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OPTIMIZATION OF SURGICAL TREATMENT OF ESOPHAGEAL ATRESIA IN NEWBORNS

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Abstract:

Esophageal atresia (AP) is one of the most severe malformations requiring emergency surgical treatment in the neonatal period. The frequency of occurrence is 1:3000-4500 live births. Despite significant advances in the surgical treatment of this pathology, mortality remains high and amounts to 15-50%, depending on concomitant malformations and birth weight.

Keywords: esophageal atresia, insurmountable diastasis, newborns, thoracoscopic correction, esophago-esophagoanastomosis, surgical treatment, postoperative complications, prematurity, congenital malformations

INTRODUCTION. Esophageal atresia (AP) is one of the most severe congenital malformations requiring urgent surgical correction in the first days of a newborn's life. The frequency of occurrence of this pathology is 1:3000-4500 live births, which determines its significant medical and social significance. Esophageal atresia occupies one of the leading places in the structure of congenital malformations of the gastrointestinal tract and accounts for about 20-25% of all abnormalities of the digestive system[17].

Despite significant progress in the development of neonatal surgery and anesthesiology-intensive care, the treatment of newborns with esophageal atresia remains one of the most difficult problems of pediatric surgery. Mortality in this pathology varies from 15% to 50% and largely depends on the presence of concomitant malformations, birth weight, gestation period and timely diagnosis[18].

Modern achievements in the field of surgical technology, including the introduction of minimally invasive technologies, the improvement of suture material and methods of forming an anastomosis, have significantly improved the immediate results of treatment. However, the incidence of postoperative complications remains high and reaches 30-40%. The most common complications are anastomosis failure, stricture development, gastroesophageal reflux, and esophageal motility disorders [19]. The problem of treating newborns with large diastasis between esophageal segments becomes particularly relevant when performing primary anastomosis is technically difficult or impossible. In such cases, multi-stage surgical treatment is required, which significantly complicates patient management and increases the risk of complications[23].

An important aspect of the problem is the lack of unified standardized approaches to diagnosis, preoperative preparation, and postoperative management of patients with esophageal atresia. Existing treatment protocols vary significantly from clinic to clinic, making it difficult to assess their effectiveness and choose the optimal treatment strategy. In recent years, new possibilities have emerged for optimizing surgical treatment of esophageal atresia related to the development of methods of preoperative planning, intraoperative navigation, and postoperative monitoring. However, these methods require further study and standardization for widespread implementation in clinical practice [22]. All of the above determines the need for further improvement of approaches to surgical treatment of esophageal atresia in newborns in order to improve immediate and long-term treatment outcomes, reduce the incidence of complications and improve the quality of life of patients.

Optimization of surgical treatment of esophageal atresia should be based on an integrated approach, including improvement of diagnostic methods, surgical techniques, anesthetic care and postoperative management of patients. Solving this problem requires further research and the development of new methodological approaches to the treatment of this category of patients[21].

The use of minimally invasive technologies under favorable anatomical conditions.

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Application of a standardized protocol for postoperative management. Long-term follow-up of patients for timely detection of long-term complications. Optimization of surgical treatment of esophageal atresia in newborns requires an integrated approach, including improvement of diagnostic methods, surgical techniques and postoperative management. The introduction of modern treatment protocols can significantly improve the results and quality of life of patients[20].

Esophageal atresia (AP) is a congenital malformation that results in a violation of the integrity of the esophagus and the existence of two segments that do not communicate with each other. It occurs with a frequency of one case per 2500-5000 newborns [15]. Children with this defect need surgical treatment in the first days of life. Restoring the continuity of the gastrointestinal tract allows a child to eat through his mouth, integrate into the environment of his peers, get an education, which means they get the opportunity for a full-fledged life, including further professional activity. Thus, the correction of malformation solves important medical, social and economic problems.

Due to the achievements of modern medicine, in particular pediatric surgery and neonatology, the survival rate of children with esophageal atresia with a body weight of more than 1,500 g without concomitant pathological conditions is currently 99%. The main number of complications and unsatisfactory results is observed with large diastasis between the segments, during operations in deeply premature infants, as well as with the combination of AP with other malformations [1]. Most patients manage to perform a direct esophago-esophagoanastomosis in the first days of life. However, sometimes this cannot be done due to the large distance between the segments [14].

Currently, there is no doubt that the preservation of the native esophagus is associated with better postoperative outcomes [11]. At the same time, an equally important task is to preserve the functional usefulness of the restored esophagus [6]. Successful treatment of esophageal atresia with large diastasis depends on many reasons, including the choice of a rational correction method. Currently, various tactics have been proposed for the correction of AP with large diastasis: the imposition of delayed anastomosis, plastic surgery of the esophagus by other organs, and the elongation of esophageal segments.

The search for the optimal solution continues. Therefore, the work devoted to improving the care of children with esophageal atresia with large diastasis is relevant. Based on it, both immediate and long-term results of surgical correction of this malformation can be optimized. The degree of development of the problem. Currently, many issues in the treatment of children with esophageal atresia associated with large diastasis remain a cause for disagreement among surgeons. There is no single definition of large diastasis. According to the interpretation of the international group for the study of esophageal atresia, large diastasis is all cases when there is no intestinal gas filling on the X—ray [16]. Other authors dealing with this problem take such a distance between the segments as a large diastasis, at which, after complete mobilization, it is not possible to perform an anastomosis even with maximum tension [1]. Based on the analysis of the available data, the designation of a large diastasis as "insurmountable" seems more impressive.

There are few studies studying early and late postoperative complications in children who have attempted to lengthen their esophagus [3]. There was no connection between these complications and errors in determining the volume of the operation. Some aspects of postoperative management of patients with esophageal plastic surgery remain unresolved[18].

The rapid development of endoscopic surgery has led to the correction of esophageal atresia also being performed using thoracoscopy [2]. Experts note that this contributes to the improvement of both immediate and long-term treatment outcomes for children. With large diastasis, repeated interventions are often required. Performing repeated thoracotomies worsens the prognosis of treatment. While thoracoscopy helps to avoid many problems. Excellent visualization, the ability to maximize mobilization of both esophageal segments, and a significant reduction in musculoskeletal complications make thoracoscopic access the most preferable [9].

Conclusions: thus, the tactics of treating children with esophageal atresia, especially those associated with low birth weight, prematurity and/or insurmountable diastasis, should be based on clear criteria. The unification of the choice of surgical intervention and the management of the postoperative period will help to rationalize therapeutic tactics. When analyzing modern Russian and foreign literature, it becomes obvious that there are still many differences and contradictions in the surgeon's tactics for esophageal atresia with insurmountable diastasis. Therefore, there is a need to study this problem, which has determined the relevance of this study.

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