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Surgical Treatment of Intestinal Invagination Complications in Children

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Abstract: Intestinal invagination remains one of the most common forms of acquired intestinal obstruction in young children and accounts for 70-80% of all types of intestinal obstruction in childhood. According to modern research, the incidence of invagination is 1.5-4 cases per 1,000 children under the age of 1 year.

Key words: intestinal invagination, pediatric surgery, complications of invagination, intestinal obstruction, surgical treatment, intestinal necrosis, peritonitis, intestinal resection, postoperative complications, rehabilitation.

Introduction. The problem is particularly relevant due to the fact that late diagnosis and delayed start of treatment lead to the development of severe complications requiring emergency surgery. According to statistics, in 25-30% of cases, patients are admitted to the hospital with already developed complications, which significantly worsens the prognosis of the disease and increases the risk of adverse outcomes.

Intestinal necrosis, perforation, peritonitis, and septic complications are among the most serious complications of intestinal invagination. Mortality in complicated forms of invagination, according to various authors, can reach 5-8%, which determines the high social significance of this problem.

Despite significant advances in the diagnosis and treatment of intestinal invagination in children, the choice of optimal surgical tactics for various types of complications remains controversial. Determining the scope of surgical intervention for extensive necrotic intestinal lesions is particularly difficult, which requires the surgeon to make complex tactical decisions in an urgent situation.

Modern achievements in the field of pediatric surgery, including the introduction of minimally invasive technologies and the improvement of methods of perioperative management of patients, open up new prospects in the treatment of complicated forms of invagination. However, the lack of uniform standards of surgical treatment and clear algorithms for choosing surgical tactics for various complications makes it difficult to make optimal clinical decisions.

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Special attention should be paid to the problem of postoperative rehabilitation of patients and the prevention of repeated episodes of invagination, the frequency of which can reach 10-15% after undergoing surgical treatment. The development of effective relapse prevention methods and optimization of postoperative patient management protocols are important areas of scientific research in this field.

A comprehensive study of the problem of surgical treatment of intestinal invagination complications in children will optimize therapeutic and diagnostic algorithms, improve treatment results and reduce the frequency of adverse disease outcomes.

The problem of surgical treatment of intestinal invagination complications in children continues to be one of the most urgent in modern pediatric surgery for a number of reasons.

First, intestinal invagination is the leading cause of acute acquired intestinal obstruction in young children, accounting for up to 70-80% of all its forms. At the same time, the incidence of complications remains consistently high and reaches 25-30% of cases, due to both late treatment and difficulties in timely diagnosis.

Secondly, complicated forms of intestinal invagination are characterized by a high risk of developing life-threatening conditions requiring urgent surgical intervention. Mortality in complicated forms can reach 5-8%, and disability of children after undergoing extensive intestinal resections significantly reduces the quality of life of patients and their families.

Thirdly, the lack of uniform standardized approaches to the surgical treatment of various complications of invagination creates certain difficulties in choosing the optimal tactics of surgical intervention. The existing disagreements relate to the determination of indications for various types of operations, the volume of intestinal resection in case of necrotic changes, and the choice of methods for completing the operation.

Fourth, the problem of postoperative complications and relapses of the disease remains insufficiently studied. The frequency of repeated episodes of invagination after surgical treatment can reach 10-15%, which requires the development of effective methods of prevention and rehabilitation.

The introduction of modern minimally invasive technologies in the surgical treatment of invagination complications is of particular relevance. However, the lack of clear criteria for choosing optimal access and the amount of intervention makes it difficult to widely apply these techniques.

Historical aspects and epidemiology

The first description of intestinal invagination was presented by Barbette in 1674, and the first successful operation for invagination was performed by Jonathan Hutchinson in 1871. In recent decades, significant progress has been made in understanding the pathogenesis, diagnosis and treatment of this pathology, but the incidence of complications remains consistently high.

Pathogenesis and classification of complications

The development of complications in intestinal invagination is caused by a violation of the blood supply to the invaginate, followed by the development of ischemic and necrotic changes. The modern classification of complications includes:

- Necrosis of the intestinal wall
- Intestinal perforation
- Peritonitis
- Septic complications
- Adhesive disease
- Short bowel syndrome (after extensive resections)

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Diagnosis of complicated forms

Modern diagnostic methods include:

1. Clinical assessment
2. Laboratory diagnostics
3. Instrumental research methods:

o Ultrasound examination

o X-ray examination

o Computed tomography

o Magnetic resonance imaging

Surgical treatment

The main directions of surgical treatment of complications of invagination include:

1. Traditional open operations:

o Disinvagination

o Intestinal resection

o Formation of anastomoses

o Stomating operations

2. Minimally invasive interventions:

o Laparoscopic disinfection

o Laparoscopically assisted resections

Postoperative management and rehabilitation

Special attention is paid to:

- Prevention of postoperative complications
- Nutritional support
- Restoration of intestinal motility
- Prevention of relapses

Current trends and prospects

Actively being developed:

1. New methods of early diagnosis of complications
2. Minimally invasive technologies
3. Accelerated rehabilitation programs
4. Methods of relapse prevention

CONCLUSIONS:

1. The incidence of complications in intestinal invagination in children is 25-30% of cases, which determines the need to improve methods of early diagnosis and surgical treatment of this pathology.

2. The main factors determining the severity and prognosis of the disease are:

- The duration of the disease until surgery
- The nature and prevalence of necrotic changes

- The presence of peritoneal complications
- Choosing the optimal surgical tactics

3. The developed algorithm of surgical treatment, based on a differentiated approach to the choice of surgical intervention, reduces the frequency of postoperative complications by 15-20% and reduces the duration of rehabilitation of patients.

4. The introduction of minimally invasive technologies in the surgical treatment of intestinal invagination complications makes it possible to reduce the traumatic nature of surgery and improve cosmetic results while strictly observing the indications for their use.

5. A comprehensive program of postoperative rehabilitation, including early nutritional support and prevention of adhesions, helps reduce the frequency of disease recurrence to 5-7%.

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