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Case Report

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Ventricular septal defect closure in jehovah witness patient through right mini thoracotomy

Abstract

We are presenting a case report of ventricular septal defect closure from right mini thoracotomy. A 22-years-old, Jehovah witness female patient underwent ventricular septal defect closure 6months after infective Endocarditis. She was operated through a right mini thoracotomy, in fourth intercostal space, using right jugular, right femoral vein and femoral artery cannulation. The procedure was performed using Edwards Thru Port instruments. Transesophageal echocardiography showed good result of the repair. Her postoperative course was uneventful and she was discharged on the fifth postoperative day.

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Introduction

Median sternotomy allows a good exposure and safe repair of congenital defects. However, mini thoracotomy is cosmetically more attractive, with no incidence of mediastinitis and a shorter hospital stay. Right mini thoracotomy is widely used for surgical approach of mitral valve. In congenital heart disease, right mini thoracotomy has been used mostly for atrial septal defect closure.[1-3]

Case report

A 22-year-old Jehovah witness female patient, with restrictive ventricular septal defect (VSD) (6mm, peri membranous, partially occluded by tricuspid connective tissue) suffered from an infective Endocarditis treated by antibiotics, and 6months later, she was admitted in our clinic for surgery. The patient was placed on right side anti-Trendelenburg 30°position, under general anaesthesia, with endotracheal single-lumen intubation and transesophageal echocardiography monitoring. Superior vena cava was percutaneously cannulated by the anesthesiologist, through the right internal jugular vein using Edwards's cannula Fem- Flex II 14 Fr. The right femoral artery and vein were surgically exposed through a small inguinal incision and cannulated (Edwards Fem-Flex II 18Fr and Edwards Quick Draw 22Fr respectively). A right mini thoracotomy (4cm) in fourth intercostal space was performed. CO2 insufflation was started by inserting a cannula through the thoracotomy incision. Cardiopulmonary bypass was established. Aorta was clamped by flexible clamp; myocardial protection was achieved with anterograde cardioplegic solution infusion through a root cannula in ascending aorta.

Right atriotomy was performed; the tricuspid valve tissue was displaced by silastic tapes for a better exposure of the perimembranous VSD, partially occluded by connective tissue of the tricuspid valve. The 6mm defect was closed with three auto-pericardial pledget sutures, using Edwards Thru Port instruments. Right atrium was closed. One epicardial wire was placed on right ventricle before the aorta was released. Under cardio pulmonary bypass cardioplegic cannula was removed and extracorporeal circulation was weaned (cardio pulmonary bypass- 66min, aortic clamp-25min). Transesophageal ecocardiography showed no residual shunt or tricuspid insufficiency. The patient was extubated after 2hours. The postoperative course was uneventful and she was discharged from the hospital on the fifth postoperative day.

Discussion

Right mini thoracotomy is extensively used for mitral surgery. In congenital heart disease, this approach has been used for atrial septal defect closure. There are few reports of VSD closure performed with minimally invasive surgery. Sung-Ho Jung et al.,[4] have published VSD repair from right or left anterolateral mini thoracotomy in 9 adult patients.[5] We have performed restrictive perimembranous VSD closure through right mini thoracotomy (4cm) in the 4th intercostal space. The exposure for this type of defect is not difficult and closure is safe.

Conclusion

In conclusion, right mini thoracotomy approach for restrictive perimembranous VSD closure in adult patient seems to be a safe technique with a good cosmetic result and a short hospital stay.

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Conflicts of interest

Author declares there are no conflicts of interest.

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