

Papillary muscle relocation in conjunction with valve annuloplasty improve repair results in severe ischemic mitral regurgitation.

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Abstract

OBJECTIVE:

The incidence of recurrent mitral regurgitation (MR) after restrictive annuloplasty (RA) was 5% to 20% in several reports. There are many opinions in favor of adding subvalvular procedures to RA to reduce the tenting forces and improve the repair results.

METHODS:

From March 2003 to May 2010, 55 patients with severe ischemic MR who had undergone papillary muscle (PPM) relocation in conjunction with mitral annuloplasty in our institutions were enrolled. The patients were matched 1:1 with those who underwent isolated RA using the propensity score. The mean left ventricular ejection fraction was $42\% \pm 6\%$. The mean tenting area and coaptation depth was 3.2 ± 0.6 cm² and 1.3 ± 0.2 cm, respectively. The study endpoints were early mortality and clinical and echocardiographic outcomes, freedom from cardiac-related deaths, and cardiac-related events.

RESULTS:

In-hospital death occurred in 5 patients (4.5%), without a statistically significant difference between the 2 groups ($P = .72$). The 5-year freedom from cardiac-related deaths and cardiac-related events in the PPM relocation group versus the RA group was $90.9\% \pm 1.8\%$ versus $89\% \pm 1.6\%$ ($P = .82$) and $83\% \pm 2.1\%$ versus $65.4\% \pm 1.2\%$ ($P < .001$), respectively. Recurrent MR equal to or greater than moderate occurred in 2 (3.7%) and 6 (11.5%) patients in the PPM relocation group and RA group ($P = .01$), respectively. Moreover, we found statistically significant differences for the postoperative mean tenting area and coaptation depth in both groups ($P < .001$).

CONCLUSIONS:

PPM relocation in conjunction to mitral annuloplasty is an easy and safe method and can be performed without an increase in-hospital mortality. This technique reduced the tenting area and coaptation depth compared with isolated RA, leading to improvement in the incidence of recurrent MR. The PPM group of patients experienced fewer cardiac-related events.