

A comparative study of totally endoscopic minimal invasive mitral valve repair and conventional median sternotomy

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Objective : To investigate the comparison of totally endoscopic minimal invasive mitral valve repair and conventional median sternotomy mitral valve repair.

Methods: A total of 106 patients with degenerative mitral valve disease who were treated in our hospital from January 2022 to December 2022 were selected and randomly divided into an observation group and a control group, with 53 cases in each group. The patients in the observation group were treated with totally endoscopic minimal invasive mitral valve repair, while the patients in the control group were treated with conventional median sternotomy. The intraoperative and postoperative data, cardiac ultrasonography results, changes in inflammatory react and myocardial injury index levels, postoperative complications, and the New York Heart Association (NYHA) cardiac function classification 1 year after surgery and mortality rate were compared between the two groups.

Result: The cardiopulmonary bypass time and aortic cross clamp time in the observation group were higher than those in the control group, and the intraoperative blood loss was lower than that in the control group ($P < 0.05$). The drainage volume, ventilation time, red blood cell infusion volume, ICU stay time, and postoperative hospital stay time in the observation group were all lower than those in the control group ($P < 0.05$). After operation, the levels of CRP, TNF- α and IL-6 in the two groups were higher than those before operation, but the levels of CRP, TNF- α and IL-6 in the observation group were lower than those in the control group ($P < 0.05$); The levels of AST, cTnT and LDH in the two groups were higher than those before operation, while the levels of CK and CK-MB were lower than those before operation, and the levels of AST, cTnT, CK, CK-MB and LDH in the observation group were lower than those in the control group ($P < 0.05$); one week after operation, the LVEF of the two groups was higher than that before the operation, and the LVEDD and LAD were lower than those before the operation ($P < 0.05$). There was no difference between the observation group and the control group ($P > 0.05$). After operation, the total incidence of complications in the observation group was 16.98%, and the total incidence

of complications in the control group was 30.19%. The total incidence of complications in the observation group was lower than that in the control group ($P<0.05$). One year after operation, the cardiac function classification of the observation group was better than that of the control group ($P<0.05$), while there was no significant difference in the 1-year mortality rate between the two groups ($P>0.05$).

Conclusion:Totally endoscopic minimal invasive mitral valve repair and conventional median sternotomy have good effects on patients with degenerative mitral valve disease, but there is less bleeding during totally endoscopic mitral valve repair, which can reduce postoperative inflammatory react and myocardial injury, and the effect of reducing the incidence of postoperative complications is better.

Keywords:totally endoscopic mitral valve repair; conventional median sternnotomy; degenerative mitral valve disease; inflammatory react; myocardial injury