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Commentary: Be Samwise

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Repair of degenerative mitral valve regurgitation offers durable and predictable patient outcomes and has become the gold standard of surgical therapy.¹ As the surgical tool box for repairing the degenerative valve is extensive,² the alterations in the 3-dimensional relationships of valvular and subvalvular structures become more complex and less predictable. Systolic anterior motion (SAM) of the mitral valve has been described postrepair of degenerative valves and can lead to left ventricular outflow tract (LVOT) obstruction and mitral regurgitation (MR).³ In the current issue of the *Journal*, Ashikhmina and colleagues⁴ present a large series of 761 degenerative mitral valve repairs, with 98 (13%) patients developing intraoperative SAM after weaning from cardiopulmonary bypass. Only 7 patients needed surgical correction of SAM, and with this predominantly conservative approach, the authors were able to achieve good mid-term outcomes in follow-up.

Conservative approach to treating SAM has been advocated by others. De Bonis and colleagues⁵ reported a need for second crossclamp in 22 of 2318 (0.94%) degenerative repairs due to SAM, which is strikingly similar to the 7 of 761 (0.92%) reported in the current study. El-Eshmawi and colleagues⁶ reported a lower rate of 5 of 1917 (0.26%), but the inclusion for SAM reintervention was based on residual MR, not LVOT obstruction. Although the rate of SAM was quite high in the study of Ashikhmina and colleagues, at 13%, this may be due to a too broad a definition that included any protrusion of the anterior mitral leaflet or chordal apparatus into the LVOT without necessarily causing concomitant obstruction. In a previous report from the Mayo clinic,⁷ the incidence of SAM was 11.1% in 1589 degenerative patients, but only 20 patients had

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CENTRAL MESSAGE

Intraoperative systolic anterior motion of the mitral valve after degenerative repair is usually a benign phenomenon that rarely needs surgical correction.

concomitant LVOT obstruction. The current authors used a 63-mm posterior band to reinforce the mitral repair, which corresponds to a 28-mm size standard prosthesis, yet most large series of degenerative repairs report using more sizable devices.⁸ Using a smaller-sized annuloplasty may predispose the leaflet coaptation point being displaced anteriorly, although this risk may be lower with posterior bands.⁹ Perhaps most reassuring from the authors' data is the fate of the 28 patients who had persistent SAM on discharge echocardiography, as their rate of mitral reintervention was not different from patients who never developed SAM. However, these patients with persistent SAM had no significant LVOT obstruction, with a mean gradient of only 6.8 mm Hg, bringing into question the clinical significance of these echocardiographic findings. Small chamber size and reduced ratio of anterior to posterior leaflet height were identified by the authors as potential predictors of SAM but not specific to those patients who required surgical correction. As such, the authors did not recommend any prophylactic measures based on preoperative characteristics to avoid intraoperative SAM. Although surgical prophylaxis is wisely discouraged, anesthetic preventive management should be fostered, as judicious use of fluids, avoidance of inotropes, and chronotropic control in great majority of cases will abolish SAM before it arises.

The current study provides further evidence that intraoperative SAM after degenerative repair is usually a benign phenomenon that in majority of cases resolves with conservative measures. Rare surgical intervention may be needed, but restraint should otherwise be exercised, especially when

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neither LVOT obstruction nor significant MR are present. Stay cool, be wise.

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