

# Comparative Approaches to Prevention, Rehabilitation and Tactics of Treatment of Adhesive Intestinal Obstruction in Children

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## Annotation

*This article analyzes the experience of treatment of 111 children with various forms of adhesive impassability of intestines. The differentiated approach is put on a treatment basis in a choice of operative or conservative methods of treatment depending on the form of the disease, clinical features of a current, and efficiency of spent conservative actions. The specified principle in tactics choice has allowed to lower a considerable quantity of possible vain operations and their complications; to avoid lethality, it is essential to lower risk reoperations. The complex program of rehabilitation used in clinical practice and preventive maintenance of adhesive impassability has allowed to reduce the quantity of relapses of disease.*

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**Keywords:** adhesive intestinal obstruction; treatment; prevention; children

## Relevance of the Problem

At present, despite the development of preventive measures for pediatric abdominal surgery, this problem remains relevant [1–6].

Scientific and practical research and discussions aimed at solving dangerous complications, diagnosis, treatment tactics, rehabilitation, and prevention of intestinal obstruction after abdominal operations are still the focus of attention of research scientists and practitioners [1, 3, 5, 7–9].

Due to the high recurrence rate of intestinal obstruction in children, the recurrence rate is 7–10%, the complications of the disease are high, and the mortality rate is 31–40%.

According to the medical literature, the formation of adhesions in intestinal obstruction in children develops in 37% after appendectomy, 23% with obstructive intestinal obstruction, and 10% after coloproctological operations.

Adhesive processes develop after any surgical interventions in the abdominal cavity. Constipation is a polyetiological disease, and the process of the formation of adhesions is different. They are caused by a mechanical effect on the intestines, the aggressive action of exogenous chemical reagents on the intestinal walls, purulent diseases of the abdominal cavity, intestinal paralysis, and other factors. The above factors serve as the basis of the pathogenetic approach in the prevention and treatment of infectious diseases.

The adhesive process leads to the deformation of the intestinal tube and causes blockage of the digestive tract. As a result, serious complications in the postoperative period include intestinal necrosis due to the development of strangulation due to the lack of timely diagnosis and medical care. Timely diagnosis and correctly selected treatment tactics, depending on the type of intestinal obstruction and its course, are crucial, and an integrated approach to the prevention and rehabilitation of the disease, its positive consequences, and relapses are not observed [1, 3, 5, 7, 8, 10–12].

The aim of the study was to develop an integrated approach to the choice of rational surgical tactics, optimization of diagnosis, prevention, and rehabilitation of intestinal obstruction in children.

## Research and Survey Methods

During 2010–2021, 111 children with various forms of intestinal obstruction were examined at the center. 21 of them had symptoms of early intestinal obstruction, and 90 had symptoms of late intestinal obstruction (Table 1).

Gender of patients	Total age of patients				Total
	3–7	8–11	12–14	15–17	
Boys	6	16	23	21	66
	5.4%	14.4%	20.7%	19%	59.5%
Girls	5	8	15	17	45
	4.5%	7.2%	13.5%	15.3%	40.5%
Total	11	24	38	38	111
	9.9%	21.7%	34.2%	34.2%	100%

**Table 1:** Distribution of patients by age and sex (n - 111).

The average age of patients is 3–17 years. Patients had different processes of disease progression and used from 1.5 to 12 h.

The diagnosis is made on the basis of the clinical picture and X-ray studies (vertical and correct radiographs of the abdominal cavity); in some cases, diagnostic methods such as CT, MSCT, and ultrasound were used.

Based on many years of practical experience, CT, MSCT, and ultrasound methods play a key role in the early diagnosis of intestinal obstruction.

Conservative and surgical methods are used to eliminate intestinal obstruction. Conservative complex methods of treatment include decompression of the gastrointestinal tract, gastric probing, cessation of feeding, infusion therapy with correction of electrolyte disturbances and potassium levels, drug stimulation of the intestine, siphon enema, conservative measures, early adhesive intestinal obstruction and late adhesive intestinal obstruction with acute subtypes. Conservative measures were determined by the results of contrast studies of the gastrointestinal tract and how effective measures are in intestinal obstruction.

Isakov et al. distinguishes subacute, acute and subacute forms of intestinal obstruction with late adhesions, generally accepted in pediatric surgery [13].

If conservative treatment performed in children with intestinal obstruction does not give an effect after 2–3 h, despite intestinal stimulation, this is an indication for surgery.

The diagnosis of acute and subacute forms of intestinal obstruction is an indication of urgent surgical practice in hospitalized patients [14–20].

In our center, much attention is paid to the early prevention of infectious diseases.

Intraoperative, early prevention of adhesive disease requires a very delicate approach to the tissues of the abdominal cavity. In the postoperative period, the main goal of disease prevention is the rapid elimination of inflammatory processes in the abdominal cavity; the drainage tube in the abdominal cavity should not be left for more than 2–3 days.

The abdominal cavity must be washed with a fibrinolytic mixture according to the scheme used in the focus. Fibrinolytic mixture (heparin 10,000 IU + fibrinolysin 20,000 IU + hydrocortisone 125 mg + gentamicin 80 mg + novocaine 0.25% 200 ml).

The complex scheme for the treatment of adhesive disease developed in the clinic consists of measures: diet, physiotherapy courses against adhesive disease, and dispensary observation of patients. The main tasks of restorative treatment and prevention of abdominal adhesions include ensuring adequate functioning of intestinal motility, prevention of prolonged coprostasis, resorption of abdominal adhesions, and strengthening the muscles of the anterior abdominal wall.

One of the main goals is to prevent paralysis of the intestines and to give food at least 4–5 times a day so that patients do not starve for a long time. It is necessary to limit foods that are poorly digested and produce gases in the intestinal cavity. It is necessary to regularly take enzymes (festal, pancreatin, panzinorm), control free defecation, and conduct 4 courses of physiotherapy treatment of adhesive disease per year with an interval of 1–2 months. Physiotherapeutic procedures, starting from the stages of inpatient treatment, including UHF No. 5–7, electrophoresis with potassium iodine No. 15, phonophoresis with hydrocortisone No. 15, applications of ozokerite on the anterior wall of the abdomen No. 10. Depending on the situation, it is recommended to carry out balneotherapy once or twice a year. They should always do physical exercises to strengthen the muscles of the anterior abdominal wall. In recent years, we have recommended serrata for a comprehensive program for the prevention and rehabilitation of adhesive diseases. This drug has enzymatic, proteolytic, anti-inflammatory, immunomodulatory, detoxification, and antioxidant properties.

## Results

A comparative approach to timely diagnosis, choice of tactics, and improvement of methods for the treatment of adhesive intestinal obstruction can achieve very good results in the treatment of sick children of this contingent. The total number of patients with general surgical interventions was 111, 64 of them laparoscopically, 15 children with an early form, and 32 children with late adhesive intestinal obstruction. In 2 patients, relaparotomy and intestinal anastomosis were performed for intestinal necrosis. Recurrence under our supervision of patients with intestinal obstruction was observed in 3 children; intestinal obstruction was eliminated laparoscopically.

After discharge from the hospital, all patients were recommended complex anti-adhesion treatment according to the scheme implemented in the center, and for 3 years, they were under dispensary observation at the place of residence. There were no deaths among patients undergoing surgery.

## Conclusion

Outcomes and prognosis in children suffering from intestinal obstruction are determined by the timely diagnosis of the disease, the organization of medical care, and the choice of the correct method of treatment. The use of minimally invasive technologies in the treatment of this pathology in laparoscopic surgery opens up great opportunities. The results obtained in children show that an integrated approach to anti-adhesion rehabilitation and prevention is of great importance, which can significantly reduce the number of relapses of the disease and ensure stable recovery of the digestive tract [21–27].

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