Clinical and echocardiographic evaluation of patients undergoing total leaflets preservation during mitral valve replacement; Does it make a difference?

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Abstract:

Background: The effect of anterior and posterior leaflet preservation on left ventricular function after mitral valve replacement is still the subject of ongoing research. The objective of this study is to analyze the early outcomes of total leaflets preservation compared to posterior and non-leaflet preservation during mitral valve surgery on cardiac function and dimensions measured by echocardiography and on the clinical outcomes. Methods: This prospective cohort study recruited 155 patients who had mitral valve replacement (MVR) from April 2016 to March 2018 at Assiut University Hospital. Patients were divided into three groups according to the technique of leaflets preservation; Group I (no leaflet preservation-N-MVR), Group II (total leaflet preservation- T-MVR) and Group III (posterior leaflet preservation-P-MVR). Patients who underwent redo mitral valve replacement (MVR) or those with endocarditis and had combined coronary artery bypass grafting with the MVR were excluded from the study. Results: There were nine early deaths (6%); eight patients were in Group I (N-MVR). Causes of mortality were massive intracranial hemorrhage (n= 2) and left ventricular failure (n=6). One patient died in Group III (P-MVR) from intracranial hemorrhage (1.3%). Hospital stay was significantly longer in N-MVR group compared to T-MVR and P-MVR (10.6±2.13 days in N-MVR group; p= 0.03 and 0.011 respectively). Postoperative low cardiac output occurred in all patients in N-MVR group. Left ventricular function (ejection fraction= 61.28±6.02%) and dimensions (end-diastolic diameter= 5.18±0.69 mm, end-systolic diameter= 3.58±0.78 mm) improved significantly in total leaflets preservation group. Conclusion: Leaflet preservation during mitral valve replacement was associated with improved clinical and echocardiographic outcomes. Non-leaflets preservation increased the risk of postoperative complications and length of hospital stay. Leaflet preservation is recommended as the standard approach during mitral valve replacement.

Keywords:

mitral valve replacement, leaflets preservation, Left ventricular function

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