Cautious optimism and tempered enthusiasm for a more thorough, tailored intervention in ischemic moderate mitral regurgitation

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Central Message

There is compelling reason to suspect a more complete mitral intervention is warranted in patients with moderate mitral regurgitation undergoing CABG.

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Moderate mitral regurgitation (MR) in the setting of ischemic heart disease is not uncommon, particularly after a myocardial infarction (MI).¹ It is more common after inferior MI when compared with anterior MI.² When confronted with moderate MR, the decision to add a mitral valve intervention to a coronary artery bypass grafting (CABG) operation can be difficult. Many factors influence the choice of surgical strategy preferred by the patient and eventually pursued by the surgeon. Adding a mitral intervention prolongs surgical time and cardiac ischemic time³⁻⁵ and, on occasion, requires a skill set that may not be mastered by the surgeon. The added mitral intervention may,^{3,4} or may not,⁵ increase complications. This risk is tempered by the benefit conferred by adding the mitral intervention, but this is equivocal. Although 3 randomized trials have shown no survival benefit with adding a restrictive mitral annuloplasty (RMA),⁴⁻⁶ ventricular remodeling and symptomatic improvements occurred in 2 of the studies^{5,6} but not in the larger Cardiothoracic Surgical Trials Network study.⁴ So how do we proceed? Michler⁷ suggests assessing several qualitative and quantitative characteristics to guide the decision whether to repair moderate MR at the time of CABG.

Michler⁷ did well to explain the discrepant findings between the randomized trials of RMA in CABG, reasoning that the larger, presumably more scarred, ventricles of the earlier trials were better disposed to improvement with RMA and less likely to improve with CABG alone, since the nonviable myocardium will not improve with revascularization. The latter Cardiothoracic Surgical Trials Network trial had smaller left ventricular (LV) size, fewer incidences of MI, and presumably less-infarcted myocardium. As a result, these patients would more likely benefit from revascularization alone, attenuating any benefit RMA may confer. He proposes that patients with scar, LV dilatation, and suboptimal inferolateral target vessels

assessed using cardiac magnetic resonance, echocardiography, and cardiac catheterization, should undergo mitral valve intervention.

Michler⁷ argues that those patients with LV dilatation, especially in the face of a scarred ventricle, should be “considered” for a ventricular procedure such as a papillary muscle approximation (PMA) because PMA reduces LV end-systolic diameter and leaflet tethering and this reduction is sustained over time compared with RMA alone.⁸ His argument is logical, well-reasoned, and, since we haven’t the evidence to support such, it is well-stated. In the aforementioned randomized trials, no leaflet, or subvalvular, work was required, but this still increased postoperative complications. Although RMA is straightforward, PMA is a more recently developed technique and one not mastered by many cardiac surgeons. PMA further adds to surgical and ischemic times and is another feature to be incorporated into the surgeon’s decision algorithm when we as a community are still debating whether or, in whom, we should be adding an isolated RMA for ischemic moderate MR. Despite that, Dr Michler’s⁷ argument is compelling and will find advocates who will hopefully perform the necessary investigations to determine the value of PMA in addition to RMA and CABG in ischemic moderate MR.

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