**Greater LV Chamber Sphericity Contributes to Post-op Mitral Regurgitation**

**TITLE:** Effects of the Dor Procedure on Left Ventricular Dimension and Shape and Geometric Correlates of Mitral Regurgitation One Year After Surgery

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**JOURNAL:** Journal of Thoracic and Cardiovascular Surgery 2001; 121: 91-6

**THIS PAPER ADDRESSES:** Late left ventricular (LV) changes and geometric correlates of late mitral regurgitation (MR) following the Dor procedure.

**SUMMARY:** Preoperative and one-year postoperative ventriculographic data from symptomatic patients who underwent the Dor procedure were retrospectively analyzed to determine LV shape changes induced by the operation and analyze geometric correlates of late MR. Significant reductions in LV volume indices and increases in ejection fraction (EF) were observed early after the operation and at 1 year post-op. Patients who developed MR following the procedure had larger ventricular volumes and greater chamber sphericity than those who did not develop MR.

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**KEY POINTS:**
1. Between 6/97 and 8/98, 70 patients underwent the Dor procedure and associated coronary grafting for symptoms related to congestive heart failure or angina following myocardial infarction. Forty four of 67 (66%) surviving patients were followed-up at one year.
2. LV volumes, global LV systolic and diastolic sphericity, extent of wall motion abnormalities, and presence and degree of MR following the operation were compared to preoperative values.
3. A significant reduction in LV end diastolic (201 ± 78 to 127 ± 46 to 140 ± 47 mL/m²; p<.0001) and end systolic (137 ± 70 to 67 ± 37 to 77 ± 33 mL/m²; p<.0001) volume indices and increase in EF (34 ± 13 to 50 ± 12 to 46 ± 10%; p<.0001) were observed early after the operation and at 1 year compared to baseline.
4. MR was detected postoperatively in 17 (38%) patients, 14 of whom did not have MR preceding the operation. Patients with late MR had larger LV volumes and more spherical chambers than those without late MR, suggesting more severe remodeling.

**CONCLUSIONS:**
1. Chamber enlargement and distortion of LV shape appear to be important contributors to development of late MR,
2. LV function is improved after the Dor procedure, and
3. Early intervention may optimize surgical restoration of LV function, size and shape.