See related editorial on pages 1425-7.

ISCHEMIC MITRAL REGURGITATION: REPAIR THE VALVE, RESHAPE THE VENTRICLE, OR BOTH?

To the Editor:

We read with interest the article by Kron and colleagues,¹ which addresses the complex issue of mitral repair durability in patients with ischemic mitral regurgitation (MR). The authors must be credited for reporting the particularly high rate of recurrence (ranging from 25.5% at 6 months up to 39% at 24 months) in the Cardiothoracic Surgery Network (CSTNet) trial. Interestingly, the authors claim that the mechanism for recurrence was largely mitral valve leaflet tethering, although no measures of tethering were retained in the model. Moreover, they identify basal aneurysm/dyskinesis as 1 of the more robust mechanisms of failure, and for this reason they advocate for more innovative repair techniques.

However, the desire for alternative repair techniques is not new. In 2002, Kron and colleagues² described the direct relocation of the posterior papillary muscle tip in a small group of patients with previous inferior myocardial infarction, but not severely dilated ventricles (<6 cm in end-systolic diameter). In patients with dilated left ventricles (>6 cm end-systolic diameter), the Dor procedure, that is, relocating the papillary muscle base, was advocated. Later, Levin and colleagues³ outlined the importance of anteroapical myocardial infarction causing MR despite the absence of inferobasal wall motion abnormalities. Recently, we⁴ addressed the differences between anterior and posterior remodeling in patients with previous myocardial infarction undergoing surgical ventricular reconstruction. In patients with previous inferior myocardial infarction, the remodeling can occur between the 2 papillary muscles or between the posteromedial papillary muscle and the posterior septum, which is usually deeply involved. Anyway, MR, if it occurs, is mainly related to localized inferobasal left ventricular (LV) remodeling causing lateral displacement of the posterolateral papillary muscle, increased internal diameter, and mitral valve

posterior leaflet tethering. Hence, MR occurs with less global LV remodeling and dysfunction, and especially without any involvement of the anteroseptal LV wall.

In patients with previous anterior myocardial infarction, MR occurs mainly in the setting of global LV dilatation and severe dysfunction, with tethering of both mitral valve leaflets due to apical displacement of papillary muscles. Accordingly, the surgical procedure to rebuild the LV cavity is different in the 2 groups,^{4,5} but the technique to repair the mitral valve, when indicated, is not. The result is a greater reduction of the internal diameter in the absence of a significant increase of the sphericity index in patients with posterior remodeling compared with patients with anterior remodeling.⁴ Accordingly, a lower rate of recurrence, as would be expected, could translate into better long-term survival. Therefore, we think that the problem is not how to repair the mitral valve, but the strategy with which the underlying ventricle is addressed, and surgical ventricular reconstruction plus mitral valve repair is a reasonable option for patients with previous inferior myocardial infarction and ischemic MR.

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OFF-PUMP VERSUS ON-PUMP CORONARY ARTERY BYPASS GRAFTING: WHO BENEFITS?

To the Editor:

We read with great interest the editorial commentary by Rubens¹ regarding our recently available meta-analysis² suggesting improved outcomes with off-pump coronary artery bypass grafting (CABG) relative to conventional on-pump CABG in high-risk patients. In brief, the analysis by including 100 randomized controlled trials (RCTs; N = 19,192 patients) comparing off-pump versus on-pump

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