Another case of underprovision of mitral valve repair surgery: Lessons from the Veterans Affairs health system

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The article in this issue of the *Journal* by Bakaeen and colleagues¹ reports trends in the practice and outcomes of patients who underwent mitral valve surgery in the Veterans Affairs (VA) health system of the United States. Their observations confirm that there remains great disparity in care of patients with mitral valve disease and give indications that mitral valve surgery in the VA system may not be achieving key guideline-directed goals. For example, half the patients were in New York Heart Association functional class III or IV, and 15% had severe left ventricular dysfunction at time of surgery. These findings are contrary to current guidelines, which recommend earlier surgical intervention. The most disquieting observation, however, was a repair rate of 58% in patients with presumed degenerative disease. Although the repair rate improved with time, it was only 65% in 2013 (the final year of study), a time at which expert opinion and contemporary data suggest that repair rates should be in excess of 95%.^{2,3} Indeed several authors of the report of Bakaeen and colleagues¹ are expert surgeons who have reported very high repair rates in their academic centers, which their groups were not able to replicate in affiliated VA hospitals. This dichotomy highlights the difference between real-world practice and reference center practice, and it suggests that mitral valve surgical expertise is not necessarily transferrable from a high-volume hospital to an affiliated low-volume hospital, even if an expert mitral surgeon is overseeing both systems. We have recently demonstrated the converse; low-volume surgeons in high-volume reference centers have higher valve repair rates than do other low-volume surgeons,⁴ suggesting an important center effect and also a probable Hawthorne effect, whereby low-volume surgeons benefit from being in the immediate vicinity of high-volume surgeons. Both experiences support the critical importance of consolidating center volume and expertise.

Although we have some concerns regarding the robustness of the data (it seems implausible, for

example, that a group of surgeons with a repair rate of 58% for degenerative disease would have a repair rate of 61% for rheumatic disease), the central question remains that of whether the veterans are best served by undergoing their mitral interventions within the current system. All the VA hospitals in this study were low-volume mitral surgery centers (median of 7 cases per year, maximum of 29 cases per year), and the repair rate varied greatly. The issue arises of whether mitral surgery should be treated like transplantation and some other specialized services within the VA system, with patients being operated on either only in select regional VA hospitals with high repair rates or in the neighboring affiliated academic centers.

The VA system is not itself unique, and such disparities in provision of mitral valve surgery are well described in other health systems.⁵ The inconvenient truth remains that patients who undergo mitral valve surgery in low-volume mitral valve surgery centers (which currently includes all VA hospitals) are less likely to receive guideline-directed therapy (early surgery and durable repair of repairable valves) than are patients who go to high-volume repair centers. A solution often proposed is to train surgeons in low-volume centers to develop expertise in mitral valve repair. The report by Bakaeen and colleagues¹ challenges such an approach, however, because even with well-trained surgical teams, the repair rate at the

DEGENERATIVE MITRAL VALVE SURGERY: KEY PERFORMANCE GOALS

Low frequency of patients with advanced symptoms (NYHA III, IV)
Low frequency of patients with left ventricular dysfunction
Very low valve replacement rate
Very low operative mortality
Low incidence of residual mitral regurgitation

Performance goals in degenerative mitral valve surgery.

Central Message

The time has come to define a specialty of mitral valve repair. Key to maximizing valve repair in degenerative disease is centralization of services by development of reference mitral valve centers.

See Article page 105.

low-volume VA hospitals did not mirror that typically seen in affiliated academic hospitals. There is a center effect distinct from the surgeon effect. We agree with Gillinov and colleagues⁶ that the time has come to define a specialty of mitral valve repair and that the “who and where,” in terms of surgeon and hospital performing the repair, must become a critical part of the decision-making algorithm. The solution to the lottery of mitral valve surgery,⁵ and the key to maximizing application of valve repair in degenerative disease, is the centralization of services and development of reference mitral valve centers. Otherwise, if the current systems remain, these periodic reports of under-provision and variation in mitral valve repair surgery will continue to be prevalent in our literature.

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