

## Problems of Diagnostics, Prevention and Surgical Tactics of Treatment of Adhesive - Intestinal Obstruction

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**Annotation:** Adhesive disease of the abdominal cavity, complicated by acute intestinal obstruction, is one of the most difficult diseases of the abdominal cavity in terms of treatment and diagnosis. The relevance of the problem is determined by the difficulty of prevention and treatment of the studied complication, the widespread increase in surgical activity, the expansion of indications for performing operations of extended volume and combined interventions in diseases of the abdominal cavity and retroperitoneal space. An analysis of the literature shows that, in terms of the frequency of complications and deaths, acute intestinal obstruction occupies one of the first places among the urgent pathology of the abdominal cavity.

Rising in the number of patients, the severity of the course and recurrent nature of the disease, the difficulties of diagnosis, unsatisfactory results of treatment of patients with adhesive intestinal obstruction, as well as a high rate of disability indicate the relevance of the chosen topic

**Keywords:** laparoscopy, laparotomy, lysis of adhesions, intestinal obstruction, adhesive disease.

Rapid development of surgical science and an increase in the number of operations in the abdominal organs contributed to an increase in the number of patients with adhesive-intestinal obstruction (AIO).<sup>1</sup>

In recent years, the incidence of AIO is 60-80% for other types of intestinal obstruction, with a mortality rate of 10-50%. The main reasons contributing to this are late diagnosis, untimely surgery, which contribute to the development of postoperative complications.<sup>2</sup>

According to the literature, there are no reliable methods for preventing postoperative adhesions.<sup>3</sup> Therefore, timely diagnosis, prevention and treatment of acute AIO is an urgent and far unsolved problem of clinical surgery.

<sup>1</sup> Искандар Шоназаров; Сардор Муродуллаев; Суннатиллохон Камолиддинов; Адхам Ахмедов; Давлатшоҳ Джалолов. "ДИАГНОСТИКА И ЛЕЧЕНИЕ СПАЕЧНОЙ ТОНКОКИШЕЧНОЙ НЕПРОХОДИМОСТИ ЛАПАРОСКОПИЧЕСКИМ МЕТОДОМ". Европейский журнал молекулярной и клинической медицины, 7, 3, 2020, 3192-3198.

<sup>2</sup> Цхай Б. В. и др. ЭНДОВИДЕОЛАПАРОСКОПИЯ В ДИАГНОСТИКЕ И ЛЕЧЕНИИ ОСТРОЙ КИШЕЧНОЙ НЕПРОХОДИМОСТИ // АА Турмухамбетова. – 2020. – №. 2. – С. 72.

<sup>3</sup> Krielen, P., Di Saverio, S., Ten Broek, R., Renzi, C., Zago, M., Popivanov, G., ... & Cirocchi, R. (2020). Лапароскопический и открытый доступ при спаечной непроходимости тонкой кишки, систематический обзор и метаанализ краткосрочных результатов. Журнал травматологии и неотложной хирургии, 88(6), 866-874.

**The purpose of the research:** Improving methods of prevention and surgical treatment of acute adhesive intestinal obstruction.

**Materials and methods of the research:** We have studied the results of treatment of 84 patients who were in the inpatient treatment of the surgical Department of the Samarkand medical Association for the period 2009-2019.

The distribution of patients by gender showed that the overwhelming number of patients were female – 67% and men were 33%.

The age distribution of patients ranged widely from 20 to 78 years. Of these, they were employable age, which is of social significance.

Among the sick urban population were 54 (64.3%), rural residents were 30 (35.7%). The main causes of acute AIO in 97-98% of patients were previously undergone surgical treatment in the abdominal cavity, and about 2% of patients were found to have various inflammatory processes.

The primary causes of the adhesive process were the following acute surgical diseases of the abdominal cavity: acute appendicitis, abdominal injuries, perforation of gastric and duodenal ulcers, acute destructive cholecystitis, gynecological diseases (ectopic pregnancy, rupture of an ovarian cyst).<sup>4</sup>

AIO was observed in 80% of cases in young people of employable age. Most of them were female. It should be noted that acute AIO during the primary operation, destructive changes or damage to organs with peritonitis were detected. After the operation, the abdominal cavity was drained. According to our data, abdominal drainage also contributed to the formation of adhesions. All patients were drained of the abdominal cavity with one, two, three and four drains.

The following operations were performed in our patients: appendectomy – in 33 (39.2%), suturing of small and large bowel wounds – in 18 (21.4%), resection of small and large intestines – in 9 (10.7%), suturing of perforation of gastric and duodenal ulcers – in 9 (10.7%), cholecystectomy – in 7 (8.3%), gynecological operations – cystectomy, removal of the tube – in 8 (9.5%) patients.

Infection of the abdominal cavity plays an important role in the development of the abdominal adhesive process. From the anamnesis of the studied patients, it was revealed that 39 (46.4%) patients had one operation, 21 (25%) had two operations, 14 (16.6%) had three operations, and 10 (12%) had four operations.

With an obvious acute AIO clinic, 37.8% of patients were admitted from the last operation to hospital admission in a year, 42.2% in 3-5 years, 12% in 6-10 years, and 8% in over 11 years.

Diagnosis of acute AIO was based on the general clinical manifestation, laboratory, clinical and radiological data, ultrasound, endoscopic research data and irrigation, and, if necessary, computer tomography. We used contrast x-ray studies of the gastrointestinal tract. Especially in difficult cases, it is necessary to use TRANS-probe contrast of the gastrointestinal tract.<sup>5</sup> All these studies were conducted according to the standard, i.e., according to the algorithm for diagnosing acute surgical diseases of the abdominal cavity. To determine the clinical and functional conditions of patients with AIO, the total amount of protein, urea, creatinine, residual nitrogen, blood sugar, total bilirubin and its fraction, blood enzymes (Alt, Ast), and the amount of electrolytes – K<sup>+</sup> and Na<sup>+</sup> in blood plasma were determined. According to the testimony of special methods have been

<sup>4</sup> Håkanson, C. A., Fredriksson, F., & Lilja, H. E. (2020). Спаечная тонкокишечная непроходимость после аппендэктомии у детей - лапароскопический по сравнению с открытым доступом. Журнал детской хирургии.

<sup>5</sup> Кригер А. Г. Технические аспекты операций при острой спаечной кишечной непроходимости //Хирургия. Журнал им. НИ Пирогова. – 2017. – №. 4. – С. 81-84.

used (ultrasound, EGD, CT) and diagnostic laparoscopy. The most difficult is the early diagnosis of acute adhesive-intestinal obstruction.<sup>6</sup>

When determining AIO, an abdominal x-ray examination is important. When the picture of acute AIO is unclear, we used contrast x-ray studies of the gastrointestinal tract. Especially in difficult cases, it is necessary to use TRANS-probe contrast of the gastrointestinal tract. They were allowed to drink a liquid suspension of barium sulfate 250 ml and monitor the progress of the contrast agent in the gastrointestinal tract. Radiography was performed at 3-hour intervals. In this study, the following x – ray symptoms are revealed: an expansion above the level of the obstacle with an accumulation of liquid and gas, contrasting transverse edematous folds of the Kerkring.<sup>7,8</sup> In addition is determined by the slow passage of barium through the small intestine and contrasting Kloyber`s bowl. Especially in difficult cases, TRANS-probe contrast of the gastrointestinal tract was used. To do this, a nasogastral probe at the tip of a metal ball installed through the nasal passage is passed into the duodenum and followed to the level of the tracetum ligament. A 15% barium suspension of 250 ml cooled to 10-12°C was introduced through the probe. Dynamic monitoring of the progress of the contrast agent for 2-3 hours was carried out, and it was possible to determine the location of the obstacle.<sup>9,10</sup>

With ultrasound examination of the abdominal cavity you can find expanded and dormant bowel loops at the level of the obstacle.

**The results of the research and their discussion.** Early diagnosis of acute AIO was established in 75 (89%) patients (within 3 hours of admission to the hospital) and late in 9 (11%) due to the erased and atypical clinical picture of the disease (within 4-10 hours).

Taking into account the clinical and radiological data, patients with acute AIO were divided into the following 3 stages according to the proposed classification by V. S. Sovelev (1996): stage I (initial) - 31 (37%) patients, stage II – 38 (45%) and stage III - 15 (18%) patients.

All patients with AIO were divided into 2 study groups: the first (control) group included 30 patients who received conventional or traditional treatment. The second (main) group consisted of 54 patients who were treated using an improved method using enterosorption and a specially developed mixture with the addition of mesogel was used to prevent the adhesive process. Primary surgical interventions were performed from the traditional median laparotomy approach.

Indications for performing emergency surgical interventions were the failure of conservative treatment or the presence of acute peritonitis. Conservative therapy performed for 2 hours was preoperative preparation.

Traditional treatment of the control group of patients with AIO (31 patients) consisted of elimination of acute AIO and correction of homeostasis disorders: correction of hydroionic balance and acid-base state and detoxification therapy, stimulation of intestinal peristalsis, decompression of the gastrointestinal tract with a nasogastric probe, paranephral blockade, performing a siphon

<sup>6</sup> Сайфулло Абдуллаев, Абдухomid Тоиров, Адхам Ахмедов, Давлатшоҳ Джалолов. (2020). ПРОБЛЕМЫ ХИРУРГИЧЕСКОЙ ТАКТИКИ ЛЕЧЕНИЯ СИНДРОМА ДИАБЕТИЧЕСКОЙ СТОПЫ. Международный журнал передовых наук и технологий, 29(05), 1836 - 1838. Извлечено из <http://sercsc.org/journals/index.php/IJAST/article/view/10340>

<sup>7</sup> Фудзи К. и др. Спаечная кишечная непроходимость повышает риск перфорации кишечника у пациентов, находящихся на перитонеальном диализе: клинический случай // ВМС нефрология. - 2018. - Том 19. - № 1. - с. 153.

<sup>8</sup> Лоренцен Л. и др. Рецидив после оперативного лечения спаечной тонкокишечной непроходимости // журнал желудочно-кишечной хирургии. - 2018. - Т. 22. - № 2. - с. 329-334.

<sup>9</sup> Искандар Шоназаров; Джурабек Карабаев; Шухрат Ахмедов; Адхам Ахмедов; Давлатшоҳ Джалолов. "АНАЛИЗ РЕЗУЛЬТАТОВ ХИРУРГИЧЕСКОЙ ТАКТИКИ И ЛЕЧЕНИЯ БОЛЬНЫХ ОСТРЫМ НЕКРОТИЧЕСКИМ ПАНКРЕАТИТОМ". Европейский журнал молекулярной и клинической медицины, 7, 3, 2020, 3130-3135.

<sup>10</sup> Каббаш М. М. и др. Хирургическое вмешательство при спаечной кишечной непроходимости // египетский журнал Госпитальной медицины. - 2019. - том 77. - № 6. - С. 5954-5957.

enema. The criterion for the effectiveness of conservative therapy was considered to be the elimination of acute AIO.

In addition to the above-mentioned complex therapy, these patients during surgery provided for: elimination of the causes of acute AIO, novocaine blockade of the mesentery root of the small intestine, transnasal intubation of the small intestine and, in the presence of peritonitis, drainage of the abdominal cavity.

In contrast to the traditional treatment of the control group of patients, 54 patients of the second (main) group of acute AIO were treated using an improved method:

- hydrocortisone 125 mg + destinaiton 2000 IU, kanamycin 3 g + mesogel 450 ml for the prevention of adhesion formation;
- introduction to the nasogastric tube drugs with antihypoxic and antioxidant properties (allopurinol), for the correction of microcirculatory disorders in the intestinal wall;
- using of enterosorbition for reduction of endogenous intoxication;
- through hematomas intubation of the small intestine by Zhitnyuk;
- during transrectal intubation of the large intestine to the ileocecal angle. In unspecified cases – ileostomy (strictly according to indications, ileostomy is formed);
- intubation of the small intestine with a probe Mallory-Abbott.

Patients of both groups were compared by age, gender, severity of the condition and the nature of surgical interventions performed.

When comparing pre-operative clinical signs, 84.5% of cases during surgery revealed signs were comparable. In our observations, in 4 cases, patients aged over 60 years before the operation, the clinic of spilled peritonitis was detected, and during the operation, the phenomena of small bowel necrosis were detected.

It should be especially noted in the presence of various adhesions of the abdominal cavity with acute AIO, an atypical course of the disease was detected in 14.5% of patients. In such cases, additional research metrics are used.

If the duration of acute AIO lasts for a long time, the water-electrolyte metabolism is disturbed more deeply, naturally this will lead to multiple organ failure. Therefore, in acute AIO, early diagnosis can lead to good results.

All patients in the control group with acute AIO during primary operations along with destructive processes of internal organs or damage to hollow organs revealed the presence of peritonitis of varying degrees of prevalence.

According to the urgency of their performance, we divide surgical operations into emergency (operations performed immediately or for the first time) and urgent (operations performed in the next few days after admission).

The vast majority of patients were operated on emergency (89%) indications, urgent operations accounted for only 11%.

The data once again show that in acute SCN, early diagnosis and emergency operations are required.

The volume of surgery in both groups of patients depends on the type of acute SCN and detected pathomorphological changes in the intestine. The largest number of cases was performed by vicerolysis – dissection and separation of adhesions in 67%, “end to end” or “side-to-side” application in 19%, ileostomy-14% of patients, with diffuse peritonitis and in 2 cases, the application of waste anastomosis.

Adhesion via laparotomy access has been the method of choice for treatment of adhesive-

intestinal obstruction until recent years. Unfortunately, after laparotomy in 30-70% of patients, they were characterized by the formation of adhesions and patients were re-operated with recurrent intestinal obstruction.

In recent years, we have started using laparoscopic access, which is less dangerous in the formation of intra-abdominal adhesions.

In the main group of patients, homeostasis correction, detoxification therapy, gastrointestinal stimulation, and intestinal decompression were performed using a new and improved method.

After performing the main stage of surgery, transnasal intubation of the small intestine and, if necessary, transrectal intubation of the large intestine were performed together with the anesthesiologist.

The probe was in the intestines from 2 to 7 days, we remove it after the restoration of peristalsis and the appearance of feces.

Our research has shown that one of the leading syndromes in the pathogenesis of acute AIO is endogenous intoxication syndrome.

The studies conducted to assess the severity of endotoxemia in patients of the control group, which are indicators of the acute phase of inflammation and intoxication, we observed significant changes in the toxic phase, slightly less in the reactive phase, and even less in the absence of peritonitis. In acute diffuse peritonitis on the basis of acute AIO, the indicators of the leukocyte index of intoxication increased by 2-2.5 times.

Based on these data, we used an improved treatment method in the treatment of the main group of patients (54). This treatment method includes mesogel (sodium carboxymethyl cellulose gel). Mesogel is also used as a prevention of adhesions. Mesogel in the amount of 2.5 ml/kg is introduced into the abdominal cavity at the end of the operation and within 2-3 days through a drainage tube. Patients in this group were injected with antioxidants and antihypoxants for 2-3 days through a nasogastric tube to improve microcirculation in the intestinal walls, and enterosorbites were introduced through transrenal drains.

The analysis performed after surgical complications showed that in the control group, complications were observed in 11 (36.6%) of 30 patients. It should be noted that out of 30 patients in the control group, 4 patients went to the clinic for acute AIO during the day after the operation, 3 of them were re-formed with the same pathology. Postoperative mortality in the control group of patients with acute AIO was 13.3%, 4 patients died.

Postoperative complications were observed in 9 (16.6%) patients in the main group of patients who were treated using an improved method. The causes of death in the main group of patients were cardiovascular and liver failure (2), as well as PE (1), which was 5.5%.

The use of the developed improved tactics for the treatment of acute AIO has reduced the mortality rate by 2 times.

**Conclusions:** Thus, in the treatment of adhesive-intestinal obstruction, the introduction of methods of early diagnosis and early surgical interventions in combination with the introduction of an anti-adhesive mixture into the abdominal cavity with intubation of the gastrointestinal tract significantly reduce postoperative complications and mortality.

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