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## Commentary: Mitral valve re-repair: Rejection of imperfection

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In their retrospective review, El-Ashmawi and colleagues<sup>1</sup> corroborate several previous studies that suggest that a second and perhaps even a third attempt at correcting less than moderate residual mitral regurgitation (MR) identified by intraoperative transesophageal echocardiography (TEE) after initial repair is generally safe when tempered with clinical judgment.<sup>2-4</sup> This persistence toward perfection to eliminate even mild mitral insufficiency appears further justified by evidence that achieving trace to no residual MR benefits long- and perhaps even short-term clinical outcomes.<sup>5,6</sup>

This study offers additional insight. First, it demonstrates that excellent mid-term outcomes can be achieved among patients requiring re-repair, with freedom from moderate or greater MR at 5 years. Second, a similar study by De Bonis and colleagues<sup>2</sup> reported residual prolapse comprising almost one half of cases requiring re-repair, with nearly all remedied with an edge-to-edge “bail-out” technique. In sharp contrast, El-Ashmawi and colleagues found that residual MR was primarily suture-line related and employed more variegated re-repair techniques, using the edge-to-edge technique in only 1 case. These differences illustrate the importance of a wide armamentarium of repair

### CENTRAL MESSAGE

Striving for structurally sound mitral repairs, including re-repair, should be standard practice to maintain the “gold standard” of surgical therapy against which new devices must be compared.

techniques in facilitating effective and durable re-repair. Third, compared with previous investigations, this study demonstrated safe re-repair among patients requiring much longer initial aortic crossclamp times and cardiopulmonary bypass times (median 106 and 208.5 minutes, respectively) largely due to concomitant procedures (85%) that now frequently accompany mitral repair (eg, tricuspid annuloplasty, radiofrequency ablation). It also appears that comparatively more challenging mitral repairs were undertaken in this cohort, with 55% of the repairs scored as “complex” with only 28% scored as “simple.”

Promoting low thresholds for re-repair for even mild residual MR provokes consideration of re-repair for other “imperfections” noted on intraoperative TEE in the absence of residual MR that may predispose to late recurrent MR or other adverse hemodynamic consequence. For instance, Uchimuro and colleagues<sup>7</sup> noted a trend toward

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a lower incidence of recurrent MR at 1 year with leaflet coaptation lengths of  $\geq 8$  mm among patients undergoing posterior leaflet repairs. Consequently, should a second crossclamp and re-repair be entertained in cases when the width of leaflet coaptation is significantly less than 1 cm, mild residual prolapse, or chordal systolic anterior motion is noted, even if only trace to no residual MR is noted on TEE? One could argue that re-repair in such instances may be warranted, invoking the optimization of mid- to long-term outcomes as justification.

In conclusion, striving for and accepting nothing less than perfect structural results for surgical mitral repair should no longer be perceived as risky, braggadocious, or even as not-so-subtle justification for directing referrals to a select few centers. It not only serves the interest of achieving the best clinical outcomes but serves as a staunch reality check and gold standard against which current and nascent catheter-based mitral repair devices should rightfully be evaluated. Compared with its aortic valvular counterpart, the complex structural and dynamic complexities of the mitral valve apparatus would seem to require much

greater degrees of technologic sophistication for nonsurgical approaches to achieve this standard.

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## Commentary: Residual mitral regurgitation: The fork in the road

Amit Pawale, MD, and Patrick M. McCarthy, MD

After repair of degenerative mitral regurgitation (DMR), it is not uncommon to reach a fork in the road. You've done a beautiful repair, confirmed it by testing the valve, but after weaning from cardiopulmonary bypass, there is residual



Dr Patrick M. McCarthy, MD, and Dr Amit Pawale, MD

### CENTRAL MESSAGE

Data-driven strategies for residual intraoperative mitral regurgitation are essential to determine when to employ a second crossclamp and can result in excellent and durable repair results.

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