NEW APPROACHES TO THE PROBLEM OF DISEASES WITH PERITONES IN CHILDREN

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Abstract. This article analyzes the results of treatment of 76 patients aged 5-17 years who were referred to the Republican Scientific and Practical Center for Children's Minimally Invasive and Endoscopic Surgery with various degrees of peritoneal adhesions during 1997-2006. Of the patients, 49 were boys (64.5%) and 27 were girls (35.5%). First, the patients were analyzed in detail according to their age, type and extent of peritoneal adhesions. The methods of traditional laparotomy and videolaparoscopy performed on the patients were described in comparison with each other, and based on the results obtained, conclusions of clinical importance for practicing surgeons were drawn.

Key words: *peritoneal adhesion disease, laparotomy, videolaparoscopy, prevention.*

Introduction

The urgency of the problem. In recent years, due to the expansion of the scope of abdominal operations in children, the problem of peritoneal adhesions is becoming increasingly acute. Although in the 70s of the last century, relevant studies were conducted on the etiology, pathogenesis and clinic of peritoneal adhesions that occur after abdominal organ operations, the role of fibrin, trauma, the immune system and other factors in the process of adhesion formation was sufficiently studied and significant achievements were made, the problem has not yet been definitively resolved and requires further scientific research. To date, the reasons for the high probability of developing peritoneal adhesions in a certain percentage of patients have not been fully studied and explained, and existing theories do not allow for their full understanding. Also, the symptom complex of developing adhesive processes has not been clearly systematized. These are only theoretical aspects of the problem. If we turn to practical aspects, then doctors in practice still do not have the opportunity to completely prevent this terrible complication, or to eliminate existing adhesions using non-traumatic or minimally traumatic methods. Analysis of scientific and medical literature and our scientific experience in this regard show that 18.0-24.0% of those who have undergone abdominal operations develop one degree or another of peritoneal adhesions after a certain period of time.

The purpose of our research. It consists of analyzing the causes of peritoneal adhesions and comparing the results of traditional laparotomy with the results of laparoscopy.

Material and methods. During 2017-2024, 76 patients aged 5-17 years visited our center. 49 of the patients were boys (64.5%) and 27 were girls (35.5%).

The distribution of patients according to age and treatment procedures is reflected in the table below.

Distribution of patients admitted to the RBKIEKHIAM with various degrees of peritoneal adhesions according to disease complications and patient age

Age of patients	Conservative therapy		Operation		Total	
	absolute number	%	absolute number	%	absolute number	%
1–3 years old	2	4,8	2	5,8	4	5,3
3–7 years old	6	14,3	2	5,8	8	10,5
7–10 years old	14	33,3	12	35,2	26	34,2
10–14 years old	20	47,6	18	52,9	38	50
Total	42	55	34	45	76	100

Material and methods of research. As can be seen from the table, 4 patients (5.3%) were aged 1-3, 8 (10.5%) were aged 3-7, 26 (34.2%) were aged 7-10, and finally 38 (50.0%) were aged 10–15.

All patients came to the clinic with complaints of abdominal pain, diarrhea, nausea, vomiting, abdominal distension, and worsening of the general condition. In 31 patients (40.7%), the body temperature rose to subfebrile levels, in 3 (3.9%) to febrile and higher levels. All patients had previously undergone surgery, and in 86.0% of them, the surgical procedure was performed due to acute appendicitis. Of these, 27 patients (35.5%) in this group underwent surgery for catarrhal appendicitis. Although the analysis of scientific and medical literature (V.S. Topuzov, 1970; Yu.F. Isakov 1988 and others) suggests that adhesive diseases are almost non-existent after planned laparotomy, in our observations, in 1 patient (1.3%) adhesive intestinal obstruction developed after planned removal of splenic echinococci. Thus, we must admit that the occurrence of intra-abdominal adhesions is caused by many factors.

In the initial stages of our studies, we used the description proposed by G.A. Bairov in 1965. According to it, depending on the time of development of peritoneal adhesions after the first operation, early and late periods of peritoneal adhesions are distinguished. Therefore, 45 patients (59%) were hospitalized with early adhesions within 1-14 weeks after the first operation. In 38 patients (84.4%) the primary operation was observed with destructive forms of acute appendicitis, and in 17 patients (44.7%) of this group of patients, phlegmonous appendicitis, gangrenous appendicitis, and finally gangrenous-perforative appendicitis were detected in 12 (31.6%) and 9 (23.7%) of the patients. Complications with local purulent peritonitis were noted in 6 patients, diffuse peritonitis in 4, and finally purulent disseminated peritonitis in 2. One of the patients was admitted to our clinic 17 days after a laparotomy with a closed injury to the anterior abdominal wall and organs with a diagnosis of adhesive intestinal obstruction. Another patient was also brought to our center with signs of adhesive intestinal obstruction that developed after a laparotomy in a district hospital 5 days earlier. 5 patients (11.0%) of this group were brought with adhesive peritoneal disease after a surgical operation for acute catarrhal appendicitis. 31 patients (40.0%) were admitted with late-onset intestinal obstruction, of which 4 (12.0%) had symptoms of intestinal obstruction resolved conservatively, and the remaining patients had to undergo relaparotomy surgery.

All patients had pain syndrome of varying intensity, regardless of duration. In particular, in 57 patients (75.0%) the pain was of an episodic nature, in 19 (25.0%) there were constant, similar pains, and in 2 of these patients there were simultaneous episodes of episodic pains. All patients had abdominal distension, diarrhea, and one or more vomiting.

All patients admitted to the center underwent abdominal radiography in the vertical position. It should be noted that only 67 patients (88.1%) had Kloiber's cups, which are characteristic of acute intestinal obstruction, and the remaining 9 (11.8%) had only intestinal pneumatosis. Therefore, it can be concluded that this symptom complex, which was once considered to be of great clinical importance, is not pathognomonic for intestinal obstruction.

Nowadays, the diagnosis of abdominal pathologies is greatly facilitated by ultrasound diagnostics. The dilation of the intestinal lumen, pendulum-like oscillations of intestinal contents, the absence of peristaltic waves, and in some cases the detection of free fluid in the abdominal cavity are of great importance in clarifying the diagnosis of intestinal obstruction and are best detected by ultrasound.

Results. After the diagnosis was clarified, a complex of conservative measures was carried out in all patients. A set of measures was carried out, proposed by Yu.F. Isakov in 1988, including a regular gastric tube instillation and washing every 2-3 hours, bilateral paranephral blockade, stimulation of the intestine with intravenous hypertonic solutions, administration of Prozerin according to age and body weight, and siphon enemas 30-40 minutes after intestinal stimulation. However, as the author emphasizes, these measures must be carried out in a certain order, otherwise it is obvious that they will not give the expected results. During the discussion of the history of the disease, in about 10.0% of cases, our doctors did not pay attention to their sequence. In 45 of our patients (59.2%) positive changes were achieved within 8-12 hours. This group of patients underwent infusion-detoxification therapy and ultrasound therapy of the anterior abdominal wall for 6-7 days, followed by iontophoresis with potassium iodide for 20-25 sessions. Since these iontophoresis measures can prevent relapses by up to 3 courses over a year, we recommended that they be administered in this way on an outpatient basis.

In our center, we use the classification proposed by R.J. Zhenchevsky in 1989. This description is based on the clinical and morphological symptom complex of the disease, which has the following manifestations: pain attacks accompanied by organ dysfunction without signs of intestinal obstruction; acute adhesive dynamic intestinal obstruction (first attack); recurrent adhesive intestinal obstruc-

tion (repeated attacks); obstructive adhesive intestinal obstruction with impaired blood circulation in the intestinal loops and intestinal obstruction; strangulation intestinal obstruction. Based on this classification, it is easier to choose a rational treatment strategy for patients, which allows reducing the time for preparation for surgery if necessary. Urgent surgical intervention was performed in 34 patients (44.7%). In 19 of 34 patients (55.8%), the surgical procedure was performed in the form of a traditional laparotomy, and in 15 (44.2%) it was performed using the videolaparoscopy technique. Since the adhesive processes were not extensive in 28 of 34 patients (82.3%) with acute intestinal obstruction, the operation was completed with simple excision of the scars and leaving an intubator in the intestine. Depending on the restoration of intestinal function, we removed the intubator on the 3-4th day. Taking into account the preservation of intestinal paresis and the presence of gross organic changes in the intestinal walls in three patients, we completed the operations with the placement of a hanging ileostomy. Two of the ileostomies closed independently over time, and in one patient, after 3 months, we performed an operation to close the ileostomy outside the peritoneum. In three patients, necrosis of the intestinal lumen was noted as a result of strangulation, so we resected the affected part of the intestine and performed a three-way anastomosis. In two of the patients, congenital adhesions and adhesions of the large intestine were detected during the operation in the ileocecal angle. They were eliminated by a simple method.

In order to prevent recurrence of intra-abdominal adhesions, until 1999, 250 mg of hydrocortisone was injected into the peritoneal cavity before the operation, and since 2005, fibrinolytic solution has been injected into the peritoneal cavity according to the scheme used in the center. (Fibrinolitic Enzymes composition: fibrinolysin 20000 IU, heparin 2000 IU, hydrocortisone 125 mg, 0.25%-50.0 ml novocaine solution) We have introduced it into practice. For 2 days after the operation, fibrinolytic solutions were administered through a microirrigator left in the abdominal cavity. As soon as peristaltic sounds appeared in the intestines, the drainage tubes were removed and physiotherapy courses were started. Each subsequent session was extended from 5 minutes to 45 minutes. All patients were recommended 10-16 sessions. Patients were recommended to undergo physiotherapy according to G.A. Bairov during the recovery period.

7 of our patients (36.8%) returned to the clinic due to the recurrence of peritoneal adhesions after laparotomy. Conservative measures were effective in them. One patient underwent laparotomy for peritoneal adhesions and returned to our center 3 times. In 2 patients, after the initial laparotomy, adhesions developed to the extent that conservative therapy was ineffective, and because of the ineffectiveness of 5 hours of conservative treatment, the adhesion intestinal obstruction was eliminated by videolaparoscopic method. None of the patients who underwent video-laparoscopic procedures and received a fibrinolytic solution into the abdominal cavity according to the scheme (FLE composition: fibrinolysin 20,000 units, heparin 2000 units, hydrocortisone 125 mg, 0.25%-50.0 ml novocaine solution) had recurrence of peritoneal adhesions.

Conclusion. Thus, we can draw the following conclusions from our scientific researches; The results and prognosis of treatment for children with ileus are determined by timely diagnosis of the disease, organization of medical care, and selection of the correct treatment method.Laparoscopic surgery may open up the prospect of a minimally invasive approach to the treatment of this pathology. An integrated approach to anti-adhesion rehabilitation and prevention is of great importance in the treatment of adhesions in children, which allows to significantly reduce the recurrence rate of the disease and ensure the permanent restoration of the digestive tract.

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