

Reoperative mitral valve surgery via right mini-thoracotomy: the safer and more effective way

Background: Re-operative mitral valve surgery is sometimes burdened by a greater technical difficulty and a higher complications rate than the first operation. Minimally invasive cardiac surgery has become routine, and it could significantly reduce the surgical risk in redo surgery.

Methods: From February 2017 to December 2021, 85 patients underwent re-operative mitral valve surgery in our institution. Cardiopulmonary bypass was started by cannulation of the femoral and jugular vein and femoral artery or alternatively right axillary artery. Patients enrolled had a mean age of 65 ± 11.3 years. Patients were divided into three groups based on the procedure adopted: External aortic cross-clamp, EndoAortic balloon occlusion and ventricular fibrillation (VF). Major complications were evaluated and compared with a propensity matched population of patients undergoing elective isolated mitral valve surgery via right minithoracotomy.

Results: The average time between last operation and reoperation was 7.5 ± 3.9 years. Nineteen patients (20%) underwent mitral valve repair and 76 patients (80%) underwent mitral valve replacement; 12 patients (11,4%) received tricuspid valve surgery. There was no statistically significant difference in CPB time between the groups. 7 patients (6.65%) had a postoperative renal failure, 7 patients (6.65%) underwent surgical reopening for bleeding; incidence of post-operative stroke and pace-maker implantation was 3.1% for both. No deaths were registered during in-hospital stay and at 30-days echocardiographic control all patients respect the criterions of device success according with MVARC. Propensity matched patients of group redo had a longer cardiopulmonary bypass time (10178 ± 50.7 min versus 70.8 ± 17.7 , $p < 0.001$) and cross-clamp time (69.9 ± 31.7 min versus 61.1 ± 10.1 min, $p < 0.001$) respect to first operation mitral valve surgery patients.

Conclusions: minimally invasive mitral valve redo surgery is a safe procedure. Less invasive techniques in redo surgery could minimize morbidity and mortality without prolonging the duration of cardiopulmonary bypass.

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