New insights into the surgical treatment of mitral regurgitation

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Chapter 2

Reply to the Letter to the Editor "Repair of Chronic Ischemic Mitral Regurgitation with Posterior Leaflet Extension"

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We thank Atoui and de Varennes for their interest and positive comments [1] regarding our review article [2]. We agree with them that, in their recently published article in "Circulation" [3], a promising technique is described with good mid-term results that would have been a valuable addition to Table 2 of our review [2]. However, their article was published after submission and acceptance of our review article.

The technique described by de Varennes and colleagues involves remodeling annuloplasty combined with augmentation of the posterior mitral valve leaflet height (medial half of P2 to the end of P3) with bovine pericardium to relieve mitral valve leaflet tethering in 44 patients with type IIIb grade 4+ chronic ischemic mitral regurgitation (CIMR). The observed actuarial freedom from recurrent grade ≥3+ mitral regurgitation was 90% at 2 years.

Although there is debate about the relative importance of anterior and posterior leaflet tethering in CIMR recurrence, promising mid-term results of anterior leaflet augmentation combined with annuloplasty have also been described in 25 patients with grade ≥3+ CIMR. Two-year actuarial freedom from grade ≥3+ CIMR was 81% [4].

Both posterior and anterior leaflet augmentation can effectively relieve tethering, but we would like to stress again at this point that such a combined annular/valvular technique does not address the main pathophysiological mechanism of CIMR (i.e., ischemia-induced left ventricular (LV) dilatation) and thus renders it prone to CIMR recurrence. An interesting subject for future research would be to investigate whether or not there is an additional benefit of combined remodeling annuloplasty, posterior or anterior leaflet augmentation, and a subvalvular or ventricular technique, especially in patients with advanced stages of LV dilatation, who are unlikely to undergo LV reverse remodeling following an isolated annular/valvular repair technique [5].

In addition, long-term results of a pericardial patch sutured in a valve leaflet are unknown. The risk of decreasing pliability due to calcification or shrinking of the patch may compromise repair at follow-up. Longer follow-up is necessary to reveal the long-term competence of annuloplasty and (posterior) leaflet augmentation, either as an isolated procedure or combined with subvalvular/ventricular techniques.

■ References

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[3] De Varennes B, Chaturvedi R, Sidhu S, Cote AV, Li Pi Shan W, Goyer C, Hatzakorzian R, Buithieu J, Sniderman A. Initial results of posterior leaflet extension for severe type IIIb ischemic mitral regurgitation. Circulation 2009;119:2837-43.

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