



## Comparative Evaluation of the Results of Treatment of Acute Adhesive Intestinal Obstruction in Children

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ABSTRACT

100 endo-surgical and 100 traditional surgery methods were performed, and it was established that a comparative analysis of laparoscopic and traditional methods of treatment showed that endoscopic adhesion has a significant advantage over traditional laparotomy.

**Keywords:**

nonsurgical, laparoscopic, adhesion, adhesions, relaparotomia, traumatism

### Introduction

Treatment of acute adhesive intestinal obstruction (KAP) in children is a complex task, as the causes and manifestations of the disease are extremely diverse. It should be noted that the condition of the abdominal cavity in patients with PSC is not always subordinated to any particular stereotype, so therapeutic tactics are selected individually, taking into account the severity of the disease and the state of the abdominal cavity. We consider it fundamentally important that for the development of treatment tactics, such factors as the severity of the disease, the severity of the intestinal paresis, the prevalence of the adhesion process and the frequency of relapses should play an important role. In the last decade in pediatric surgery, and in recent years and in general surgery, work has appeared in which laparoscopy has been successfully used for the diagnosis and treatment of KASC. However, these studies are few in number, and they assess the possibilities of the laparoscopic method in different ways [1,2,3,4]. Most

surgeons believe that the use of laparoscopy in these cases is not only impractical but also dangerous because of the possibility of iatrogenic damage to the intestine in conditions of paresis and adhesions in the abdominal cavity.

### Materials and research methods

To evaluate the effectiveness of the endoscopic method of diagnosis and treatment of NSCH, we compared the results of treatment in two groups of patients: the main (nonsurgical) and the comparison group ("open" - traditional). The main group included 100 patients who underwent endosurgical interventions. The control (comparative) group was also made of 100 patients who underwent "open" (traditional) surgical operations. The selection of 100 patients in both groups was performed blindly.

### Results and their discussion

When assessing the effectiveness of laparoscopy, we compared the nearest

postoperative period in these groups of patients.

For the characterization of the immediate postoperative period, the following criteria were used: the patient's general well-being and physical condition, the time of appearance of active peristalsis, determined by auscultation, the volume of stagnant contents in the stomach and the dynamics of its decrease, the time of appearance of the stool and the number of days spent by the patient in the hospital after operative treatment [5].

Laparoscopic adhesion in comparison with the traditional surgical intervention was characterized by minimal intraoperative blood loss, and a short duration of operations:  $41.6 \pm 13.4$  min versus  $85.8 \pm 11.7$  min with the traditional method of treatment. A careful analysis of our clinical observations has convincingly proved that the low traumatism of laparoscopic operations in comparison with traditional surgical interventions has a positive effect on the overall health and well-being of children. Minimal injury of the anterior abdominal wall and abdominal organs contributes to a more smooth course of the postoperative period. The pain syndrome in all patients was not expressed and was easily stopped by a single or double injection of analgesics. After laparoscopic operations, the pain syndrome persisted to the end of the first day in 92 patients (92%), on the second day - in 51 patients (51%), on the third - in 13 children (13%) and almost completely stopped on the fourth day.

In patients operated in the traditional way (control group), the pain syndrome persisted for a longer period: in all children, it was observed in the first two days, on the third day in 82 children (82%), on days 4-5 in 66 children (66%), and in some patients, the pain syndrome persisted even on the 5th-7th day.

Reduction of the pain syndrome contributed to the rapid recovery of physical activity of patients - patients started walking 1-4 days after laparoscopic surgery (on average - after 2.1 days). The motor activity of patients in the control group was significantly reduced. On the second day, only 6 patients (6%) started to walk, 59 patients (59%), the third - 18 children

(18%), and the remaining patients on the 5th-7th day after surgery.

The most distinct advantage of the laparoscopic technique was the rapid restoration of normal peristalsis of the intestines, a much less pronounced postoperative paresis. It should be noted that in none of our cases there has been an intubation of the small intestine.

When comparing the results obtained, it was found that in the main group, the stagnant contents of the stomach in a volume of  $24.3 \pm 1.6$  ml were revealed in the first hours after the operation in 14 patients (14%). With subsequent probing, stagnant contents were not detected, which allowed the initiation of early enteral feeding. In the control group, stagnant contents in the stomach in the first day were found in 100% of patients, in the second group - in 66 patients (66%), on the third - in 13 children (13%). The disappearance of stagnant contents in the stomach correlated with the timing of intestinal peristalsis. According to our data, the recovery of peristalsis in the main group occurred 2-3 days earlier than in the control group.

The appearance of stool in the main group was noted at a time  $2.2 \pm 0.6$  days after the operation, and in the control group -  $4.1 \pm 0.5$  days.

In connection with a more smooth course of the postoperative period, the duration of the stay of patients in the intensive care unit ( $1.7 \pm 0.8$  days) in the main group decreased, while in the control group the time spent in the intensive care unit was  $2.9 \pm 0.9$  days.

Significantly reduced the time of hospitalization after surgery in the main group ( $6.9 \pm 1.4$  days) compared with the control ( $16.2 \pm 1.9$  days).

Using the possibilities of laparoscopic surgery allowed to minimize the possibility of occurrence of postoperative complications, greatly facilitating the course of the postoperative period (Table 1).

**Table 1. Postoperative complications with PSC in the main and control groups**

Complications	Group of Patients	Total
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Relaparotomy	Basic n = 100	Control n = 100	
Event	1	5	6
Abscess of the small pelvis	0	4	4
Abdominal infiltrate	0	2	2
Suppuration of postoperative wound <sup>a</sup>	0	1	1
Ligature fistulas	1	6	7
Total:	1	4	5
Relaparotomy	3	22	25

As can be seen from the table, the total number of early postoperative intra-abdominal complications in the control group was more than 7 times higher than in the main group (22% and 3%, respectively). It is necessary to pay special attention to a high percentage of such severe complications as relaparotomy and intestinal events. Relaparotomy was performed with the relapse of the early acute adhesive intestinal obstruction (4 observations) and in connection with the development of purulent peritonitis due to insufficiency of gastrostomy, which was imposed for intubation of the small intestine (one observation).

It should also be pointed out that a high level of inflammatory complications from the postoperative wound and abdominal cavity (13%).

In the main group, the overall level of postoperative complications was only 3%. In one patient in the immediate postoperative period after laparoscopic separation of adhesions, progression of obstruction was noted, which was associated with an incorrect determination during the intervention of the site of obstruction. A laparotomy was performed, separation of adhesions, and the child recovered. Suppuration of the puncture site of the anterior abdominal wall in the umbilical region was noted in one patient. A ligature fistula also appeared in one observation.

## Conclusion

The use of laparoscopic technologies in the complex treatment of patients with the acute obstructive pulmonary disease has made it possible to reduce the costs of intensive care in the intensive care and surgical departments and has given a certain economic effect in comparison with the traditional method of treatment, primarily by improving the quality of surgical intervention and reducing the volume of intensive therapy, terms of postoperative treatment due to the low traumatic nature of the operation. Comparative analysis of laparoscopic and traditional methods of treatment showed that endoscopic adhesion has significant advantages over traditional laparotomy.

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