically and in research. This article thoroughly characterizes its heterogeneous patient population.

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Surgical management of right-sided infective endocarditis is a multifaceted challenge clinically and in research. It is relatively uncommon, comprising only 5% to 10% of all infective endocarditis cases, of which only 15% to 20% of these require surgery.^{1,2} The disease profile is also heterogeneous. The various permutations of etiologies, causative organisms and affected structures render a standardized approach to its treatment elusive. In this context, the contribution by Witten and colleagues³ in this issue of the *Journal* is appropriate and timely. As they note, most studies to date have only focused on a single aspect of the issue,⁴ most notably its relation to intravenous drug use (IVDU).⁵ This has been appropriate, given the complexity and growing scale of the issue. Posing both a medical and a social challenge, the use of heroin in the United States nearly doubled between 2006 and 2013,⁶ with a commensurate spike in the incidence of right-sided infective endocarditis.

One the strengths of this data set is its ability to present a balanced comparison of multiple predisposing conditions, such as cardiac implantable devices and chronic vascular access, in addition to IVDU. These cohort stratifications may form a precedent in informing similar efforts at other hospitals better to understand and thereby treat this patient population. In many ways, the article confirms what we already know, such as the predominance of *Staphylococcus aureus* among patients with a history of IVDU,⁷ and the survival benefit observed among patients who receive valve repair or reconstruction rather than replacement.^{8,9} Yet it also sheds insight on relatively nebulous areas, such as surgical indications for right-sided infective endocarditis, which have not been as clearly delineated as those for left-sided infective endocarditis. Not surprisingly, risk of septic embolism significantly added urgency to operating on patients with a history of IVDU to prevent pulmonary complications. Chronic vascular access patients had the lowest early and late-term survivals, likely because of worse health at baseline. Recurrence rate was minimal for patients

with non-IVDU indications. Although the heterogeneity of the population added a challenge to its extrapolation, Witten and colleagues³ have conducted extensive, supplemental statistical analysis to buttress these findings. Inevitably, there is an inherent selection bias in retrospectively defining a cohort that has been referred specifically to receive operations at a quaternary center; its findings thus are limited to only the surgically managed subset of patients.

Overall, Witten and colleagues³ are to be congratulated for sharing their impressive institutional experience and detailed statistical analysis. Moreover, their strong emphasis on a multidisciplinary team approach, which “reflects a culture existing ahead of guidelines,” is undeniably a factor behind their excellent outcomes and gives us a reason to be optimistic that this challenging medical, surgical, and social issue will continue to be better managed in the future.

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