Chordal replacement versus quadrangular resection for repair of isolated posterior mitral leaflet prolapse.

Abstract:
In the past, chordal replacement techniques with expanded polytetrafluoroethylene sutures have been primarily reserved for anterior leaflet pathology, whereas the more frequent posterior leaflet prolapse was treated by resection. This study reports midterm results of isolated posterior prolapse repair with chordal replacement without resection as opposed to the quadrangular resection. An analysis was made of 397 consecutive patients who underwent mitral valve repair for isolated posterior leaflet prolapse between 2000 and 2007. Of them, 205 patients (52%) underwent quadrangular resection (group R, "resection") and 192 patients (48%) underwent a neochordal repair (group NR, "no resection"). The follow-up is 98% complete (mean follow-up of 383 survivors is 1.9 +/- 1.4 years). Overall 30-day mortality was 1.0% (4 of 397). Ten patients (2.5%) died late. Actuarial survival at 4 years for group R and group NR was 94% +/- 3% and 98% +/- 1%, respectively (p=0.99). Ten patients (2.5%) required a mitral valve-related reoperation after an average of 1.9 +/- 2 months. Freedom from reoperation at 4 years was 96% +/- 1% for group R and 99% +/- 1% for group NR (p=0.08). Generally, in patients of group NR, a larger annuloplasty ring could be implanted (mean size 32 +/- 2.5 versus 30 +/- 2, p<0.001). At latest follow-up, 94% of
the patients showed no or grade I regurgitation, with no difference between groups. Repair of posterior mitral leaflet prolapse by chordal replacement is equally effective as classic quadrangular resection, permits the use of larger annuloplasty rings, offers a potentially more physiological repair with preserved leaflet mobility, and can be performed with excellent midterm results and a low incidence of reoperation.