



Transthoracic closure of atrial septal defect and ventricular septal defect without cardiopulmonary bypass

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ABSTRACT. The minimally invasive surgical transthoracic occlusion of an atrial septal defect (ASD) or a ventricular septal defect (VSD) is an increasingly widespread alternative treatment for congenital heart disease. The aim of this study is to summarize our clinical experience with minimally invasive surgical transthoracic occlusion of ASD and VSD without cardiopulmonary bypass (CPB). Between April 2011 and October 2012, 27 patients with ASD and 95 patients with VSD (78 men and 44 women) were considered for minimally invasive surgical transthoracic occlusion without CPB. A small infrasternal incision (2.0-4.0 cm) was made under general anesthesia, under transesophageal echocardiography (TEE) guidance; the ASD and VSD were closed by using an appropriate occluder; and TEE was performed simultaneously to demonstrate the position of the device, any residual shunting, or encroachment on the atrioventricular valve, coronary sinus, or aortic valve. Successful transthoracic occlusion was performed in all 122

patients without complications. No complications such as third-degree atrioventricular block and residual shunting occurred after the procedures. The ventilation time was 2.2 ± 1.2 h, and the average length of hospital stay was 4.7 ± 1.7 days. All patients received aspirin at $3 \text{ mg} \cdot \text{kg}^{-1} \cdot \text{day}^{-1}$ (maximum 100 mg/day) 24 h after the procedure. Minimally invasive surgical transthoracic occlusion without CPB is a new treatment that has many advantages such as causing little trauma, promoting quick recovery, having less complications, and avoiding radiation damage. However, the appropriate selection of patients is still key to improving the success rate of the operation.

Key words: Atrial septal defect; Ventricular septal defect; Surgery; Transthoracic occlusion