Correspondence

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Combined Anterior Mitral Leaflet Extension and Myectomy in Hypertrophic Obstructive Cardiomyopathy

To the Editor:

Dr van der Lee et al describe a combined operative procedure for treating patients with obstructive hypertrophic cardiomyopathy. As well as a “standard” subaortic myectomy, they added a glutaraldehyde-treated autologous pericardial patch to the anterior leaflet of the mitral valve. The authors applied their combined technique to 29 of the last 32 patients accepted for surgical correction.

The mitral valve, specifically the systolic anterior motion of the mitral valve leaflets, is an important component of the obstruction. However, the mitral valve is almost always intrinsically normal, albeit with the exceptions we had previously described. Adequate relief of the outflow tract stenosis by generous myectomy will almost invariably limit its use to exceptional circumstances.

routinely. While the authors are to be congratulated in demonstrating situations in which the mitral valve is intrinsically abnormal should one consider additional procedures involving the mitral valve. In our clinical experience, mitral valve repair or replacement has been required in only 3.4% of surgical myectomy patients.

Myectomy alone should completely relieve the outflow tract gradient both at rest and with provocation. In the authors’ series, the septal thickness on average was reduced from 23 to 18 mm. The normal septal thickness in an adult is <12 mm, and we routinely excise sufficient septal muscle to leave a residual septal thickness within the normal range. This results in a resting mean gradient of 7 mm Hg and provokable gradient after extrasystole of <15. Mitral valve regurgitation after myectomy is absent or mild in 95% of patients.

We have previously reported patch enlargement of the mitral leaflets to relieve subaortic stenosis in the setting of atrioventricular septal defect. Although application of this procedure to patients with hypertrophic obstructive cardiomyopathy may be indicated in very rare situations, it would be a disservice to our patients to suggest it be used routinely. While the authors are to be congratulated in demonstrating the efficacy of enlarging the anterior mitral leaflet in hypertrophic obstructive cardiomyopathy patients, a word of caution is necessary in limiting its use to exceptional circumstances.

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Response

During the last decade major progress has been made in our understanding of the mechanisms of disease in hypertrophic obstructive cardiomyopathy (HOCM). Mitral valve replacement has been replaced by transaortic left ventricular septal myectomy. The myectomy trough extends more to the apex, and a residual midventricular gradient may be prevented by resection of the base of the papillary muscle. Abnormal papillary muscle insertion in the mitral leaflet, intrinsic mitral regurgitation caused by prolapse, and limited basal septal thickness (<15 mm) are no longer indications for mitral valve replacement as in the past. Despite these refinements, some patients have residual systolic anterior motion of the mitral valve and suboptimal clinical results.

The mitral valve in HOCM usually has an increased length of the anterior and posterior mitral leaflet. Abnormal anatomy and valve displacement induce drag forces that cause systolic anterior motion and that are opposed by an autologous pericardial patch in the anterior mitral leaflet. The classic Morrow myectomy measures 10 mm in width and depth. The feared complications are heart block and septal perforation.

Dr Williams stresses that a “generous” myectomy alone should be sufficient to treat HOCM patients. In his series, the resected trough was 30 to 55 mm long, 15 to 35 mm wide, and 10 to 20 mm deep, but there were residual midventricular gradients. In his later publications, perioperative details are not reported. In other hands, the extensive resections were obtained in a second pump run at increased risk for complications and death. However, excellent results were reported by others, using extended septal myectomy. Alternatively, limited septal myectomy and patch reconstruction show good late results with a low operative risk.

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