

ABSTRACT

Atrial Septal Defect Correction Through Anterolateral Right Thoracotomy In Adult Patients

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Background. Minimally invasive techniques provide good visualization and access. With a number of advantages, these operations are promising and can be performed with a high degree of efficiency and safety. The goal of minimally invasive cardiac surgery is to achieve the best results for the patient with the same quality as through a complete median sternotomy.

Aim of the study

The purpose of the study was to determine the possibilities of minimally invasive surgery based on a retrospective analysis and comparison of the immediate results of surgical treatment of patients who underwent interventions to correct atrial septal defects using both traditional and minimally invasive methods.

Materials and Methods:

In this retrospective study 26 patients with atrial septal defect (ASD) operated in Cardiac surgical department at Republican Research Centre of Emergency Medicine were included. Surgical access was provided through right-sided anterolateral mini-thoracotomy (7-8 cm) in the third-fourth intercostal space or through median sternotomy. All patients regarding to the approach were divided into two groups: 1 – anterolateral right thoracotomy – 10 patients (8 (80%) – females; mean age – 35,2±5,5 years); 2- median sternotomy - 16 patients (12(75%) – females; mean age – 34,3±4,5). Cardiopulmonary bypass in with mini-thoracotomy cases was connected using “right common femoral artery – right common femoral vein”, superior caval vein was canullated directly. The femoral vessels were cannulated in “open” way. In median-sternotomy cases standard ascending aorta and bicaval cannulation was used. In all cases, an atrial septal defect was corrected with an autopericardial patch; The interatrial septum was accessed through the right atrium.

Results

The average duration of the operation in the first group was 140.5±49.0 min, the average time of CPB was 40.0±10.3 min, the average aorta cross clamp time was 25.6±5.1 min. The average volume of intraoperative blood loss was 200.0 ± 50.0 ml. In the second group – the duration of the surgery was 130.2±39.0 min, the average time of CPB was 35.0±8.1 min, the average time of aorta cross clamp was 22.6±3.1 min (p≥0,05).

In general, an uncomplicated postoperative period was observed in all operated patients. There were no bleedings in the early postoperative period that required reoperation. There were no wound complications on the access side. The average postoperative bed-day was 8.0 ± 2.0 in the case of mini-thoracotomy access, and 10 ± 2.0 in the case of sternotomy access.

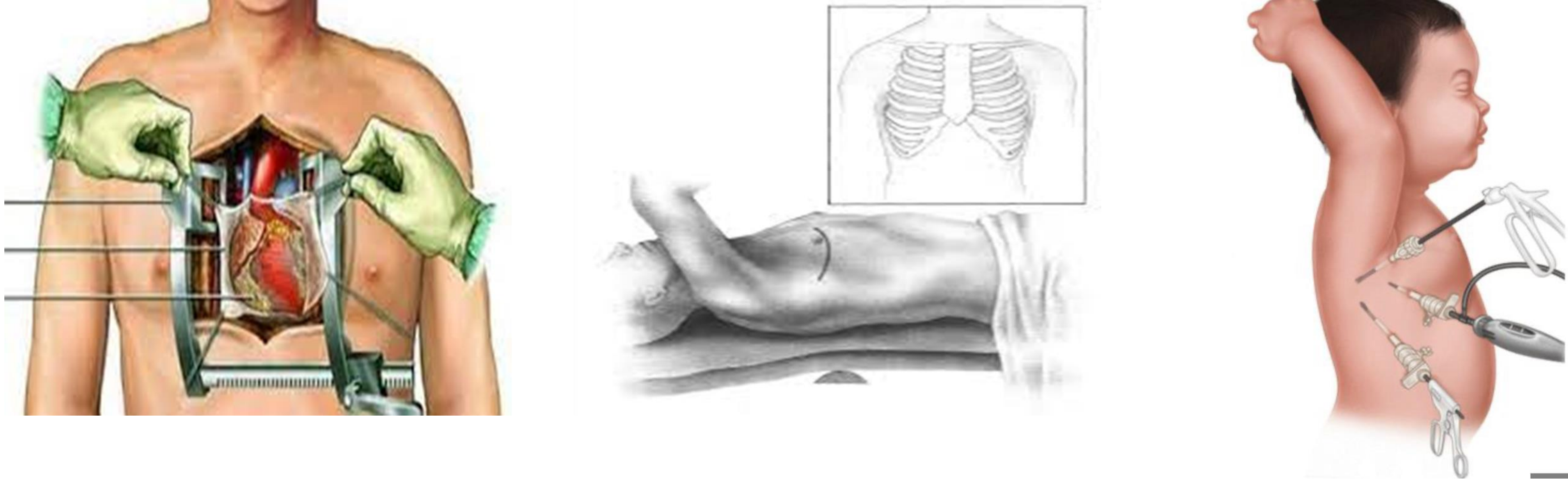
Conclusion. Minimally invasive techniques provides good visualization and allows adequate surgical correction. With a number of advantages, these operations are promising and can be performed with a high degree of efficiency and safety. We consider minimally invasive cardiac surgery as an opportunity to reduce surgical trauma, guaranteeing the patient the quality and safety of a standard approach.

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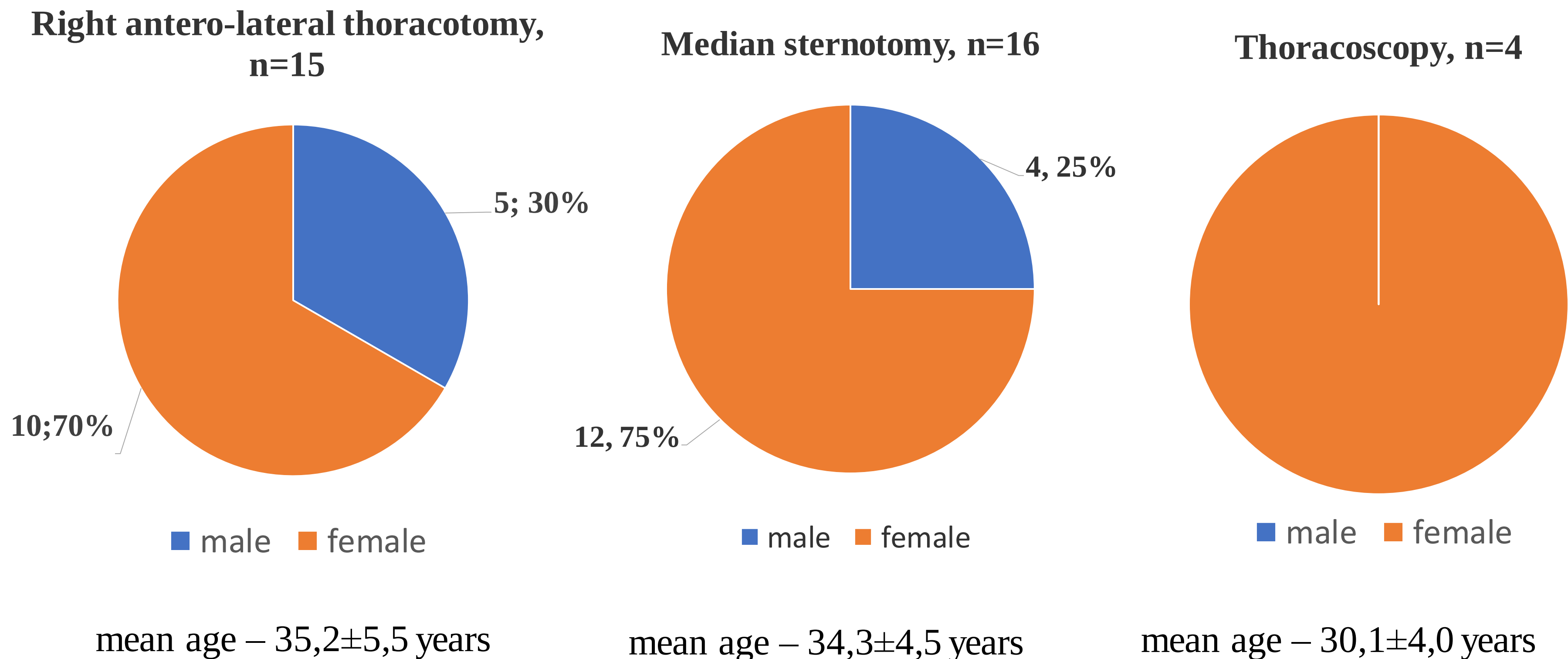


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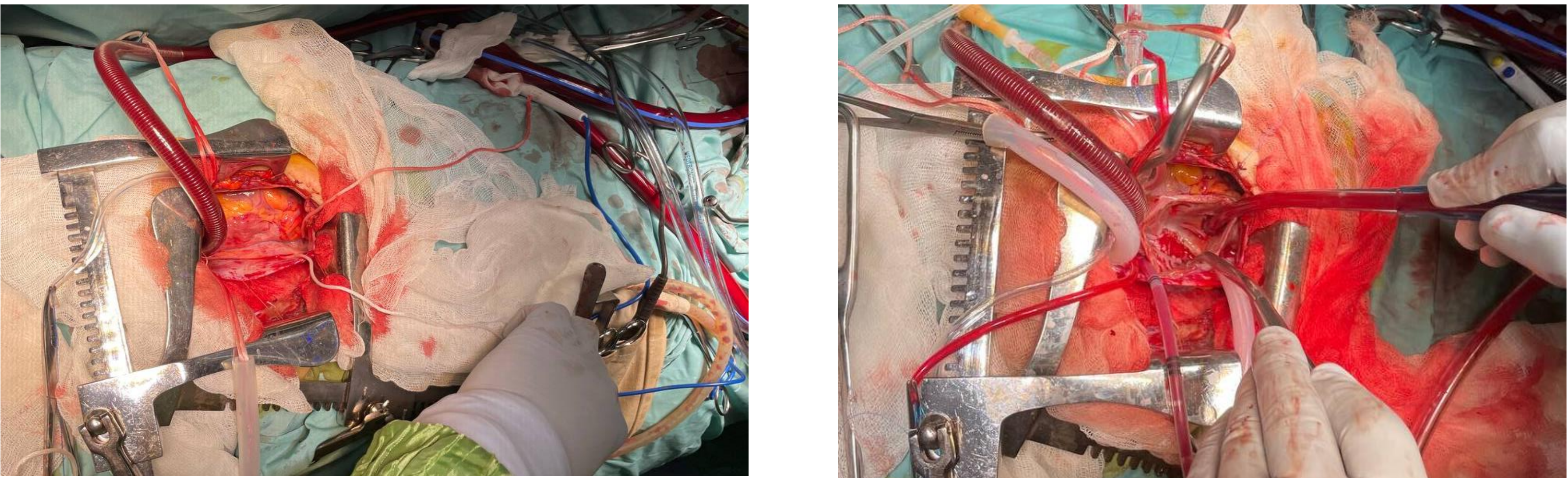
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Parameters	Right antero-lateral thoracotomy	Median sternotomy	Thoracoscopy	p-value
Duration of the surgery	140.5±49.0 min	130.2±39.0 min	155.1±59.0 min	p≥0,05
CPB	40.0±10.3 min	35.0±8.1 min	45.0±9,7 min	p≥0,05
Cross clamp	25.6±5.1 min	22.6±3.1 min	0 min	p≥0,05
Volume of intraoperative blood loss	200.0 ± 50.0 ml	155.0 ± 32.0 ml	100,0± 27.0 ml	p≥0,05
Postoperative bed-day (days)	8.0 ± 2.0	10 ± 2.0	7,5± 2,5	p<0,05

In general, an uncomplicated postoperative period was observed in all operated patients. There were no bleedings in the early postoperative period that required reoperation. There were no wound complications on the access side. The average was in the case of mini-thoracotomy access, and in the case of sternotomy access.

Conclusion. Minimally invasive techniques provides good visualization and allows adequate surgical correction. With a number of advantages, these operations are promising and can be performed with a high degree of efficiency and safety. We consider minimally invasive cardiac surgery as an opportunity to reduce surgical trauma, guaranteeing the patient the quality and safety of a standard approach.

References

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