Commentary: Repair or replace rheumatic mitral valves?

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Fu and colleagues compare the outcomes of mitral valve repair with MV replacement in patients with rheumatic MV disease. During a recent 8-year period, 612 patients underwent MV repair and 1032 underwent MV replacement by 3 surgeons experienced in MV repair. A propensity score analysis was used, and the investigators obtained 529 pairs of patients with similar clinical and hemodynamic characteristics. The authors demonstrated that MV repair was associated with better survival and lower rates of valve-related adverse events than MV replacement, regardless of the type of prosthetic heart valve used for replacement. Because all of the operations were performed by 3 surgeons experienced in MV repair, one has to consider that most patients with rheumatic MV disease could not have MV repair. Thus, there is little we can do to change the fate of patients whose pathology precludes a satisfactory MV repair. Indeed, the authors conclude that the “results suggest that rheumatic mitral valve repair in proper patients is superior to mitral valve replacement with regard to lower mortality and fewer valve-related complications.” The article contains no postoperative echocardiographic data or exercise capacity after MV repair.

A recent publication from the same institution presented patients with mitral stenosis in whom there was no difference in survival after MV repair or replacement using a similar type of statistical analysis.

My experience with patients with rheumatic disease is not as extensive as that reported by Fu and colleagues, but some 20 years ago we pointed out that survival after MV repair was better than after MV replacement.

During a 16-year interval we operated on 573 patients with rheumatic MV disease and 142 (25%) underwent MV repair. Survival at 10 years was significantly better after MV repair than after MV replacement with mechanical or bioprosthetic valves. Reoperations, however, were far more common after MV repair than with MV replacement with mechanical valves. Other retrospective studies showed similar results; that is, MV repair enhances survival in patients with rheumatic MV disease.

Rheumatic mitral stenosis with low echocardiographic score for fibrosis and calcification can be effectively treated with percutaneous balloon valvotomy and the results are similar to those obtained with open valvotomy. Rheumatic mitral regurgitation and mixed lesions are problematic because the functional outcome is highly dependent on the degree of fibrosis and calcification in the leaflets and chordae tendineae. Although it is possible to resect parts of the valve and reconstruct with glutaraldehyde-fixed-autologous or bovine pericardium, the durability of such repair is limited. Rheumatic MVs with relatively pliable leaflets and with some residual chordae tendineae between the papillary muscles and the leaflets should be repaired in adults. Rheumatic MVs with no residual chordae tendineae and papillary muscles attached directly to the leaflets cannot be satisfactorily repaired, regardless of how extensive a fenestration of the fused chordae one is able to do surgically. The functional result as assessed by echocardiography is often...
disappointing and most patients have limited exercise capacity after surgery. In these patients, MV replacement is a better option than MV repair. When replacement is done, I believe that at least part of the posterior attachments between the papillary muscles and mitral annulus should be preserved and, if this is not possible, both papillary muscles should be resuspended with 4-0 sutures of expanded polytetrafluoroethylene and secured to the annulus and sewing ring of the prosthetic MV. This maneuver effectively reduces the risk of rupture of the posterior wall of the left ventricle, a rare but dreadful complication of MV replacement in older patients with rheumatic MV disease.

References