

# 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  $65 \pm 11.3$  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  $7.5 \pm 3.9$  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 ( $10178 \pm 50.7$  min versus  $70.8 \pm 17.7$ ,  $p < 0.001$ ) and cross-clamp time ( $69.9 \pm 31.7$  min versus  $61.1 \pm 10.1$  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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