TASHKENT MEDICAL ACADEMY

# Journal of Educational and Scientific Medicine

Issue 5 | 2024

OAK.uz

Google Scholar

ISSN: 2181-3175

Journal of Education & Scientific Medicine

ISSN 2181-3175

Tashkent Medical Academy

Research Article

Open © Access

# Diagnosis and Treatment of Acute Adhesive Intestinal Obstruction

**D.A. Sapaev, A.A. Eshchanov[1]**

***ABSTRACT***

*This article is devoted to the search for ways to improve the diagnosis and treatment of acute adhesive intestinal obstruction. Based on the studies carried out, we proved that to improve the results of surgical treatment of acute adhesive intestinal obstruction, it is necessary to reduce the time of delivery of patients to the hospital, to increase the use of X-ray and endoscopic methods of examination, to improve the technique of surgical and anaesthetic aid. Laparoscopic adhesiolysis in acute adhesive intestinal obstruction makes it possible to activate patients early, reduce the duration of inpatient treatment and the need for medications, and reduce the risk of developing abdominal adhesions. Laparoscopic adhesiolysis should be performed according to strict indications by experienced surgeons, with careful observance of all the technical details of the intervention. The main risk factors for lethal outcomes in acute adhesive intestinal obstruction are late surgical intervention and postoperative complications due to both the severity of the patient's condition and the imperfection of surgical technique.*

***Keywords:*** *acute intestinal obstruction, abdominal adhesions, improvement of diagnostic and treatment methods*

## INTRODUCTION

Back in the second half of the last century, Y.M. Dederer wrote that "acute intestinal obstruction has earned a sad reputation as a very severe disease, difficult to diagnose and unfavourable in terms of the outcomes." It remains one of the most difficult problems in emergency abdominal surgery. It is distinguished by the severity and rapidity of the development of pathophysiological changes in strangulation forms, the variety of clinical manifestations and the associated difficulties of diagnosis, tactical and technical difficulties of surgical treatment and prevention.

Acute intestinal obstruction accounts for 3.3% to 10% of all acute surgical diseases, its mortality rate is kept at the level of 15%, and the recovery of patients' ability to work occurs only in 45 - 50% of cases [1].

If, in the 40s of the last century, the main causes of acute intestinal obstruction were volvulus, malignancy and tumours, then since the 50s of the 20th century, the first place in frequency is occupied by acute adhesive intestinal obstruction [2].

Tumors most often obstruct the large intestine, the adhesion process in the abdominal cavity mainly affects the small intestine [3].

[1] ***Contact for correspondence:*** Khorezm Regional Branch of the Republican Scientific and Practical Medical Center for Emergency Medical Care of the Ministry of Health of the Republic of Uzbekistan, Urgench, Khorezm region, Uzbekistan. E-mail: coloproctology@inbox.ru

René Leriche called postoperative adhesions "a terrible scourge of abdominal surgery." The proportion of patients with adhesive intestinal obstruction reaches 60 - 90% of all cases of small intestinal ileus [4].

The disease occurs in all age groups, including children and the elderly. Males predominate among children [5]. Among people of working age, women are predominant [6].

The results of treatment of patients with acute adhesive intestinal obstruction over the past decade do not have a steady tendency to improve. Postoperative mortality ranges from 7 to 18%, and the percentage of complications ranges from 12 to 24% [7].

The highest mortality is noted in strangulation obstruction with intestinal necrosis (16 - 38%), advanced obstruction in elderly people (14 - 28%), with early postoperative obstruction (12-34%). Among the reasons for high mortality, many authors point to late admission of patients, old age, difficulties in diagnosis, and other factors [8].

After repeated laparotomies, the frequency of abdominal adhesions and their complications increases. According to several authors, adhesions develop in 10.4% of patients after one laparotomy and in 93% of cases after repeated laparotomy [9].

In recent decades, the understanding of the pathogenesis of acute intestinal obstruction has been deepening, new methods of diagnosis and treatment have been mastered, and methods of anaesthesia support and extracorporeal detoxification have been improved [10].

The issues of diagnosis and treatment of acute intestinal obstruction have been widely discussed at scientific symposia and conferences, on the pages of periodicals, monographs and manuals, but the problem continues to excite the minds of leading specialists in the field of surgery. In this regard, there is an urgent need to conduct an in-depth analysis of the causes of adverse outcomes of treatment of acute intestinal obstruction, to critically evaluate the existing therapeutic and diagnostic tactics to increase its effectiveness and achieve better results.

Thus, the relevance and social significance of the problem of acute adhesive intestinal obstruction is determined by the increase in the number of patients, the severity and recurrent nature of the disease, the difficulties of its diagnosis, unsatisfactory short-term and long-term results of treatment, the large expenditure of efforts and means of medical and social security, and the high percentage of disability of patients.

The purpose of this study was to develop a set of treatment, diagnostic and organizational measures that contribute to improving the results of treatment of acute adhesive intestinal obstruction.

## MATERIAL AND METHODS

The case histories of 120 patients with acute intestinal obstruction who died in surgical hospitals of the Khorezm branch of the Republican Scientific and Practical Medical Center for Emergency Medical Care of the Ministry of Health of the Republic of Uzbekistan for the period from 2010 to 2023 were studied. The main objective of this study was to identify the causes of death and risk factors for death. The results of clinical and instrumental examination and treatment of 280 patients with acute adhesive intestinal obstruction hospitalised in the city clinical hospital of the city of Urgench, Khorezm region over the past 20 years (2004 - 2023), of which 148 people were operated on, laparoscopic adhesiolysis was performed in 22 patients.

Long-term results ranging from 6 months to 5 years were also analysed in all patients who underwent laparoscopic surgery and in 25 patients from the comparison group similar in sex, age, and age of the disease.

To determine the causative agents of wound complications and ways of infection of wounds, the results of microbiological studies of discharge from wounds and swabs, as well as the sensitivity of microflora to antibiotics, were studied.

In the course of the work, the following research methods were used: clinical, laboratory, radiological, microbiological, laparoscopic, and statistical. All patients underwent plain radiography of the abdominal cavity and, if indicated, radiopaque studies of the gastrointestinal tract (Schwartz test). The patients were given 150 - 200 ml of liquid suspension of barium sulfate to drink, and an X-ray was performed, followed by control of the passage of radiopaque mass after 2, 4 and 6 hours.

Surgical interventions were performed under combined endotracheal anaesthesia with muscle relaxants. Laparotomy interventions were performed with a standard general surgical set of instruments.

Endovideosurgical operations were performed using standard endovideosurgical equipment: a laparoscope with 30° optics, a video system equipped with a video camera, a video tape recorder, a monitor, an illuminator, a 200 W electrocoagulator and an aspiration and irrigation system. The supply of carbon dioxide and the control of the pneumoperitoneum was carried out by an electronic insufflator.

Various modifications of endoscopic instruments with a length of 35 cm were used, performing the function of gripping, holding, coagulating, and dissecting tissues.

The long-term results of laparoscopic adhesiolysis in the control group and laparotomies in the comparison group were studied by questionnaire survey and clinical and radiological examination of patients in inpatient conditions.

Statistical processing of the study results was carried out using the Primer of Biostatistics Version 4.03 application package by Stanton A. Glantz. Descriptive and evidence-based statistical techniques are used in the work. For categorical variables, the exact two-way Fisher test was used, depending on whether the conditions for their applicability were met.

## RESULTS AND DISCUSSION

To study the causes and risk factors of mortality in acute adhesive intestinal obstruction and to determine the ways of their prevention, the material of 120 deaths in acute intestinal obstruction in all surgical hospitals of the Khorezm region for 10 years was analyzed.

The average age of the deceased men was 64.6±13.5 years, women - 62.7±16.4 years. It was revealed that the direct causes of death of patients were peritonitis and increasing endotoxicosis (46.7%), postoperative purulent-septic complications (30.0%), surgical complications (6.6%), complications of concomitant diseases (16.7%). Risk factors for mortality in patients with acute intestinal obstruction are diverse, often interrelated and combined. Nevertheless, when analyzing each case, it is possible to identify the leading factor that had a decisive impact on the unfavourable outcome. They were divided into 7 groups. The first 5 factors were the reason for late operations or even the impossibility of performing them due to the severity of the patient's condition.

In the study group, there was a decrease in the average bed-day in all groups of patients, significantly significant among the operated women. This was due to the reduction of the postoperative period. This was facilitated by the introduction of laparoscopic adhesiolysis and a decrease in the number of postoperative complications.

Of the 148 patients operated on for acute adhesive intestinal obstruction over 12 years, 6 (4.0%) died. In the control group of 54 operated patients, three patients died (5.6%), and in the main group - 3 out of 94 (3.2%). In the first group, the causes of death were incompetence of the interintestinal anastomosis, diffuse peritonitis due to decubitus faecal calculus, and multiple organ failure. In the second group of deceased patients, these were intraabdominal bleeding against the background of disseminated intravascular coagulation syndrome, multiple organ failure, and acute myocardial infarction. In case of inconsistency of intestinal sutures with the formation of intestinal fistulas in open operations for acute adhesive intestinal obstruction, the company's aspiration system was used.

A statistically significant decrease in the number of postoperative complications in the second period of work by 2.3 times is explained by the improvement of surgical technique, the use of antibacterial prophylaxis of suppuration and the introduction of endoscopic adhesiolysis.

To build a rational system for the prevention and treatment of wound complications, their frequency and nature in emergency and planned operations were studied. The frequency of their detection during the hospital stay reached 3.6% in emergency and 1.4% in planned interventions. Over the past decade, there has been a decrease in their frequency to 1.7 and 0.7% in emergency and planned operations, respectively, which can be associated with antibiotic prophylaxis, improvement of surgical techniques and the introduction of laparoscopic and minimally invasive operations. It was revealed that the most important causative agents of wound complications and purulent diseases are S. aureus, Escherichia coli, Bacteroides, and gram-negative bacilli.

A study of the microbial landscape of the surgical department (1168 positive samples) shows that the beds of intensive care units, tables for medicines and instruments, overalls and hands of personnel are in the first place in terms of contamination (from 11 to 22% of positive samples). In these washes, epidermal and saprophytic staphylococci prevail - 49.9 and 20.0%, respectively. Gram-negative bacteria are more likely to cause widespread and generalized forms of infection.

Bacteriological studies confirm the presence of numerous stable pathways of endogenous and exogenous infection of wounds in the medical institution.

Preoperative antibiotic prophylaxis from the moment the patient is admitted to the hospital can reduce the number of purulent-septic complications.

The prescription of cephalosporins of the 2nd and 3rd generation, new aminoglycosides and fluoroquinolones is quite effective against staphylococci and Escherichia coli. Antibiotic therapy should be carried out taking into account the specific sanitary and epidemiological situation in the medical institution.

Great importance in the prevention of postoperative suppuration of wounds is attached to surgical technique (compliance with asepsis and antiseptics, careful attitude to tissues, thorough hemostasis).

Since fatal complications and errors for the patient can occur at all stages of medical care, a comprehensive

system of measures to reduce mortality should cover all aspects of the treatment and diagnostic process.

## CONCLUSION

The main risk factors for lethal outcomes in acute adhesive intestinal obstruction are late admission of patients to the hospital (25.6%), delayed operations due to diagnostic difficulties or overestimation of the effectiveness of conservative therapy (15.6%), technical errors leading to postoperative complications (44.4%). Laparoscopic adhesiolysis in acute adhesive intestinal obstruction can be performed in patients at the initial stage of the disease, who do not have pronounced flatulence, severe intoxication, repeated operations and diffuse peritonitis in anamnesis. It makes it possible to activate patients early, reduce their hospital stay to an average of 5.8 days, and reduce the risk of developing abdominal adhesions in the future.

Laparoscopic intervention for acute adhesive intestinal obstruction makes it possible to assess the nature and extent of the adhesions in the abdominal cavity, identify the cause of intestinal obstruction and, in many cases, eliminate it. To reduce the number of diagnostic and tactical errors in acute adhesive intestinal obstruction, it is necessary to use X-ray and laparoscopic methods of examination of patients. The introduction of the algorithm of the therapeutic and diagnostic program for acute adhesive intestinal obstruction made it possible to reduce the postoperative mortality rate from 5.6 to 3.2%, the number of postoperative complications - from 33.3% to 13.8% (p=0.0004) and reduce the bed-day in operated patients from 20.7 to 13.5 on average.

**Conflict of Interest** – None

**Ethical aspect** – the article is reviewed, and the information presented has a cited reference to primary sources.

**Funding** is not.

## REFERENCE:

1. Bidwell L.A. Two Cases of Acute Intestinal Obstruction due to Adhesions, in one of which Enterectomy and Anastomosis by Maunsell's Method were Performed. // Br Med J. 2017;1:1151-2.
2. Branham J.H. VIII. Intestinal Obstruction from Strangulation by an Adhesion Band; Recovery after Laparotomy. // Ann Surg. 2014 Jul;20(1):59-62.
3. Dor J. Traitement des sténoses chroniques de l'intestin grêle par adhérences multiples (en bloc) post-operatoires, avec ou sans fistule stercorale ou pyostercorale, en dehors des périodes d'occlusion [Treatment of chronic stenoses of the small intestine by multiple post-operative (en bloc) adhesions, with or without stercoral or pyostercoral fistula, outside the occlusion periods]. // Sud Med Chir. 2015;77:355-63. French.
4. Schwartz A.R. Mesenteric bands producing intestinal obstruction in a three-day-old infant with recovery. // Arch Pediatr (N Y). 2016;63:317-9.
5. Hamlin E.Jr., lingley J.R. Strangulated small intestine due to an adhesive band. // N. Engl. J. Med. 2016;235:307-9.
6. Golden R. Some problems in abnormal intestinal physiology associated with peritoneal adhesions and ileus. // Am. J. Roentgenol Radium Ther. 2020;56(5):555-68.
7. Forty F. Obstruction by peritoneal bands without previous operation. // Clin J. 2021;75(6):211-6.
8. Hunt C.J. Early indications of adhesive small bowel obstruction. // Am. J. Surg. 2021;72(6):865-8.
9. Dalgarno M., Puckey S., Nelson M. Duodenal obstruction due to peritoneal bands. // Med. J. Aust. 2018;1(13):414.
10. Elzeneiny Y. A case of complete chronic volvulus of the small gut, with visceroptosis and visceral adhesions. // J. Egypt. Med. Assoc. 2017;31(5):479.

## O'TKIR CHANDIQLI ICHAK TUTILISHINI TASHXISLASH VA DAVOLASH

**Sapaev D.A., Eshchanov A.A.**

**Urgench, O'zbekiston**

### ABSTRAKT

Ushbu maqola o'tkir chandiqli ichak tutilishini tashxislash va davolashni yaxshilash usullarini izlashga bag'ishlangan. Amalga oshirilgan izlanishlar asosida o'tkir chandiqli ichak tutilishini jarrohlik davolash natijalarini yaxshilash maqsadida bemorlarni kasalxonaga yotqizish vaqtini qisqartirish, rentgenologik va endoskopik tekshiruv usullaridan qo'llanish, jarroxiklik-anestezik yordam usullarini takomillashtirish zarurligini isbotladik. O'tkir chandiqli ichak tutilishini da laparoskopik adezioliz bemorlarni erta faollashtirishga, statsionar davolanish davomiyligini, dori-darmonlarga bo'lgan ehtiyojni kamaytirishga va qorin bo'shlig'iga chandiqli xosil bulish xavfini kamaytirishga imkon beradi. Laparoskopik adezioliz tajribali jarrohlar tomonidan aniq ko'rsatmalarga muvofiq, aralashuvning barcha texnik detallariga diqqat bilan rioya qilish bilan amalga oshirilishi kerak. O'tkir chandiqli ichak tutilishida o'limga olib keladigan natijalarning asosiy xavf omillari bemorning ahvolining og'irligi va jarrohlik texnikasining nomukammalligi tufayli kech jarrohlik aralashuvi va operatsiyadan keyingi asoratlardir.

***Kalit so'zlar:*** o'tkir ichak tutilishi, qorin bo'shlig'iga chandiq olish, diagnostika va davolash usullarini takomillashtirish

## ДИАГНОСТИКА И ЛЕЧЕНИЕ ОСТРОЙ СПАЕЧНОЙ КИШЕЧНОЙ НЕПРОХОДИМОСТИ

**Сапаев Д. А., Эшчанов А.А.**

**Ургенч, Узбекистан**

### АБСТРАКТ

Данная статья посвящена поиску путей улучшения диагностики и лечения острой спаечной кишечной непроходимости. На основании проведенных исследований нами доказано, что для улучшения результатов хирургического лечения острой спаечной кишечной непроходимости необходимы сокращение сроков доставки больных в стационар, более широкое применение рентгенологических и эндоскопических методов исследования, совершенствование техники хирургического и анестезиологического пособия. Лапароскопический адгезиолизис при острой спаечной кишечной непроходимости позволяет рано активизировать больных, уменьшить сроки стационарного лечения, потребность в медикаментах, а также снизить риск развития спаечной болезни брюшной полости. Лапароскопический адгезиолизис должен выполняться по строгим показаниям, опытными хирургами, с тщательным соблюдением всех технических деталей вмешательства. Главными факторами риска летальных исходов при острой спаечной кишечной непроходимости являются позднее выполнение хирургического вмешательства и послеоперационные осложнения, обусловленные как тяжестью состояния больных, так и несовершенством хирургической техники.

***Ключевые слова:*** острая кишечная непроходимость, спаечная болезнь брюшной полости, улучшение методов диагностики и лечения