

Razumovsky A.Yu., Savelieva M.A., Alkhasov A.B., Mitupov Z.B., Bataev S.M,  
Stepanenko N.S., Dalakyan D.S., Pavlov A.A., Ignatyev R.O.

*Pirogov Russian National Research Medical University  
Scientific Research Institute for Pediatric Surgery and SI RAS,  
Filatov Children's Hospital, MOSCOW, Russia*

Nuss repair of funnel chests is used increasingly, but has a high bar dislocation rate. The authors intended to reduce this by technical modifications of the original Nuss technique.

**Methods:** In 350 patients from 6 to 17 years of age (mean,  $12.4 \pm 3.8$ ) were operated by Nuss procedure at the Filatov Children's Hospital in Moscow for the last 10 years. 37% of patients had Sindromalny pathology.

**Operation technique:** The bars were placed from left to right with use of specially metal conductor; introduced of the T-shaped plate; fixing of both ends of a plate. Plate was removed in 4 years after surgery.

**Results.** Duration of operation averaged  $38 \pm 7$  minutes. Terms of hospitalization averaged  $8,5 \pm 2$  days. Thoracoscopy was used only at 8 (2,2%) patients. From them 4 patients were previous operated by Paltia plate repair, at 3(0,8%) patients – after sternotomiya for correction of CHA and 1 patient after a pulmonectomiya. Simultanny operations were done in 4 (1,1%) patients: Thoracoscopical ductus arteriosus repair - 2 patients, Thoracoscopical resection of a lung - 2 patients.

**Complications:** pneumothorax – 2(0,5%), gemathorax– 2(0,5%), plate shift – 1(0,2%) patient. One patient observed hyper correction of the chest. In 98% we had the excellent cosmetic and functional result. Residual deformation was observed - 7 (2%) patients. All patients were reoperated with excellent results.

**Conclusion.** The modified technique more safely and has reduced the incidence of bar dislocation.

## ENDOSCOPIC DIVISION OF THE VASCULAR RINGS IN CHILDREN

Razumovsky A.Yu., Stepanenko N.S., Alkhasov A.B., Mitupov Z.B., Bataev S.M,  
Rachkov V. Ye, Kulikova N.V., Ignatyev R.O.

*Pirogov Russian National Research Medical University  
Scientific Research Institute for Pediatric Surgery and SI RAS,  
Filatov Children's Hospital, MOSCOW, Russia*

**Introduction.** Congenital anomalies of the aortic arch such as a double aortic arch and a right-sided aortic arch can result in a severe respiratory failure, which requires emergency surgery. Modern equipment and accumulated experience make it possible to perform thoracoscopic surgery for this type of pathology.

**Materials & methods.** A total of 16 children (age from 1 months to 17 years, weight from 3,3 to 64 kg) who underwent thoracoscopic division of vascular rings from 2008 to 2016 in Filatov Pediatric Clinical Hospital No.13 were included in the study. The timing of surgery depended on the clinical picture and the severity of the respiratory failure. There were two types of vascular rings: double aortic arch - 7 children (40%), right-sided aortic arch with Botallo's duct - 9 children (70%).

**Results.** Mean operating time was 57 minutes. The average length of stay was 10 days. There was no intraoperative complications. In early postoperative period there was bleeding in one child due to failure of clipping the the distal segment of the aortic arch which required thoracotomy. Postoperative chylothorax was observed in one child, which was treated conservatively.

**Conclusion.** The latest advances in surgical methods allowed to make thoracoscopic division of vascular rings in infants and children the method of choice with detailed intraoperative visualisation of the anatomy of the defect and secure mobilization of large vessels. Thoracoscopic surgery for congenital anomalies of the aortic arch is feasible to improve the postoperative outcomes and reduce the time of hospitalization.