Commentary: More ado about nothing: Resect “versus” respect and left ventricular function after repair

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Recently data were published showing the equivalence of resect and respect techniques on left ventricular (LV) function in patients with degenerative mitral regurgitation.1 This excellent post-hoc analysis of a randomized study of 104 patients (the CAMRA Cardio-Link 2 study; Clinicaltrials.gov identifier NCT02552771) reports remarkably similar results.2 LV remodeling begins early after repair, as documented on predischarge echocardiogram. This is especially prominent with the reduction of LV end-diastolic volume and dimension index, and this improvement continued at 12-month follow-up. LV end-systolic volume and dimension index did not change predischarge, but both had reduced by the 12-month echocardiogram. Correspondingly, LV ejection fraction dropped about 10 points early (61.1 ± 5.4% preoperative vs 51.7 ± 8.7% predischarge; \( P < .0001 \)). In addition, by 12 months and tracking the improvement in LV end-systolic volume index, the ejection fraction had improved (56.4 ± 5.1%; \( P < .0001 \)) but did not return to the preoperative level. This early reduction in LV ejection fraction, and only partial return to normal, has been reported before and likely reflects that we wait too long to operate on this group of patients.3-5 Asymptomatic, or mildly symptomatic patients, may be observed with “watchful waiting” until there are irreversible changes in LV function, which may reduce late survival.5 Other notable findings included an early and sustained reduction in pulmonary artery pressures and left atrial volume index. There was no change in tricuspid regurgitation over time (only 4 patients had tricuspid valve annuloplasty). As noted in the previous report,1,6 there was no appreciable physiologic difference in LV function between the leaflet resection and leaflet preservation (neochords) groups. Although both studies1,2 were small, the findings are quite similar in this respect, and the previous study1 also included global LV strain. The take-home point of repair with either strategy should be to leave no residual mitral regurgitation more than mild. Using a technique with which you are comfortable will provide the patient with durable freedom from recurrent mitral regurgitation. Both techniques work fine.

CENTRAL MESSAGE

The focus of mitral valve repair should be to leave no more than mild residual mitral regurgitation. Resect and respect are equally successful techniques.

References


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Commentary: Assessing recovery of ejection fraction after mitral repair: One year after operation, are we there yet?

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Hibino and colleagues1 present the results of a randomized trial of leaflet resection versus leaflet preservation in 104 patients undergoing mitral repair for posterior prolapse. The authors conclude that the mitral repair technique used did not influence postoperative left ventricular (LV) reverse remodeling, and that although LV end diastolic dimensions recovered before discharge, improvements in LV end systolic dimension were evident 12 months after repair.

Changes in LV volumes after mitral valve repair have been well documented. The value of this study is to confirm prior reports of changes in LV volumes after mitral repair, using data from the second reported randomized trial of resect versus respect techniques. These data are an update of the initial trial report.2 Other studies have compared the resect versus respect repair techniques, but there has been only 1 other randomized trial.3 In terms of new data comparing LV volumes after resect versus respect repairs, this is a negative study with no differences seen.

This trial does have minor limitations. The results are reported as intention to treat, whereas most prior studies have been reported with as-treated results, which might be more useful in retrospective prediction of outcomes. Secondly, this series examined a select group of patients with posterior mitral prolapse and ejection fraction >40%. This would include most prolapse patients undergoing repair. Whether or not these results apply to patients with other valve etiologies or more significant LV dysfunction is less clear. On the positive side, this prospective, randomized trial made use of very high quality echocardiography follow-up using a core laboratory. The degree of echocardiography follow-up is higher than in most retrospective series.

This study did not examine time intervals between 30 days and 1 year or over 1 year in terms of recovery of ejection fraction. Figure 1 shows data from a series of 1069 patients undergoing mitral repair for mitral regurgitation at Duke University. These patients were followed with clinical echocardiography over 2 years after surgery. Figure 1 suggests that indeed 30 days is too early to obtain stabilization of ejection fraction in patients with baseline ejection fraction of 50% or greater. Patients with baseline ejection fraction <50% have a much more prolonged recovery of ejection fraction that may require more than 2 years, if recovery occurs at all.