SURGICAL TACTICS FOR COMBINED CHEST INJURIES IN CHILDREN

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Abstract. *Chest injuries in children, despite their relative rarity, are among the most severe and clinically significant forms of pediatric traumatology [1]. The incidence of chest injuries among all pediatric injuries is approximately 4–8% [2]. The nature of injuries in children differs from that in adults: due to the high elasticity of the chest, pulmonary contusions, pulmonary contusions, pneumothorax, and hemothorax are more common, while rib fractures are less common [3]. Combined injuries, especially in polytrauma, significantly worsen the prognosis, increasing the risk of respiratory and cardiovascular failure, complications, and mortality [4]. To date, there are limited data on the frequency of use of surgical methods, their effectiveness, and outcomes in children, making the development of differentiated surgical tactics relevant [5].*

Key words: *cardiovascular failure, thoracentesis, video thoracoscopy, management strategy.*

Objective: to evaluate the effectiveness of modern surgical methods (thoracentesis, videothoracoscopy) and complex conservative treatment of bone injuries in children with combined chest injuries and to substantiate the optimal management strategy.

Materials and Methods. The study included 67 children with combined chest injuries. Clinical assessment, instrumental diagnostics (X-ray, ultrasound, CT), vital sign monitoring, and assessment of the severity of the condition upon admission were performed. The main surgical methods included thoracentesis with pleural drainage (64.2% of cases), video-assisted thoracoscopy in complicated or questionable situations, and thoracotomy in cases of severe injuries. Conservative treatment of bone injuries included adequate pain relief, breathing exercises, and regional blocks. Statistical data processing was used (SPSS, Statistica), with differences assessed at a significance level of $p < 0.05$.

Results. Surgical interventions were used in 85.1% of patients, with conservative management occurring in 14.9%. Thoracentesis with drainage successfully resolved hemothorax and pneumothorax in 64.2% of cases. Video-assisted thoracoscopy allowed for minimally invasive assessment of the pleural cavity and lungs, promptly identifying complications. Conservative measures for bone injuries improved ventilation, reduced hypostatic complications, and accelerated recovery. The use of a differentiated approach reduced the need for open surgery, decreased the morbidity of the interventions, stabilized respiratory function, and shortened the hospital stay.

Conclusions. The use of minimally invasive techniques (thoracentesis, video-assisted thoracoscopy) reduces the morbidity of procedures and the risk of postoperative complications. A comprehensive approach to the treatment of bone injuries, including optimal pain management and respiratory rehabilitation, improves clinical efficacy and accelerates patient recovery. The proposed strategy is recommended for implementation in pediatric surgery for concomitant chest injuries.

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