

**MINISTRY OF THE HIGHER AND SECONDARY VOCATIONAL
EDUCATION OF THE REPUBLIC OF UZBEKISTAN**

**MINISTRY OF HEALTH PROTECTION OF THE REPUBLIC OF
UZBEKISTAN**

ANDIJAN STATE MEDICAL INSTITUTE

As the manuscript

UDC: 616-071-08. 34-007.272

ABDULKHAKIMOV ARSEN RENATOVICH

**COMPLEX PROGRAM OF THE DIAGNOSIS AND TREATMENT OF
VARIOUS FORMS OF LATE ADHESIVE IMPASSABILITY AT
CHILDREN.**

5A510202 – Children's surgery

The thesis on competition of the master degree

Scientific advisor: c.m.s. docent: Mirzakarimov B. H.

ANDIJAN 2016

CONTENTS

	Pages.
The list of the used reductions	4
Abstract of master's thesis.....	5
Introduction (general characteristic of work).....	13
Chapter 1. Questions of diagnostics and treatment of adhesive intestinal impassability (review of literature).....	16
1.1. The diagnostic actions used at adhesive intestinal impassability	16
1.2. Motor and evacuator violations at adhesive intestinal impassability ...	19
1.3. Methods of an elektromiostimulation of the intestine in treatment postoperative motor evacuator violations.....	20
1.4. The characteristic of methods of treatment of patients with adhesive intestinal impassability.....	22
Chapter 2. Materials and methods.....	26
2.1. A general characteristic of the conducted researches. Principles of formation of clinical groups.....	26
CHAPTER 3	
3.1. Special methods of research.....	29
CHAPTER 4. The comprehensive program of treatment of patients with late adhesive intestinal impassability.....	40
4.1. General characteristic of clinical material.....	40
4.2 Clinical laboratory efficiency of conservative therapy ...	41

4.3 Clinical laboratory justification of the choice of expeditious tactics and postoperative maintaining patients with late adhesive intestinal impassability.....	46
4.4 Medic-social efficiency of the developed program of treatment of children with late adhesive intestinal impassability	51
Conclusion	53
Conclusions.....	59
Practical recommendations	60
Literature	61

LIST OF REDUCTION'S

№	Abbreviation	Significance
1	SE	Systemic enzymotherapy
2	LAII	Late adhesive intestinal impassibility
3	AD	Adhesive disease
4	EAI	Early adhesive intestinal impassibility
5	LAC	Liquid in abdominal cavity
6	TA	Total adhesiolysis
7	AI	Acute intestine impassibility
8	AAI	Acute adhesive intestinal impassibility
9	AP	Adhesive process
10	SIT	Stomach- intestinal tract
11	US	Ultrasound

**THE MINISTRY OF HIGHER AND SECONDARY SPECIAL
EDUCATION OF THE REPUBLIC OF UZBEKISTAN
ANDIJAN STATE MEDICAL INSTITUTE**

**Faculty: Pediatrics
Department of pediatric surgery,
anesthesiology and reanimatology
academic year 2013-2016**

**Student: A. R. Abdulkhakimov
Scientific advisor: c.m.s. dosent:
Mirzakarimov B. H.
Specialty: 5A510202–Pediatric surgery**

ABSTRACT OF MASTER'S THESIS

Urgency of the problem. The problem of adhesive intestinal obstruction to the present time is one of the most important in abdominal surgery. Its relevance is due to the high frequency of occurrence is 25% - 80%, high mortality from 7.6% to 25%, the ability to acquire recurrent nature of the flow - 7% - 13% (Abdullaev E. G. 2001., Janczewskii P. A. 1989., Konovalov A. K. 1996., Cullen J. J. 1994).

The data of literary sources, evidence of the advantage of any of the existing methods of diagnosis of adhesion obstruction of Genesis is highly controversial. In most cases, diagnosis is based on radiographic methods and in recent years on the results of ultrasonic examination (Beresneva, E. A. 1995., Derzhavin V. M. 1992., Izosimov A. N., 2008., Kishkun A. A 1990., Leontiev S. N. 2002) . However, despite the positive aspects, these methods are not without drawbacks. They are either time-consuming or not enough informative, especially in cases accompanied by acute disorders of mesenteric circulation (Kriger A. G. 2001., Mintchev M. P 1995)

Thus, there is no clear order of diagnostic studies in individuals admitted to hospital with a suspected intestinal obstruction. For obvious reasons, there remains the question of clarifying objective diagnostic criteria, using modern examination methods, the definition of various forms of late adhesive intestinal obstruction (LAIO) in childhood. It is known that therapeutic measures are directly linked to a form of intestinal obstruction. Currently, there are

conservative and surgical methods aimed at restoring intestinal passage (Izosimov A. N. 2008, Shestopalov A. E. 1995, Pescatori M. 1991). Lately, the priority is the use of laparoscopic techniques in the treatment of adhesive obstruction Genesis (Belokurov Yu. N. 1991, Beresneva E. A. 2004, Dronov A. F. 2001, Dubrov Y. Z. 1999, Jenczewski 1975 P. A., Isakov Yu. F. 1993).

In the postoperative period the traditional methods of treatment of adhesive intestinal obstruction are: antibacterial therapy, correction of metabolic disorders, medication and electrical stimulation of peristalsis, enterosorption, continuous epidural blockade, hyperbaric oxygen therapy, physiotherapy (Berelavichus S. V. 2002, Makedonskaya T. P. 2004, Pekarsky V. V. 1995, Berger T. 1966)

Of great interest is the study of human immunity in adhesive intestinal obstruction. An important role for the need of correction of immune mechanisms in the development of postoperative adhesions (Janczewski P. A. 1989, Zapadnyuk I. P. 1983, 2000 Novomlinsky V. V., Salimov Sh. T. 2006, Shamsiev A. M. 2000.)

Despite significant advances in modern surgery and intensive care, traditional methods of treatment of patients with adhesive intestinal obstruction is not always effective and require further improvement. Optimization of algorithm of management in the postoperative period, taking into account the form of the disease, patient's age and the severity of his condition needs in detail.

Thus, to improve the results of treatment of adhesive intestinal obstruction, requiring complex clinical-experimental exploration of questions of diagnostics and treatment of various forms of late adhesive intestinal obstruction.

The purpose of the study: Create an effective complex program of diagnosis and treatment of late adhesive intestinal obstruction at children.

Objectives of the study:

- 1) Show the possibility to diagnose different forms of late adhesive intestinal obstruction in children using computed tomography;
- 2) To optimize integrated program for the postoperative management of patients taking into account the form of the disease, immunological background, age and severity of the patient's condition;
- 3) To assess the immunological status of patients with late adhesive intestinal obstruction;

Scientific novelty:

- 1) On the basis of computer-demography study of the abdominal cavity, to characterize the various forms of late adhesive intestinal obstruction in pediatric age;
- 2) To optimize the algorithm for diagnosis of late adhesive intestinal obstruction in pediatric patients;
- 3) To develop a comprehensive program of conservative treatment and postoperative management of pediatric patients with late adhesive intestinal obstruction with regard to the shape, the immunological status and the severity of the condition;

Practical significance:

- 1) show the possibility of early diagnosis of strangulation impassibility by CT;
- 2) to optimize the algorithm for the diagnosis of various forms of late adhesive intestinal obstruction with the use of CT scan and dynamic ultrasound monitoring;
- 3) To justify the use of some enzyme preparations with anti-adhesive purposes in pediatric patients;
- 4) To test and implement into clinical practice algorithm for the treatment of children with late adhesive intestinal obstruction;

The structure and content of the work: Dissertation set out on pages 73 and consists of introduction, 4 chapters, conclusion and bibliography, including the source 124. The text of the thesis contains 11 tables, 8 figures, 1 scheme, 2 diagrams.

Scientific advisor c.m.s. docent:

Mirzakarimov B. H.

Student of the magistracy:

Abdulkhakimov A. R.

**МИНИСТЕРСТВО ВЫСШЕГО И СРЕДНЕГО СПЕЦИАЛЬНОГО
ОБРАЗОВАНИЯ РЕСПУБЛИКИ УЗБЕКИСТАН
АНДИЖАНСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ
ИНСТИТУТ**

**Факультет: Педиатрия
Кафедра детской хирургии,
анестезиологии- реаниматологии
2013-2016 учебный год**

**Студент магистратуры: Абдулхакимов А.Р.
Научный руководитель: к.м.н. доцент
Мирзакаримов Б.Х.
Специальность: 5A510202–Детская хирургия**

АННОТАЦИЯ МАГИСТЕРСКОЙ ДИССЕРТАЦИИ

АКТУАЛЬНОСТЬ ПРОБЛЕМЫ. Проблема спаечной кишечной непроходимости до настоящего времени является одной из значимых в абдоминальной хирургии. Ее актуальность обусловлена высокой частотой встречаемости - 25% - 80%, высокой летальностью от 7,6% до 25%, способностью приобретать рецидивирующий характер течения - 7% - 13% (Абдуллаев Э.Г. 2001., Женчевский Р.А. 1989., Коновалов А.К. 1996., Cullen J.J. 1994)

Данные литературных источников, свидетельствующие о преимуществе какого - либо из существующих методов диагностики непроходимости спаечного генеза, весьма противоречивы. В большинстве случаев диагностика базируется на рентгенологических методах и в последние годы на результатах ультразвукового обследования (Береснева Э.А.1995., Державин В.М 1992., Изосимов А.Н 2008., Кишкун А.А 1990., Леонтьев С.Н 2002) . Однако, несмотря на положительные моменты, эти методы не лишены недостатков. Они либо длительны по времени, либо недостаточно информативны, особенно в случаях, сопровождающихся острым нарушением мезентериального кровообращения (Кригер А.Г 2001., Mintchev M.P 1995)

Таким образом, нет ясности в вопросе порядка проведения диагностических мероприятий у лиц, поступающих в стационар с подозрением на кишечную непроходимость. В силу очевидных причин,

актуальным остается вопрос выяснения объективных диагностических критериев, с использованием современных методов обследования, в определении различных форм поздней спаечной кишечной непроходимости (ПСКН) в детском возрасте.

Известно, что лечебные мероприятия напрямую связаны с формой кишечной непроходимости. В настоящее время существуют консервативные и оперативные методы, направленные на восстановление кишечного пассажа (Изосимов А.Н. 2008, Шестопапов А.Е. 1995, Pescatori M. 1991).

В последнее время приоритетным является использование лапароскопических методик в лечении непроходимости спаечного генеза (Белокуров Ю.Н. 1991, Береснева Э.А. 2004, Дронов А.Ф. 2001, Дубров З.Я. 1999, Женчевский Р.А. 1975, Исаков Ю.Ф. 1993)

В послеоперационном периоде традиционными методами лечения спаечной непроходимости кишечника остаются: антибактериальная терапия, коррекция метаболических расстройств, медикаментозная и электростимуляция моторики кишечника, энтеросорбция, продленная эпидуральная блокада, гипербарическая оксигенация, физиотерапевтические процедуры (Берелавичус С.В. 2002, Македонская Т.П. 2004, Пекарский В.В. 1995, Berger T. 1966)

Несомненный интерес представляет изучение иммунитета человека при спаечной кишечной непроходимости. Важная роль отводится должной коррекции иммунных механизмов в развитии послеоперационных спаек (Женчевский Р.А. 1989, Западнюк И.П. 1983, Новомлинский В.В. 2000, Салимов Ш.Т. 2006, Шамсиев А.М. 2000.)

Несмотря на значительные достижения в современной хирургии и интенсивной терапии, традиционные методы лечения больных со спаечной непроходимостью кишечника не всегда эффективны и требуют дальнейшего совершенствования. Оптимизация алгоритма ведения в

послеоперационном периоде с учетом формы заболевания, возраста пациента и тяжести его состояния нуждается в детализации.

Таким образом, для улучшения результатов лечения спаечной кишечной непроходимости, необходима комплексная клинико-экспериментальная разработка вопросов диагностики и лечения различных форм поздней спаечной кишечной непроходимости.

Цель исследования:

Создать эффективную комплексную программу диагностики и лечения поздней спаечной непроходимости кишечника в детском возрасте.

Задачи исследования:

- 1) Показать возможность диагностики различных форм поздней спаечной кишечной непроходимости у детей с использованием компьютерной томографии;
- 2) Оптимизировать комплексную программу послеоперационного ведения больных с учетом формы заболевания, возраста и тяжести состояния пациента;

Научная новизна.

- 1) На основании компьютерно-томографического исследования органов брюшной полости, дать характеристику различных форм поздней спаечной кишечной непроходимости в детском возрасте;
- 2) Оптимизировать алгоритм диагностики поздней спаечной кишечной непроходимости у пациентов детского возраста;
- 3) Разработать комплексную программу консервативной терапии и послеоперационного ведения пациентов детского возраста с поздней спаечной кишечной непроходимостью с учетом формы и тяжести состояния;

Практическая значимость

- 1) Показать возможность ранней диагностики странгуляционной кишечной непроходимости с помощью КТ;

- 2) Оптимизировать алгоритм диагностики различных форм поздней спаечной кишечной непроходимости с применением КТ и динамического ультразвукового мониторинга;
- 3) Обосновать применение некоторых ферментных препаратов с противоспаечной целью у пациентов детского возраста;
- 4) Апробировать и внедрить в клиническую практику алгоритм лечения детей с поздней спаечной кишечной непроходимостью;

Структура и содержание работы: Диссертация изложена на 73 страницах и состоит из введения, 4 глав, заключения и библиографического указателя, включающего 124 источника. Текст диссертации содержит 11 таблиц, 8 рисунков, 1 схему и 2 диаграммы.

Научный руководитель

к.м.н. доцент:

Мирзакаримов Б.Х.

Студент магистратуры:

Абдулхакимов А.Р.

Introduction

Adhesive intestinal obstruction to the present time is one of the most important problems abdominal surgery. Its relevance is due to the high frequency of occurrence is 25% - 80%, high mortality from 7.6% to 25%, the ability to acquire recurrent nature of the flow - 7% - 13% [4; 66; 81]. An integrated approach to solve diagnosis and treatment of peritoneal commissures is considered to be one of the main problems of pediatric surgery [8; 53; 129; 157; 194].

Literature was conflicting data regarding the benefits of libois existing methods of diagnosis of bowel obstruction adhesions Genesis. In recent years, the main diagnosis is based on radiographic methods and results of an ultrasound examination [22; 57; 121]. However, these methods have their drawbacks. They are either time-consuming or not enough informative.

Based on the foregoing, it becomes clear that diagnosis of children with suspected intestinal obstruction has so far not clarified. There remains the question of clarifying the diagnostic criteria, using modern examination methods, the definition of various forms of late adhesive intestinal obstruction (LAIO) in childhood. Children's surgeons have long known that treatment of intestinal obstruction, is directly related to its shape. For restoration of the intestinal passage, there are conservative and surgical methods [74].

Currently in the treatment of intestinal obstruction adhesions Genesis children's surgeons prefer the laparoscopic method of treatment [19; 21; 60; 61; 65; 77; 78].

In the postoperative period the traditional methods of treatment adhesive intestinal obstruction are: antibacterial therapy, correction of metabolic disorders, enterosorption, pharmacological and electrical stimulation of gut motility, physiotherapy, continuous epidural blockade [20; 112; 124]. Traditional methods of treatment of patients with adhesive intestinal obstruction are not always effective, so they need to improve in future.

Optimization of algorithm of management in the postoperative period, taking into account the form of the disease, patient's age and the severity of his condition needs in detail.

Thus, to improve the results of treatment of adhesive intestinal obstruction requiring complex development issues diagnosis and treatment of various forms of late adhesive intestinal obstruction.

Objective: to Create effective programmes diagnosis and treatment of late adhesive intestine soluble in childhood.

Objectives of the study: 1) Show the possibility to diagnose different forms of late adhesive intestinal obstruction in children using computed tomography;

2) To Optimize integrated programme for the postoperative management of patients taking into account the form of the disease, age and severity of the patient's condition;

3) To optimize the algorithm for diagnosis of late adhesive intestinal obstruction in pediatric patients;

Scientific novelty:

1) Based on the data obtained CT studies of the abdomen, for the first time, the characteristic of various forms of late adhesive intestinal obstruction in pediatric age;

2) Optimized the algorithm for diagnosis of late adhesive intestinal obstruction in pediatric patients;

3) Developed a comprehensive program of conservative treatment and postoperative management of pediatric patients with late adhesive intestinal obstruction with regard to the shape and severity of the condition;

Practical value:

1) Shows the possibility of early diagnosis of strangulation impassibility by CT.

2) Optimized the algorithm of diagnostics of various forms of late adhesive intestinal obstruction with the use of CT scan and dynamic ultrasound

monitoring;

3) Tested and introduced into clinical practice algorithm for the treatment of children with late adhesive intestinal obstruction;

Scientific significance: The developed complex diagnostic and treatment activities that help improve the results of treatment of surgical pathologies in children.

Chapter 1.

The issues of diagnosis and treatment adhesive intestinal obstruction (literature review)

1.1. Diagnostic measures used in adhesive intestinal obstruction
Treatment of adhesive intestinal obstruction is still one of the most important problems in surgery. After surgery the incidence of adhesive intestinal obstruction according to the literature ranges from 25 % to 80% [79]. One of the most frequent causes of unsatisfactory results of treatment of patients with adhesive intestinal obstruction is the late diagnosis. In 30-40% of patients surgery was performed more than 24 hours from the time of the disease and postoperative mortality in this group of patients reaches 19-20% [98; 103; 108]. In this aspect are quite reasonable attempts to improve methods of diagnosis, as well as to find new ways that could help in the shortest time possible to detect adhesive intestinal obstruction. In the last years of pavel severinets ray diagnostics, such as ultrasound, MRI, CT, etc. All provide the need for serious adjustments established over many years of laws and reassess the Arsenal of research tools [115].

Historically the algorithm of examination of patients presenting with suspected adhesive impassability, which includes traditional survey methods: identify, the study of history, premorbid background, objective inspection, additional methods [64].

Radiographic gastrointestinal tract found most prevalent. However, even in stationary conditions, the frequency of diagnostic errors is 16-34% [94]. Been around for decades radiography of the abdomen is a fundamental method in the diagnosis of acute intestinal obstruction. Radiography allows to reveal signs of bowel obstruction: the presence of a “bowl Kloiber”, pneumatosis of the small intestine, the horizontal fluid levels, etc. In his works, Beresneva, E. A. (1995; 2004) emphasizes the importance of the review radiography abdominal cavity, defining radiological signs of obstructive and strangulation intestinal obstruction in 76.1% of cases. According to some foreign authors plain

radiography informative only in 50-60% of cases, 20-30% of changes is not determined, and in 10-20% cases, changes are treated as dubious [8].

Radiopaque study in patients is performed by oral and probe the introduction of barium sulfate, or radiopaque markers. This method allows to assess and document the passage of a contrast agent for the gastrointestinal tract, determine the movement of the intestinal loops relative to each other, to identify the indirect signs of adhesions (deformation of the intestine, slowing the evacuation of these or those divisions of the intestinal tube), to visualize the presence of fixation of the bowel to the anterior abdominal wall. However, despite the widespread prevalence of this method, the study of long time, and in conditions of impaired motor function of the stomach and intestines the barium sulfate can aggravate obstruction, causing in some cases, obstruction of the intestine [8; 15; 64; 98; 103].

Radionuclide methods of investigation of the evacuation function of the stomach and passage are used in modern medicine as an alternative to contrast enhancement of the gastrointestinal tract. Based on the results of scintigraphy, in combination with survey radiography and ultrasonic examination of the abdominal cavity, allows the study in 87.5 % of cases to choose the tactics of conservative treatment of acute obstruction of the small intestine [80; 101; 102]. The described study is not time consuming, does not require interruption of treatment and has a high radiation exposure, however, according to some authors in the detection of adhesions technique is not descriptive enough as yet found extensive applications in practical medicine [119].

More and more attention in the last few years, attracted by ultrasonic methods. It is connected primarily with improving the quality of visualization of abdominal organs as a result of introduction of machines greater resolution, have the ability to assess parietal blood flow in the gut, as evidenced by the large number of works published in periodicals [13; 52; 62].

Reliable objective ultrasound signs of bowel obstruction are the following: intraluminal sequestration of fluid, the increase in diameter of the

small bowel and thickening of its walls, the uneven, gas full, a pendulum movement of chyme in the intestinal lumen, visualization of folds Kerkira, the presence of free fluid in the abdominal cavity. The disadvantages of this method include the low penetrating ability in environments containing gas, which is especially important in the case of acute intestinal obstruction, accompanied by flatulence [29; 86; 99; 106; 121].

Attempts to determine with ultrasound a form of obstruction have been made by many authors, relying on indirect signs indicating obstruction: isolated loop, absence of peristalsis, free fluid in the abdominal cavity. But, the combination of these symptoms is not always indicative of strangulation, and their presence corresponds to the far advanced cases [116].

Describes the research methods of Central blood flow in mesenteric vessels. On the basis of Doppler ultrasound of portal vein and superior mesenteric artery researchers conducting the differential diagnosis between inflammatory changes in the intestinal wall and intestinal obstruction [84].

In the press there are reports of differential diagnosis by ultrasound between the mechanical and dynamic intestinal obstruction, with the use of bowel stimulation diadynamic currents Bernard, neostigmine methylsulfate [57; 58; 69; 74].

The introduction of ultrasonic method for mapping adhesions made it possible not only to simplify the creation of operative access in laparoscopic interventions, but also to reduce to zero the number of complications [116]. Thus, ultrasound diagnosis of adhesive intestinal obstruction is a good auxiliary method, widely used in Russia and abroad. However, the etiology of obstruction by ultrasonography (us) are able to establish quite rare, so this method is not meant to substitute for CT in the examination of patients with suspected obstruction [124]. With the advent of computed tomography, the diagnosis of adhesive intestinal obstruction has increased considerably. To present in periodical print publications this method of examination of patients paid much attention, because of its high informativeness and speed of obtaining results. A

more rapid method does not require the ingestion of barium is independent of the researcher unlike ultrasound, allows to detect the cause of trouble in the abdominal cavity [109; 110]. Currently selected CT signs of intestinal obstruction: enlargement of the proximal small intestine more than 2.5 cm in diameter; the presence of the transition point; in the collapsed loop of small bowel in the distal; the symptom of "string of pearls"; a symptom of a small bowel faces, no obvious cause of obstruction [115; 108].

CT to the study of mesenteric arteries often have to resort in the presence of a clinical picture of ischemia of the intestine. It is known that during strangulation there are several stages (impaired venous drainage, increased intravascular pressure, decreased perfusion of the intestinal wall as a result of violation of arterial inflow), which can be differentiated at CT. In the case of strangulated intestinal obstruction the sensitivity of the method reaches 90% [125; 119].

Thus, existing methods for diagnosis of adhesive intestinal obstruction in all its manifestations are diverse. For a more detailed diagnosis is required, of course, an individual approach in each particular case of disease. In this light it seems appropriate to detail the algorithm of examination of patients with suspected adhesive intestinal obstruction.

1.2. Motor-evacuation violations in adhesive intestinal obstruction
Surgery on the abdominal organs, according to some authors, 13-86% of cases are accompanied by motor-evacuation dysfunction, need on special treatment in 69% of cases. Such violations take the nature of lighter forms — in the form of paresis, and in some cases can cause severe functional intestinal obstruction [31].

Prolonged postoperative paresis of the intestine can cause a number of undesired complications, including adhesive intestinal obstruction [42; 43; 96]. Developing the "centromanderley failure", including impaired motor, secretory, absorptive and barrier functions of the intestine, leading to an increase in the level of endogenous intoxication, making the colon in the "non-draining ulcer"

[3; 124]. Paresis of the intestine and the violation of the transit of chyme promote translocation of microbes into the blood stream and abdominal cavity, thus supporting the inflammatory process and create the prerequisites to pathological formation of adhesions [116].

Thus, the suppression of paresis of the intestine is a priority in the reduction of adhesion formation.

Virtually untouched are the issues of decompensation of the motor apparatus of the gut when disturbed passage of adhesive due to deformation of the intestinal tube. Only clinical observation allows us to estimate the manifestation of motor disorders, whereas their latent forms are overlooked, which often leads to delays in making therapeutic decisions. In this regard, I cannot overemphasize the importance of objective methods to assess the development of functional disorders. In-depth study of this issue is of value to the possible establishment of effective treatments for specific patients.

1.3. Methods bowel electrical miostimulation in the treatment of postoperative motor-evacuation disorders. Because of the lack of effectiveness of nasogastric drainage and pharmacochemical, still conducted an intensive search for alternative methods of dealing with atony of the intestine, and the history of the development direction of electrical stimulation has more than 150 years [75].

Numerous works in the XX century shows the possibility to influence the level of activity of the smooth muscle of the gastrointestinal tract by means of electrical stimuli [25; 137; 167]. Many authors have proved the efficacy of electrical stimulation of the gastrointestinal tract in the fight against post-operative paresis [6; 11; 12; 41; 43].

Since the 60-ies of XX century, different methods of electrical stimulation of the motility of the gastrointestinal tract began to be tested in clinic space. Often used device for stimulating the electrical impulses of the gastrointestinal mucosa [107].

There are two types of effects of electric current on the digestive tract — stimulation constant (galvanic) and pulsed current. Direct current has a positive therapeutic effect due to the irritant effect on the receptors located on the mucous membrane, causing a reflex-mediated effects of increased activity of the intestine, which also defines a fairly narrow range of therapeutic effects. In the fight against postoperative motor disorders also use indirect methods (percutaneous, indirect), direct (cercal) and intracavitary (mono and bipolar) stimulation of electrical activity [2; 32; 50; 54; 105; 114].

Method of transcutaneous electrical stimulation based on the stimulation pulses applied to the reflex zones, apply various parameters of the electric current. Vakhtangishvili R. sh., et al. for stimulation of the bowel is used and sinusoidal modulated currents with a modulation frequency of 100%, the positioning electrodes on the back, lower back and the skin of the abdomen. Serkalem S. R. as a kind of electrode used space full of novocaine in the retroperitoneal tissue and the second electrode, superimposed on the lower back. The duration of the feed pulse was 5-20 min, current 5-15 mA, a frequency of 10-40 Hz. Transcutaneous stimulation method has several disadvantages, including side effects, and in surgical practice is used infrequently [47]. The most promising in the treatment of postoperative States it is directly electro-miostimulation [113].

Intraluminal use of the electrode did not find currently proper distribution because of the possible lack of fit to the body wall and the irritating action of the current on the mucosa [41].

So, Alibayev A. K. (2008) in the treatment of early adhesive intestinal obstruction used prolonged stimulation of the gastrointestinal tract Autonomous pacemaker EKS-511 under control of the device "Gastroen-GEM". The use of the methodology in the main group noted the increase in the coefficient of rhythm of the stomach in 3.7 times, jejunum, 2.9 times, of the ileum 2.3 in

comparison with the control group, which allowed us to conclude on the improvement of motor function of the gastrointestinal tract.

Mechanism of action emit short pulses (10 MS) - have an effect on the nervous apparatus of the bowel, and long — more than 100 MS that have a direct influence on smooth muscles [112]. Short pulses can cause a variety of negative cardiovascular and autonomic reactions, which limits the use of this approach.

At the present stage has radically changed the idea of electro-stimulation. Acting on gut long pulses, the authors propose to normalize the metabolism in smooth muscle and to restore microcirculation in the intestinal wall, which is associated with the restoration of the rhythm of the slow electrical waves, not by any means a quick growth of contractile activity of the body [118].

According to this view, the phenomenon of "imposed rhythm" by the impact of the long pulse serves as a marker of positive developments and the willingness of smooth muscle on the recovery of contractile activity. Changing the rhythm of the slow waves of the authority as a result of stimulation with long pulses is connected with possibility of improvement, as rehabilitation process and delayed positive impact on evacuation function [120].

The data presented largely reflect the possibility of the use of electrical stimulation of the colon, but requires experimental search of the most effective modes of stimulation for the correction of decompensated disorders of the small intestine. Attempts to create a unified technique, "quilting" weakened muscles, vastly number of cases remain inconclusive. Special hopes are associated with the development of technology control efficiency of electro-stimulation, which involves dynamic change of the stimulation parameters depending on electro-miographic answer of gut.

1.4. Characteristics of the methods of treatment of patients with adhesive intestinal obstruction. Known methods of treatment of patients with adhesive intestinal obstruction are divided into two large groups: conservative measures and operative intervention. The choice of treatment depends on the form of the

disease, which is defined taking into account clinical and anamnestic data and the timing of the onset of clinical manifestations. Obviously, the priority in try to rectify obstruction are conservative measures, like any surgery entails more the formation of adhesions [9; 16].

In the available literature provides a detailed description of the conservative measures that should be used when a patient with SKN [76]. Decompression of the gastrointestinal tract helps to reduce intraluminal pressure to implement mechanical removal of toxic substances. The most commonly applicable is considered nasogastric intubation. In recent time there are reports about endoscopic naso-gastrointestinal intubation. So, T. P., Gurchumelidze, N. And. Karasev et al., applying this method in the complex treatment of postoperative intestinal obstruction, noted its high efficiency.

Infusion therapy with components based on the daily physiological needs of the organism taking into account pathological losses and daily diuresis aimed at filling the BCC, correction of electrolyte disorders. The use of pharmacological and electrical stimulation of the intestine, after the shortfall of electrolytes and the volume of circulating fluid, helps to eliminate the phenomena of paresis and leads to the restoration of motor-evacuation function. The use of hypertonic enemas enables mechanical cleaning of the intestinal tube, and to stimulate the motor activity of the intestine. The presence of positive dynamics within 2-4 hours after initiation of therapy, dictates the need to continue dynamic observation and conservative treatment. This sequence of events has a positive effect, according to different literature 35.9% - 54.5% of cases [63; 87; 95].

According to bibliographic data the last time the purpose of starting therapy in these patients must be justified the positions of the pathogenesis of the syndrome of enteric insufficiency. Under syndrome intestinal failure understand the violation of cavity and parietal digestion due to prolonged inhibition of motility guts off of her interstitial exchange, morphological changes of the bowel wall, which leads in turn to breaches the permeability of

the intestinal barrier, translocation of microbes into the abdominal cavity and the bloodstream. In this situation, a growing phenomenon endotoxemia, joining infectious complications, progressive immunodeficiency that leads to the development of multiple organ failure and eventual death. Of course, in advanced cases, or in conditions of strangulated intestinal obstruction require urgent surgical intervention, after which the appropriate continuation in the complex therapy taking into account the above-described pathogenetic mechanisms [112].

Currently, the Arsenal of surgical treatment of adhesive intestinal obstruction is quite wide. Surgery is performed with the use of endovideosurgical technique or by laparotomy. Surgery consists of restoring intestinal permeability by avoid deformation of the intestine, dissection of adhesions, resection of necrotic bowel loops with the imposition of intestinal anastomosis or excretion of intestinal stoma, or, in a case involving a large conglomerate of intestinal loops in the pathological process, the imposition of bypass anastomoses [97; 99; 100].

Priority in adhesive obstruction is less invasive operation. Provide the separation of adhesions, the benefits of this the method described in literature reports of E. I.Finkelson and Hrennikov O. D. (1980), Yu. F. Isakov, E. A. Stepanov, Dronov A. F. (1985), A. M. Shulutko, F. N. Nasirov (2006). Analysis of the immediate and remote results of treatment of adhesive intestinal obstruction traditional surgery and laparoscopy according to V. M. Timerbulatov et al. (2002) showed that the use of traditional methods (laparotomy) leads to good results in 46.9% of cases, and the use of minimally invasive intervention in 66.7%.

Thus, the advantages of video laparoscopy, due to less risk of developing adhesions, reduce the frequency of complications, mortality and shortening of the postoperative period, make such intervention is especially valuable [4; 65]. To date, the questions about the indications and contraindications for endovideosurgical operations at this pathology of the abdominal organs are

debatable. A contraindication to the use of laparoscopic intervention, according to different authors, can be diagnosed at the preoperative stage and necrosis of the colon known available data on the total adhesive process in the abdominal cavity, the sharp increase of the diameter of the gut, combined with node make [15; 21; 60; 74].

However, surgical intervention, no matter how glorious it was not done does not always lead to recovery. Pathogenetic treatment of syndrome of enteral failure, initiated at the time of development of the obstruction, requires the continuation of intensive therapy in the postoperative period. Are extended decompression of the gastrointestinal tract, internal intestinal detoxification, the enterosorption and interbalnearia, etiotropic antibacterial therapy, correction of metabolic disorders, medication and electrical stimulation of bowel motility, systemic enzyme therapy, continuous epidural blockade [1; 2; 3; 4; 14; 28; 33; 34; 104].

Thus, the elimination as the adhesive intestinal obstruction and its manifestations, is the most difficult and most urgent task. A combination of known treatment methods do not always satisfy surgeons that requires further Refine and improve programs for the treatment of patients with SCN.

Chapter 2.

Materials and methods

2.1. General characteristics of the conducted research.

From 2012 to 2015 under our observation were 56 patients with late adhesive intestinal obstruction. For the decision tasks generated for two similar in age and sex of the clinical group: basic (29 patients) and control (27 patients). He used the principle of classification of pathology proposed by Y. F. Isakov in 1988, based on clinical determination of the shape of late adhesive intestinal obstruction.

The distribution of the patients in the basic group in the form of the disease and the age and sex composition are presented in table 2.1.1.

Table 2.1.1.

The distribution of children with late adhesive intestinal obstruction in form of the disease, age and sex in the main group (n=29)

Forms of LAIO	Age in year			Sex		Total	
	2-4	5-9	10-17	м	ж	abs.	%
Subacute	3	4	11	10	8	18	62,07
Acute	2	-	6	5	3	8	27,59
Supercute	-	2	1	1	2	3	10,34
TOTAL	5	6	18	16	13	29	100

In the main group of therapeutic and diagnostic activities were carried out according to the programme. For the diagnosis of adhesion obstruction of the Genesis used an Arsenal of methods, including computed tomography of the abdominal cavity, the dynamic ultrasound examination of the abdomen, radiography of the abdominal organs and radiopaque study. Treatment of patients consisted in the appointment of conservative measures,

surgical intervention and postoperative management. After the relief of symptoms of intestinal obstruction after 3-4 days, patients underwent laparoscopic dissection of adhesions. Contraindications for laparoscopic surgery was considered diagnosed at the preoperative stage, the necrosis of the intestine and the alleged massive commissural process in the abdominal cavity. If conservative measures did not give a positive effect, were exhibited indications for emergency surgical intervention. The preference for endovideosurgical methods.

In the postoperative period, the children along with standard treatment were receiving anti-adhesive therapy: in group No. 2 in the form of monotherapys therapy (electrophoresis with hyaluronidase), group No. 1 - polyenzyme therapy with medication Wobenzym (Fig. 2.2). In Wobenzym consisted of the following: Pancreatin 345 P. E. P.-U, trypsin 360 F. I. P-U, chymotrypsin 300 F. I. P-U, papain 90 F. I. P-U, bromelain 225 F. I. p.-U, amylase 50 F. I. P-U, lipase 34 F. I. P-U, rutin 50 mg.

Polyenzyme preparation Wobenzym was used in the following dose: 1 tablet per 6 kg body weight 3 times a day. The drug was used from 3 days after surgery during the subsequent 4 weeks (table. 2.1.2).

Table 2.1.2.

Age dosage of polyenzyme preparation Wobenzym in children

Age	Dosage of drag
1 - 4 year	1 tab. x 3 time a day
5 - 10 year	2 tab. x 3 time a day
11 - 14 year	3 tab. x 3 time a day
15 - 18 year	5 tab. x 3 time a day

Monotherapy physical therapy was to electrophoresis with hyaluronidase, starting 3-4 days after surgery. The duration of the course of physiotherapy treatment was 10 days. 1 procedure is used 1 vial of hyaluronidase (64 UNITS),

which was dissolved in 10 ml of 2% sodium bicarbonate. The enzyme was injected with the negative pole of a galvanic apparatus. The current was 5-10A, the duration of the session in 10-20 minutes. The active electrode was applied next to the operating wound.

The control group consisted of patients treated at the clinic from 2012 to 2015 (Table. 2.3.2.). The formation of the group was carried out based on the study of medical documentation by sampling using a random number generator.

Table 2.1.3.

The distribution of children with late adhesive intestinal obstruction in the form of the disease, age and sex in the control group (n=27)

Formsof LAIO	Age			Sex		Total	
	2-4	5-9	10-17	М	Ж	abs	%
Subacute	5	3	7	11	4	15	55,56
Acute	2	3	4	5	4	9	33,33
Superacute	-	2	1	2	1	3	11,11
TOTAL	7	8	12	18	9	27	100

In this group, according to the studied medical records, instrumental methods of examination were as follows: plain radiography of the abdominal organs and radiopaque study. The treatment was carried out according to the classical scheme consisting in infusion therapy, correction of electrolyte disturbances, antibiotic therapy, pharmacological stimulation of intestinal and physical therapy.

CHAPTER 3

3.1. Special research methods.

For comparison, the initial state of patients, monitoring of the dynamics of the disease, assessing the effectiveness of treatment we used as routine and special methods of examination.

Anamnestic method.

When studying the history of attention focused on the primary character of the performed surgical interventions. Studied the incidence of abdominal pain syndrome in the process of life of the patient, the frequency of readmissions of patients with symptoms of adhesive intestinal obstruction. Interested in the volume of previously performed surveys.

Clinical observation.

The clinical picture was paying attention to the characteristics of the pulse, status of mucous membranes and skin, the anterior abdominal wall (the presence posleoperazionny hypertrophic scarring, asymmetry, swelling of the abdomen, contouring the bowel loops). Palpation and auscultation were determined symptoms characteristic of intestinal obstruction.

Laboratory methods of examination.

The greatest importance was attached to the General blood test, biochemical blood test (total protein and protein fractions, total bilirubin and its fractions, alanine and aspartic transaminases, urea, creatinine, blood glucose), the General urine analysis.

Radiological methods of examination.

To diagnose bowel obstruction it was used plain radiography of abdominal cavity organs and radiopaque study of passage of barium sulfate through the digestive tract.

To determine the shape of adhesive intestinal obstruction, we used a method of computer tomography of the abdominal cavity.

Research methodology: the patient is positioned on the scanner table in a horizontal position. First ran prematurely of the abdominal cavity, and then mark a field of study.

Ultrasonic inspection.

For diagnosis and dynamic control used ultrasound scanner “CHISON Q5” (China) linear multifrequency transabdominal transducers in the range from 3.5 to 7.5 MHz. ultrasound was performed upon admission. Assessed the condition of the bowel (presence of dilatated leading the division, the thickness of the intestinal wall, pneumatization), peristalsis (intensity, orientation, movement of chyme in the lumen of the intestine), the presence of free fluid in the abdominal cavity. Performed dynamic ultrasound monitoring of the condition of the intestine after conservative therapy.

The use of optimized diagnostic algorithm in children with late adhesive intestinal obstruction.

According to the studied medical records from 27 patients of the control group methods of diagnosis of late adhesive intestinal obstruction was the investigation of complaints and anamnesis, observation of the clinical picture, as well as the use of the review radiography of the abdominal organs and radiopaque studies of the passage through the intestine.

Table 3.1.1.

The incidence of radiographic signs of late adhesive intestinal obstruction in the control group (n=27)

Sign Form	Non evenly gas full	Pathological level of liquid	Dilatated intestineloops
Subacute form, (n=15)	14(51,85%)	7 (25,92%)	2 (7,40%)
Acute form, (n=9)	6 (22,22%)	8 (29,62%)	3(11,11%)
Superacute form, (n=3)	1 (3,70%)	3(11,11%)	1 (3,70%)
Total, (n=27)	21 (77,77%)	18(66,65%)	6 (22,20%)

Analyzing diagnostic capabilities review radiography of the abdominal cavity, we identified the following features.

Table 3.1.1. shows that the informativeness of the review radiography of the abdominal cavity did not exceed 77,77%. In this "uneven, gas full colon" is an indirect symptom, not allowing enough to reliably judge the presence or absence of obstruction. Get to now pathognomonic radiographic visualization on radiographs of pathological fluid levels in the small intestine. In our case, this symptom discovered from 66.65%, and dilatation of the intestine revealed 22.20%.

These data indicate the lack of informativeness of the review of x-ray that is consistent with the literature information.

Radiopaque research method was used to estimate passage (Table. 3.1.2).

Table 3.1.2.

The incidence of radiographic signs of late adhesive intestinal obstruction in conducting radiopaque studies in the control group (n=27)

Sign Form	Depo of sulfat barium	Pathologic liquid level	Decelerated evacuation of contrast	Symptoms of hanged intestinal loops	Examine is not hold
Subacute form, (n=15)	4(14,82%)	9 (33,30%)	2 (7,40%)	1 (3,70%)	-
Acute form, (n=9)	4(14,82%)	3(11,11%)	1 (3,70%)	1 (3,70%)	5(18,52%)
Superacute form, (n=3)	-	-	-	-	3(11,11%)
Total, (n=27)	8 (29,60%)	12 (44,40%)	3(11,10%)	2 (7,40%)	8 (29,6%)

The table shows that 8 patients (29,60%) contrast study was not performed, as in the first three hours after admission they underwent laparotomy. Continuing in the dynamics of pathological fluid levels were observed in 44,40% of cases, the deposition of the contrast detected in 29,60%) cases, and a symptom of "sagging of the intestinal loops" found in 7.40% of

cases. It should be noted that two patients (7,40%) in subsequent intraoperatively diagnosed with necrosis of the loop of the small intestine.

The lack of effectiveness of the diagnostic measures used in intestinal obstruction adhesions genesis, impel us to optimize an existing algorithm for evaluation of pediatric patients.

With this purpose was used the method of computer tomography. The essence of the method consists in the visualization of the abdominal cavity in the native form. Followed by multiplanar reconstruction allows to evaluate the condition of the intestines, to identify pathognomonic signs characteristic of a particular form of obstruction.

The novelty of the proposed method is determination CT features characteristic of different forms of late adhesive intestinal obstruction in children.

On the scans obtained in the native form was evaluated the condition of the bowel (presence of pneumatization, the diameter of the intestinal loops, the separation of intestinal contents to the environment gas-chyme, the presence of collapsed loops of intestine, the thickness of the intestinal wall, free fluid in the abdominal cavity).

Doing the work, we are faced with the need for dynamic assessment of the disease, so the diagnostic algorithm was supplemented with an ultrasound examination of the abdominal organs. The evaluation of the condition of the intestine (the diameter of the intestinal loops, gas full the existence of different levels of liquid and gas, peristalsis, its direction, free from the effusion in the abdominal cavity) at admission and after 3-4 hours, on the background of conservative procedures. In parallel, with the positive dynamics in the clinical picture, was implemented giving oral barium sulfate with x-ray control according to the standard technique (review of radiographs using 3-6-12-24 hours).

7 patients of the main group (24,13%) who had undergone CT of the abdominal cavity in the native form, discovered CT features that characterize the

subacute form of the disease. In all the studied cases revealed features of intestinal obstruction: causes dilatation of the intestinal loops does not exceed 35 mm, in the collapsed loops downstream departments (Fig. 3.1), the thickness of the intestinal wall does not exceed 1-3 mm, which corresponds to the norm (M. Prokop, M. Galanski, 2006). In some cases, patients arrive from hospital where was already implemented giving barium sulfate. In this case, we used the methods of virtual reconstruction of oral contrasting bowel adhesions and assessed the deformation of the intestinal tube.

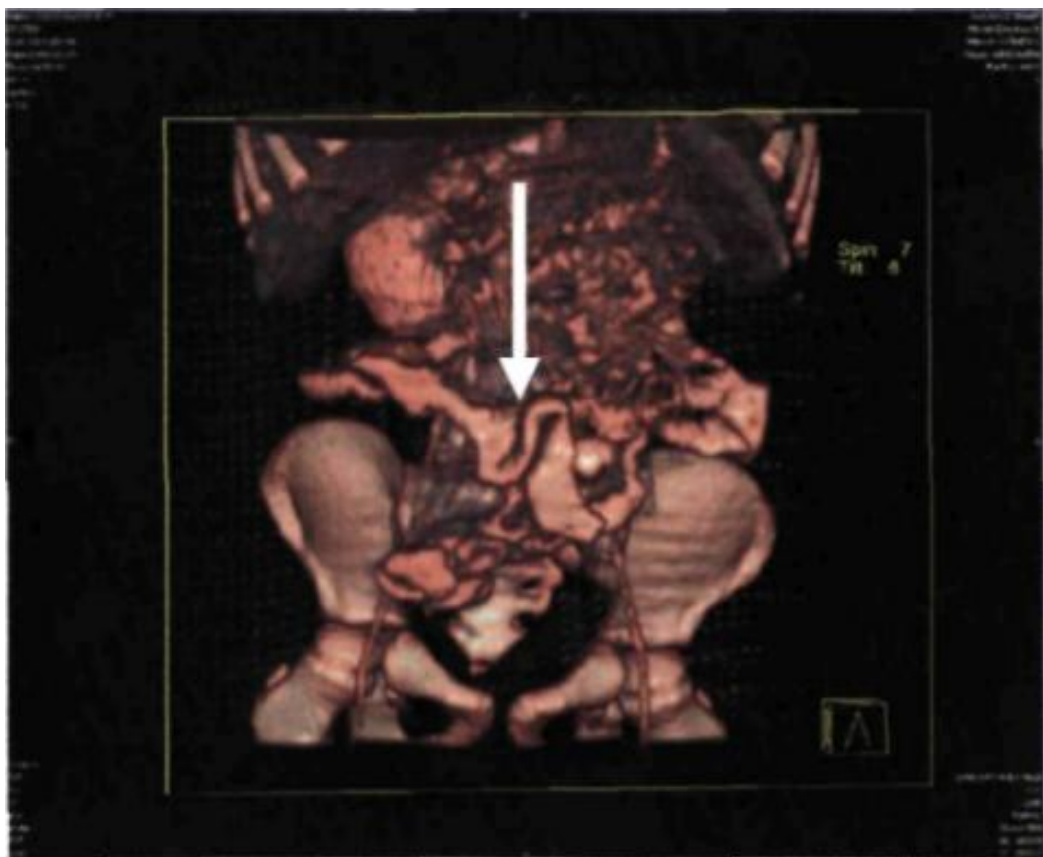


Fig. 3.1. Virtual reconstruction of the colon of a patient with subacute form KN after oral contrast. The white arrow indicates a region of adhesive deformation of the small intestine in the form of a shotgun.

In 11 (37,93%) cases CT scan was conducted, and was used plain radiography of the abdominal cavity in direct projection vertically and ultrasound examination of abdominal cavity. Radiologically, all 11 patients

experienced reduced uneven, gas full loops of small bowel in 5 cases (17,24%) identified the fluid levels. With ultrasound dilatation of the intestinal loops accounted 28-40 mm, pendulum type, with reduced peristaltic activity of small intestine was detected in all patients. Edematous-infiltrative changes in the gut with its fixation to the abdominal wall were found in two cases (6,89%). Positive dynamics by the results of dynamic ultrasound monitoring on the background of conservative events, were observed in 8 patients that made up 27.58% of the total number of patients in the group. The disappearance of the symptom "pendulum" and the emergence of orientation-stimulated motility was detected in all patients, dilatation of intestinal loops was 18-²⁷mm. In 3 cases X-Ray partial deposition of contrast while maintaining passage and the relief of abdominal pain syndrome.

In 3 patients (10.34%) of the total number of patients in the group, the results of ultrasound remained the "pendulum" nature of peristalsis, the thickness of the intestinal wall does not exceed 2 mm and persisted dilatation of the intestinal loops. The lack of progress of the contrast in 6-12 hours, and is also present abdominal pain syndrome, testified about the ineffectiveness of therapeutic measures. These children were exhibited indications for surgery. From 8 patients (of 27.58%) clinically obstruction wore acute: bottled cramping pain, swelling and asymmetry of the abdomen and the absence of stool and flatus, demanded the exclusion of strangulation impassability. They had done CT scan in the native form. In the study in the native form, in transverse sections more clearly identified the symptoms of intestinal obstruction - dilatation of the intestinal loops reached 42 mm, occurred intraluminal separation medium for gas-chyme, were visualized in the collapsed loop of bowel (Fig. 3.1). In some cases, was visible edematous mucosa of the small intestine (symptom of "fishbone") (Fig.3.2). In some cases, detected free fluid in the abdominal cavity.

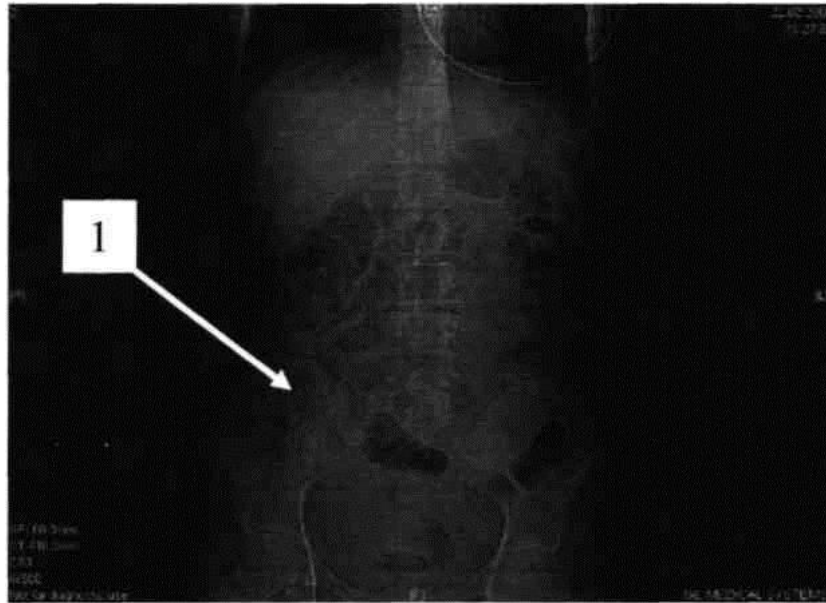


Fig. 3.2. CT in the native form of the patient A., 3 years 5 months, with the acute form of late adhesive intestinal obstruction, the cross-section. 1. Testing of bowel loops; 2. Collapsed loops of intestine.



Figure 3.4. CT in the native form of the patient D., 16 years, with the acute form of late adhesive intestinal obstruction, coronary projection. 1. Visible dilated loops of bowel with edematous mucosa in the form carringbush folds.

With the exception of acute disorders of mesenterial blood supply using ultrasound, on the background of adhesive intestinal obstruction, patients were prescribed conservative therapy. Dynamics were monitored clinically, the results of ultrasound examination of abdominal cavity and radiographic contrast studies. It should be noted that a set of interventions was effective in 2 patients out of 8, which accounted for 6.9% of the total number of patients in the group. Clinically stopped pain, it was noted the chair and carminative. For ultrasound of the abdominal organs appeared enhanced and directional motility on the background of infusion therapy and stimulation of intestinal motility. Resolution of obstruction is confirmed by the results radiopaque study of passage of barium sulfate.

The remaining 6 patients (20.69% of) were operated due to the lack of positive clinical, ultrasonic and radiological picture. In this ongoing conservative therapy was specific training. The intraoperative picture conform the results of the performed CT scan - presence of adhesive intestinal obstruction, mechanical in nature (Fig. 3.3).

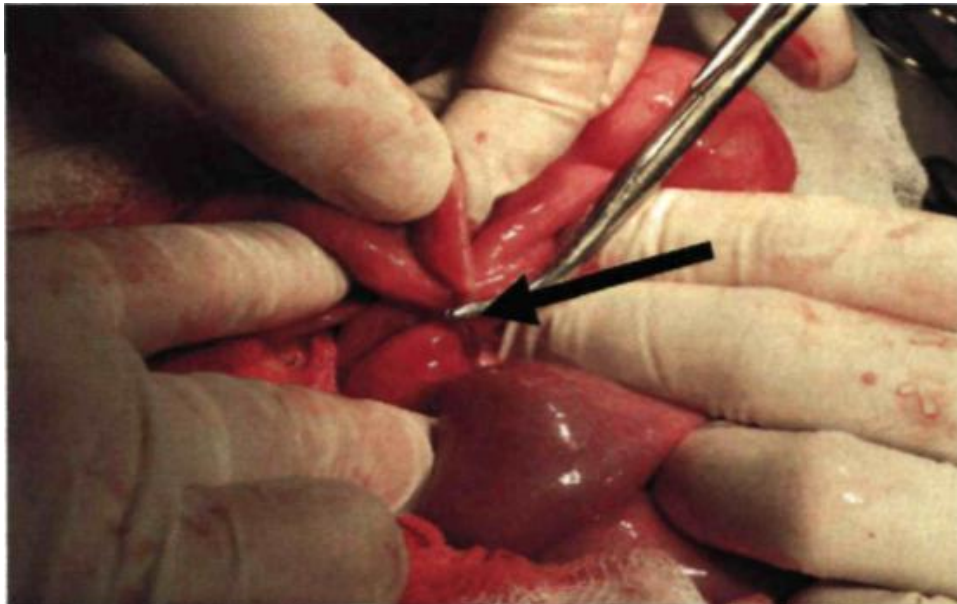


Fig. 3.3. Intraoperative picture in the acute form of late adhesive intestinal obstruction. Soldering between intestine loops (black arrow).

In three cases (10,34%) were diagnosed CFRP not require ultra sharp form. The presence of more than 42 mm extended and collapsed intestinal loops and intraluminal accumulation of gas bubbles was indicative of intestinal obstruction. Thickening of the intestinal wall greater than 4 mm, made it possible to judge expressed her edema.

The method of CT-in conjunction with the assessment of the clinical picture of the disease, allows to verify the form of the obstruction, thereby defining the possibility of more early surgical intervention.

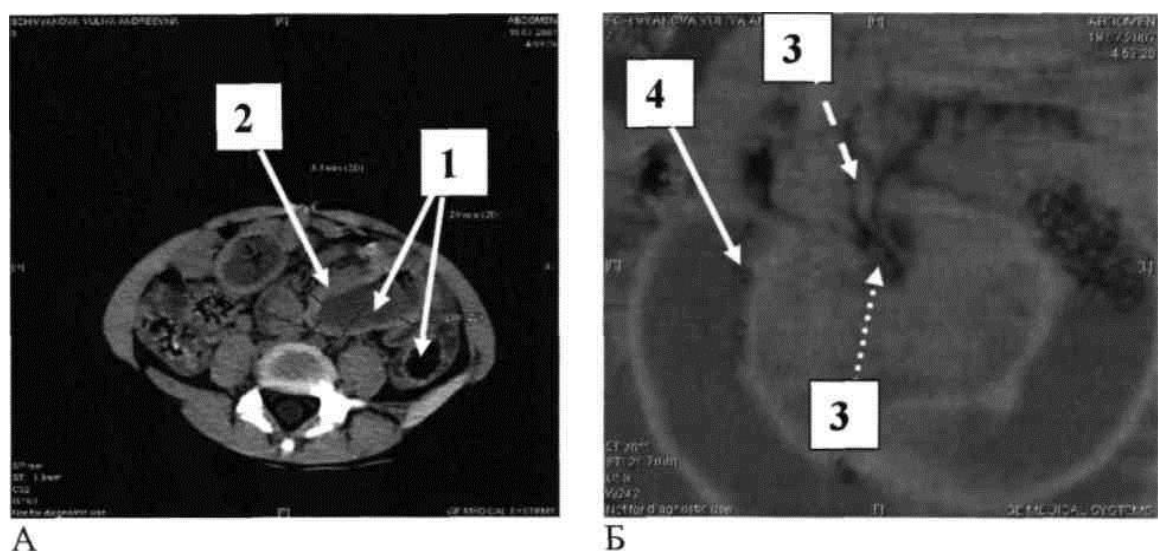
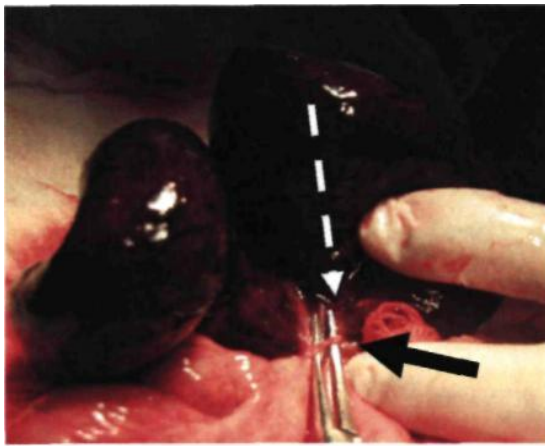
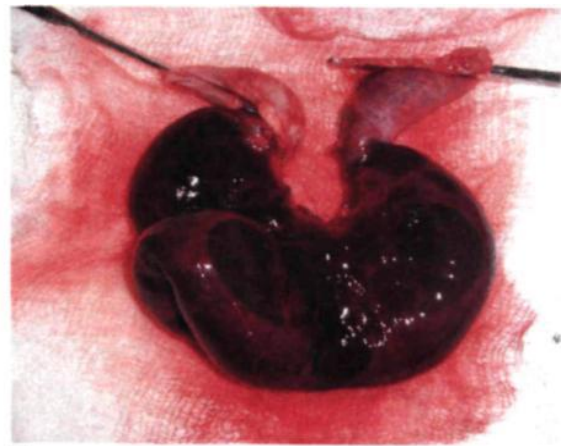


Fig. 3.6. CT scan of patient S., 6 years, with CFRP not require ultra sharp form of late adhesive intestinal obstruction. A - transverse section at the level of LIII; B - coronal projection; 1. Testirovanie loop of the small intestine; 2. Thickening of the intestinal wall up to 8.2 mm; 3. Convoluted, atypical course of mesenteric vessel (dotted white arrow), infringement of his or threadlike spikes (dashed white arrow); 4. Dilatation of loops of small bowel and intraluminal accumulation of gas bubbles in a "string of pearls".



A

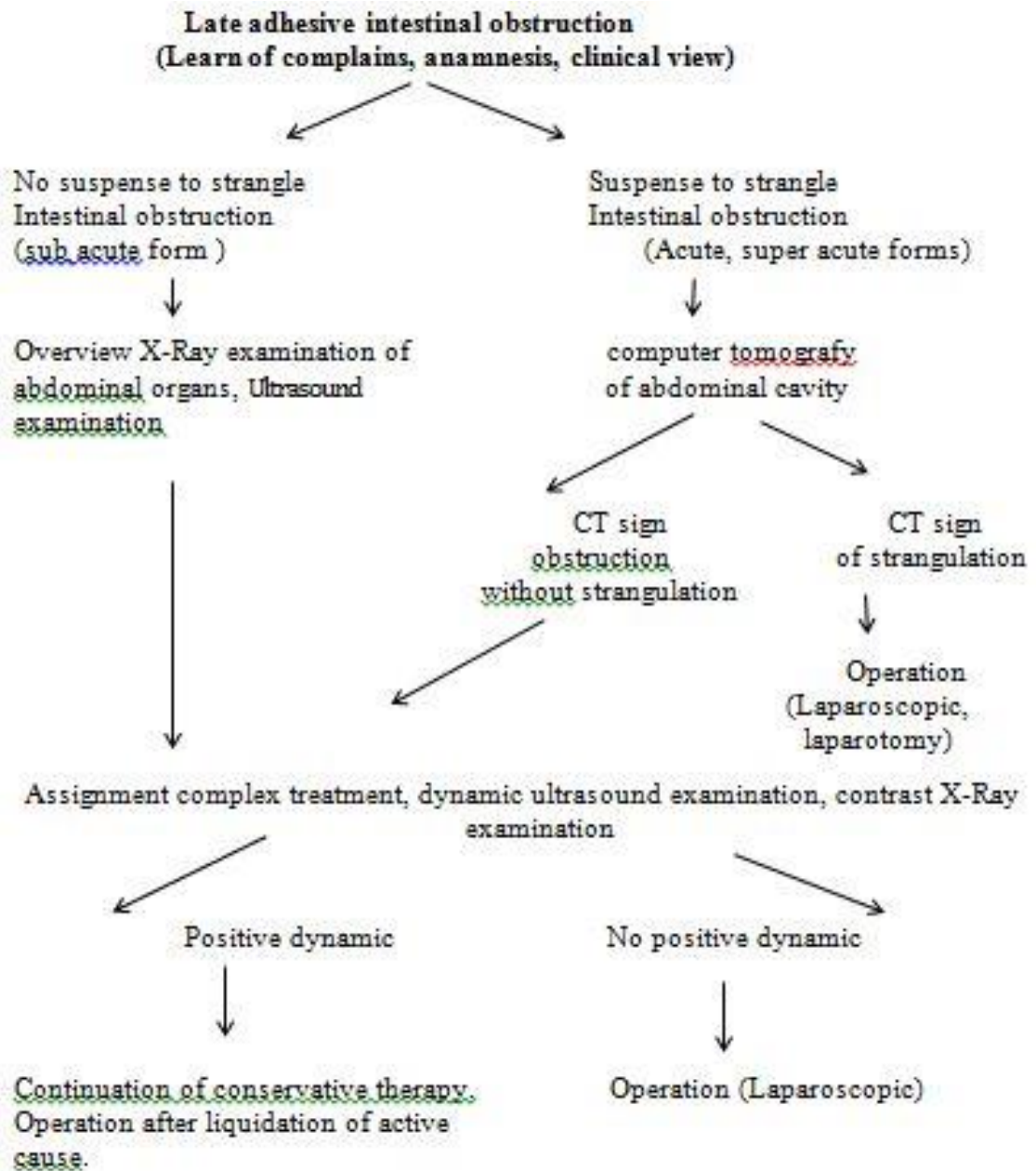


Б

Fig. 3.7. Intraoperative picture of the same patient that in figure 3.7.

A - infringement of the mesenteric vessels (discontinuous white arrow) threadlike adhesions (black arrow); B - macro specimens. Compliance with the rice.

3.6 B. Based on the above, the diagnostic algorithm looks as follows (scheme 3.1). Scheme 3.1 Optimized algorithm for the diagnosis of various forms of late adhesive intestinal obstruction in children



Thus, the use of an optimized diagnostic algorithm for late adhesive intestinal obstruction allows to obtain a greater amount of information than using only routine methods of examination. If you suspect a strangulated intestinal obstruction, differential diagnosis for optimal believe providenciamos tomography of the abdominal cavity. In other cases, the appropriate use of dynamic ultrasound monitoring and parallel radiopaque study of the passage through the gastrointestinal tract.

CHAPTER 4.

A comprehensive program for the treatment of patients with late adhesive intestinal obstruction.

4.1. General characteristics of clinical material.

The therapeutic program was developed based on the concept of pathogenesis syndrome female's failure.

According to published data, under the syndrome of enteral insufficiency understand the violation of the motor, evacuative digesting absorbing and barrier functions of the intestine. Conditions resulting in bowel obstruction inhibition of motor function of the gut, impaired digestion, and morphological violations of the intestinal wall contribute to the change in permeability of the vascular wall and microcirculation, which leads, in turn, to hypoxia, disruption of metabolic processes. When disturbed passage occurs contamination and excessive colonization of the intestinal tube, leading to endotoxemia, migration of microbial bodies in the blood stream and into the abdominal cavity [20; 27; 112].

Applying the algorithm of treatment of children with late adhesive intestinal obstruction, we sought to "break" the vicious circle, acting in a complex to all the mechanisms of its development.

In the analysis of clinical material observed that most california obstruction is subacute, occurring mainly boys aged 10-17 years. So, in the main group it was observed 62,06% of cases, and in control in 55,56% of cases. The most rare form is super acute. She noted 10.34% of the cases in the main group and 11.11% of cases in the control (Table. 4.1.1).

The study groups were divided into subgroups, which received either conservative therapy was carried out surgical intervention. The control group consisted of 27 conditionally healthy baby. Groups comparable by age and sex.

Evaluation of the effectiveness of the treatment program was conducted in three main groups of criteria: clinical, laboratory and statistical.

Table 4.1.1

Distribution of children with late adhesive intestinal obstruction the shape of the disease in the studied groups

Number of patients	Control group($n=27$)		Main group($n=29$)	
	Abs.	%	Abs.	%
Subacute	15	55,56	18	62,06
Acute	9	33,33	8	27,60
Superacute	3	11,11	3	10,34

Clinically assessed relief of abdominal pain syndrome, restoration of peristalsis and an independent chair. Assessments of intoxication syndrome on the temperature of the reaction, the normalization of heart rate and restoration of activity of patients.

Laboratory criteria for evaluating the effectiveness of therapy were as follows: leukocytosis, erythrocyte sedimentation rate. Statistical criteria: the number of hospital bed-days and the frequency of readmissions to the hospital.

4.2 Clinical and laboratory effectiveness of conservative therapy.

The algorithm of conservative therapy used in patients of the main group, was based on the following positions:

1. Infusion therapy;
2. Pharmacological stimulation of motility of the intestine;
3. Antibiotic therapy;
4. Gut decontamination and enterosorption;
5. Stimulating the energy processes therapy;
6. Early enteral nutrition adapted mixtures;
7. Polyenzyme therapy;
8. The purpose of prebiotics.

Infusion therapy was aimed at filling the volume of circulating fluid, treatment fluid and electrolyte disorders and the improvement of microcirculation. Infusion volume was calculated from the daily physiological needs of organism and pathological loss and daily diuresis. Used such environments as infusion of 10% glucose solution, 0.9% sodium chloride solution. To improve hemodynamics, blood rheology and microcirculation was used in 6% isotonic solution of hydroxyethyl starch (Refortan HES"). To restore the energy potential of the cells, antihypoxic and antioxidant action, use a solution for infusion-Reamberin. Calculation of medications was carried out in accordance with the recommendations of the manufacturers. Correction of electrolyte abnormalities was carried out with appropriate solutions of electrolytes, depending on their age of the needs of the body, under the control of biochemical analysis of blood.

Pharmacological stimulation of intestinal motility was performed after fluid resuscitation. As drugs that enhance intestinal peristalsis, was prescribed 0.05% solution of neostigmine at the rate of 0.1 ml on 1 year of a child's life (not more than 1.0 ml). In addition to its stimulating the motility of bowel action after 15 minutes was administered intravenous hypertonic solutions of sodium chloride and glucose, at the rate of 1.0 ml at 1 year of a child's life (not more than 10 ml). To relieve peripheral vasospasm and partial blocking of the influence of the autonomic ganglia, the stimulation regimen consisted of 0.25% solution of novocaine. 30 minutes after intravenous administration of drugs was performed enema 10% solution of sodium chloride.

Antibacterial therapy was preventive in nature. The drugs of choice were considered to be cephalosporin-II and III-th generations. Gut decontamination was begun with the first day. Applied drugs of aminoglycoside - kanamycin. In connection with its low absorption from the lumen of the intestine, has been used oral route of administration. In parallel was administered chelators (smectite, activated charcoal) in the age dosages. The duration of decontamination and enterosorption not exceed 5 days. The metabolic processes

of the organism stimulated with 2% solution of Riboxin, methyluracil, lipoic acids and glutamine.

For early stimulation of trophic functions of the gut started feeding adapted mixtures ("Nutrizon", "klinutren") since the beginning of the second day. The patient was transferred to the surgical table. Enzymatic support was provided from the enteral prescribing drugs: Mezim-Forte, festal, Kreon and Wobenzym". Possessing a proteolytic enzyme (hyaluronidase) activity, immunomodulators, chelating, antioxidant and anti-inflammatory properties, the drug has immunomodulatory, detoxifying, antioxidant action. Wobenzym has not only the ability to depolymerize the matrix of connective tissue in fibro-granulomatous formations, but also to suppress the reverse (regulatory) reaction aimed at the synthesis of components of connective tissue. Wobenzym reduces the period of acute phase of inflammation, regulates (increases or decreases depending on the initial level) the synthesis of inflammatory mediators (interleukin-1 ifactor tumor necrosis), improves body resistance to infection and humoral immune response. The drug was administered orally, 1 tablet per 6 kg body weight 2 times a day 30 minutes before meals or 2 hours after a meal with prebiotic used order duphalac. The action of the drug, in the form of stimulation of peristalsis and "relief" stool due to its osmotic properties. The drug was administered in the morning on an empty stomach, in the age dosage.

The use of postoperative therapeutic interventions hydrolytic enzymes in the complex enzyme preparations allows you to get a better effect than nonfermented drugs. We conducted the study demonstrated that during the adhesive process under normal conditions is accompanied by the resorption of adhesions of the abdominal cavity. Included in Wobenzym enzymes helped to prevent the development of adhesions and excessively developed destroyed scar tissue with restoration of homeostasis in the damaged peritoneum. This phenomenon is due to the fact that multienzyme preparations are sold qualitative relationship between formation and resorption of fibrous tissue, including intra-abdominal adhesions [16].

The use of the developed complex conservative therapy aimed at the resolution of obstruction, led to the following results (Table. 4.2.1).

Table 4.2.1

The efficiency of different schemes of conservative treatment of adhesive intestinal obstruction

Groups Forms of LAIO	Control group(π=27)		Main group (π=29)	
	abs	%	Abs.	%
Subacute	12	44,44	14	48,27
Acute	1	3,70	2	6,89
Superacute	0	0	0	0
Total	13	48,14	16	55,16

From the table it is visible that in control group where treatment by a traditional technique was carried out, conservative therapy was effective at 13 patients that it has made 48,14% of cases. In the main group, treated according to the developed program, conservative therapy with positive effect at 16 patients - 55,16% of supervision.

It is possible to judge efficiency of the developed program of conservative therapy of late adhesive intestinal impassability on the value in dynamics of clinical signs (Tab. 4.2.2). In a main group activity of patients was restored on average to second day, clinical symptoms of intoxication were stopped in a first day, indicators of pulse and temperature were normalized within a day, the pain syndrome was quicker stopped, the vermicular movement and an independent chair were restored on second day. In control group the studied indicators were restored considerably after (Tab. 4.2.2.).

Assessing the dynamics of the laboratory results in the groups, we obtained the following results.

Table 4.2.2.

The comparative characteristic of clinical signs at various schemes of conservative therapy in the studied groups

Groups Clinical sign	Main group; Me (p25;p75); (n=16)	Control group; Me (p25;p75); (n=13)
Reconstruction of patient condition	2 (1;2)	3(3; 3,5)
Disappearance of intoxication symptoms	1 (0,5; 2)	3(0;3)
Pulls normalization	1 (1;2)	2(2;3)
Normalization of temperature reaction	1(0; 1,75)	2(2; 3)
Disappearance of pain	1,75(i;2)	3 (2,5; 4)
Reconstruction of gut peristalsis	2 (1,25; 2)	3(3; 3,5)
Reconstruction of toilet	2 (1,5; 2)	3 (2,5; 3)

Patients in both groups at admission indicators of leukocytosis, ESR essential differences between them had not. In both groups there was a decline in leukocyte count relative to the initial level.

In the main group significant differences observed for 4-5 days, in the control group for 6th to 9th days ($P<0.05$). While in the control group from 4 days was a tendency to leukopenia: 6-9 days, the leukocyte count reached 5,20 (4,70; 5,60), while in the basic group this index was, on average, equal the 7.43 (6,75; 8,64).

When entering the indicators of erythrocyte sedimentation rate in the studied groups were identical. In the main group, in the dynamics of the indices of erythrocyte sedimentation rate did not change, being at the level of 3-4 mm/h. In the control group tended to increase this figure, which reached its maximum by 3 days. Differences between groups significant ($P<0.05$). 4-5 day recorded a significant decrease in ESR in an average of 2 mm/h, which can be associated

with clinical improvement in this group. In the future, for 6-9 days again has been a relative increase this figure to 7 mm/h.

Thus, the analysis of the results of clinic-laboratory efficacy of the therapy in the studied groups showed the advantage we have developed a comprehensive program of conservative treatment of children with late adhesive intestinal obstruction over traditional methods. In favor of this statement are facts of a more general patient condition and refreshment bowel function, as well as, more well-marked track reconstruction studied laboratory history.

4.3 Clinical and laboratory substantiation of a choice of operational tactics and postoperative management of patients with late adhesive intestinal obstruction.

Choosing the method of surgery, we took into account the following criteria. If patients in the anamnesis there were indications PSCN relapses (repeated admission about the underlying disease), while there were positive dynamics from conservative treatment carried out, these children were scheduled endovideosurgical intervention in 3-4 days after resolution of the obstruction.

The ineffectiveness of conservative therapy and diagnosed at the preoperative stage, the necrosis of the intestine, were the indications for emergency surgery. In this case the preference was given to minimally invasive methods of intervention. In case of failure of the laparoscopic restoration of the intestinal passage, was made the conversion.

In table 4.4.1.presents data on the number of performed surgeries in the groups studied.

The table shows that out of 27 children in the control group in the emergency order, by laparotomy in the operated 14 patients, which amounted to 51,85% of cases. Resection of intestine with regard to its necrosis was required in 2 cases (7,41%).

Table 4.3.1.**Methods of surgical interventions used in the groups studied**

Group operation method	Control group ($n=27$)		Main group ($n=29$)	
	Abs	%	Abs	%
Emergency laparotomy	14	51,85	3	10,34
Emergency laparoscopy	0	0	7	24,13
Conversion	0	0	3	10,34
Planned laparoscopy	0	0	5	17,24
Total	14	51,85	18	62,05

Of the 29 children of the main group operated 18 people — 62,05% of cases. The increased operational activity due to the planned endovideosurgical interventions in 5-th patients (17,24%) completed in 3-4 days after conservative resolution of bowel obstruction.

On an emergency basis, in the main group were operated 13 (44,8%), and laparotomy was performed only three (10,34%): in one case, preoperative diagnosed with a necrosis of the intestine.

Endovideosurgical intervention in emergency was performed in 10 patients, which made up of 34.48% of the total number of patients in the group. Of these 3 patients (10,34%) laparoscopic separation of the adhesions was impossible due to massive adhesions in the abdominal cavity, produced by the conversion.

Therapy in the postoperative period was based on the key aspects of the pathogenesis of enteric insufficiency and the prevention of the initiation of adhesion formation.

In addition to the complex conservative therapy was developed, which was used in the postoperative period, was assigned partial parenteral nutrition patients (aminoven, dipeptiven, lipofundin, kabiven-Central). Calculation of

parenteral nutrition agency based on the daily needs of the organism in proteins, fats and carbohydrates under biochemical control of nitrogenous wastes blood. Infusion therapy is continued until the relief fluid and electrolyte disorders, they assessed the level of hemo-concentration.

Pharmacological stimulation of the motor function of the gut began at the second day of the postoperative period. The stimulation regimen did not differ from that with conservative therapy.

If necessary used pain medications. We gave preference to purpose and lytic compound in the form of a 50% solution of dipyrone and 1% solution of diphenhydramine. The duration of the appointment of analgesics does not exceed 1-2 days.

With 2-day appointed trophic food adapted nutrition mixtures ("Klinutren", "Nutrizon"). When you restore functions of the gastrointestinal tract was carried abolition of parenteral nutrition, expanded the amount of administration of the adapted mixtures, the patient was transferred to the surgical table (salt-free diet with the food products for a couple).

Selective decontamination and enterosorption, started at admission and continued for the next 5 days.

From the first days of the postoperative period was administered complex physiotherapy treatment aimed initially at stimulating the motility of the intestine (UHF to athermal dose No. 3), and then warning of adhesion formation (electrophoresis with potassium iodide, magnetic-laser therapy). With 2-3 days of postoperative period and throughout the period spent in the hospital to therapy connected medical massage of the anterior abdominal wall and thorax.

Preparation Wobenzym was administered 1 tablet per 6 kg body weight 2 times a day 30 minutes before meals or 2 hours after meals between 2 to 5 weeks. The drug was used from 3 days after surgery. In Wobenzym consisted of the following: Pancreatin 345 P. E. P.-U, trypsin 360 F. I. P.-U, chymotrypsin

300 F. I. P-U, papain 90 F. I. P-U, bromelain 225 F. I. p.-U, amylase 50 F. I. P-U, lipase 34 F. I. P-U, rutin 50 mg.

The application of the developed integrated therapy postoperative period allowed us to obtain the following results (Table. 4.4.2).

Table 4.3.2.

Comparative characteristics of clinical signs in the postoperative period in the studied groups

Group Clinic sign	Main group, (days); Me(p25;p75); (n=13)	Control group, (days); Me (p25;p75); (n=14)
Patient activity	3(3;4)	5 (4; 6)
Disappearance of intoxication	3 (2,5; 4)	5 (3,5; 6)
Pulse normalization	2 (2;3)	4 (3;5)
Normalization of body temperature	2(2;3)	5 (4,5; 6)
Disappearance of abdominal pain syndrome	2,5 (2;3)	5,75 (5; 6)
Reconstruction of gut peristalsis	3 (2;3)	4,75 (4; 5)
Reconstruction of independent toilet	3 (2; 4)	5(4; 6)

When comparing the clinical picture of the disease in the studied groups, significant differences in all studied parameters ($P < 0.005$). So, in the main group normalization of the pulse, the temperature of the reaction was taken place by the end of the second day, malevolence was stopped by the middle of the third day, the activity of patients, relief of clinical manifestations of intoxication syndrome, restoration of function of the gastrointestinal tract marked by the end of the third day (Table. 4.3.2).

In the study of laboratory parameters, we obtained the following results.

The level of hemoconcentration measured at hematocrite number, on the first day, both in main and in the control group, statistically significant differences had, reaching 41,40 (38,00; of 43.00) % 44,00 (43,00; 49,00) %, respectively (Fig. 4.3.1).

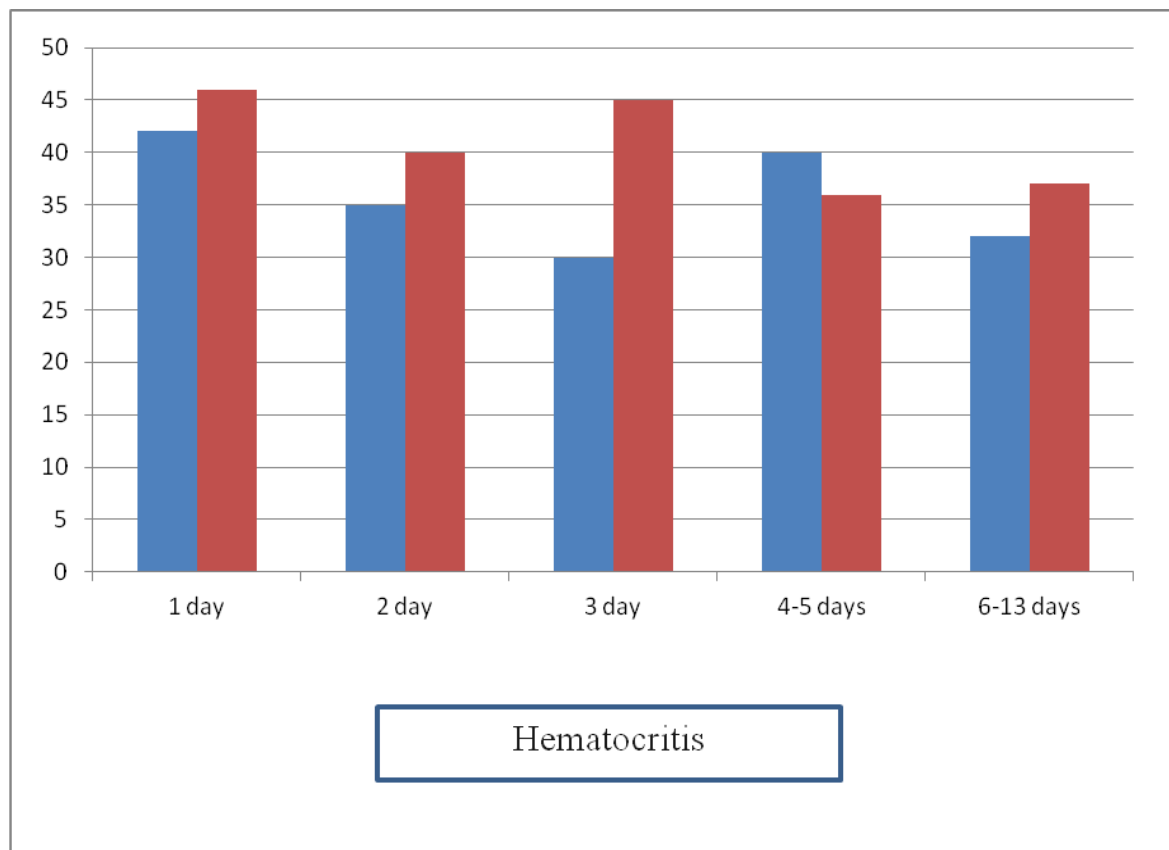


Fig. 4.3.1. Essential marketing dynamics in the postoperative period in the studied groups. In the main group, from the second day, showed a significant decrease in hematocrit, and by the third day registered the relief of symptoms of hemoconcentration - hematocrite the number decreased to 30.80 (29,90; 32,60)%.

Trend of increase in haemotocrite 4-5 days due to the abolition of infusion therapy. In the control group on the 3rd day, the figure was 38,40 (36,80; 42,50) %, ($P < 0.05$), indicating a lack of hemodilution. 4-5 and 6-9-e attistities significant differences between the groups were not recorded.

Table. 4.3.3.**Dynamics of indicators of blood in the study groups**

Sign days	Leucocytes, ($10^9/L$)	EST, (mm/o)
	Me; (p25; p75)	Me; (p25; p75)
Main group, ($n=13$)		
1	11,10 (9,40; 13,10)	3,00 (3,00; 4,00)
2	9,55 (7,60; 15,80)	6,00 (3,00; 9,00)
3	7,25 (4,85; 11,50)	4,50(4,00; 10,00)
4-5	8,10 (5,89; 8,4)	6,00 (3,00; 9,00)
6-9	7,10 (5,30; 8,54)	5,00 (3,00; 8,00)
Control group, ($n=14$)		
1	11,40 (9,70; 17,00)	4,00 (3,00; 5,00)
2	18,40 (13,20; 20,40)	11,50(9,00; 15,00)
3	9,80(7,80; 14,00)	15,00(7,00; 24,00)
4-5	9,05 (6,90; 10,00) 9	27,00 (17,00; 30,00)
6-9	8,25 (5,90; 9,80)	23,50 (15,00; 29,00)

4.4 Medico-social efficiency of the developed program of treatment of children with late adhesive intestinal obstruction.

The effectiveness of treatment of patients by the developed program was evaluated by the number of hospital bed-days and number of readmissions of patients within three years.

Thus, the number of bed-days spent by patients of the main group in the hospital and received conservative therapy, were equal to the average of 6.5 (5; 11), against 12 (10; 14) of the control group (Fig. 4.4.1).

The operated patients of the main group received treatment on average 10 (9; 10) bed-days, and control group - 13 (12; 15) (Fig. 4.6.1). Differences statistically significant, $P=0.001$.

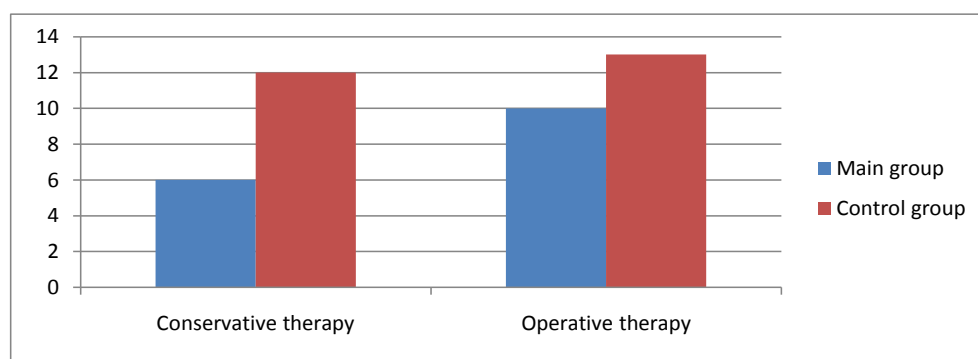


Fig. 4.4.1. Dynamics of indicators of patient days in the study groups depending on the method of treatment

In the main group of 29 patients received re-treatment 5 people that made up 17.24% of cases. In the control group of 27 patients re-hospitalized 14 kids that made up 51.85% of cases. The frequency of readmissions in the main group decreased in 2.8 times.

Analysis of statistical criteria showed that the treatment of pediatric patients as we developed the program has a high medical and social importance. The reduction of the patient's stay in a hospital bed implies reducing the financial costs of the medical institution, reducing the number of repeat calls indicates a major role of the proposed method of treatment in the prevention of recurrence of the disease.

Thus, the combination of clinical, laboratory and statistical criteria of evaluation demonstrates the advantage of developed programs over traditional methods of treatment of children with late adhesive intestinal obstruction.

The application of integrated conservative therapy allows to achieve a positive effect in a larger cohort of patients. Selection of the optimal method intervention, as well as the use of pathogenetically reasonable tactics of postoperative management of patients determine a more favorable course of the postoperative period. The feasibility of our developed program proven to reduce the number of relapses and the reduction of the patient's stay in a hospital bed.

CONCLUSION

Completed work is devoted to the substantiation of the complex program of diagnostics and treatment of children with various forms of late adhesive intestinal obstruction.

The problem of late adhesive intestinal obstruction caused by a high frequency of occurrence, reaching 20-50%, the ability to acquire recurrent nature of the flow. As a result of late diagnosis, 30-40% of patients surgery was performed more than 24 hours from the time of the disease, the mortality rate reaches 19-20%.

Existing diagnostic methods are routine, not enough informative, time-consuming and not always possible to answer questions. The lack of a uniform approach to recognition of various forms of late adhesive intestinal obstruction dictates the need improvements diagnostic algorithm using new, modern methods.

Apply conservative and surgical methods of treatment of late adhesive intestinal obstruction are often not bring the expected results, and the combination of the known methods do not always satisfy the surgeons. Developing in the postoperative period the motor-evacuation disorders of the gut often require special treatment, the resulting changes in the immune status of the lead to dysfunction of the process of regeneration, which is fraught with complications. The basis of this study expected clinical rationale developed a program of diagnosis and treatment of pediatric patients with advanced peritoneal cavitalintestine who were in surgical wards AMCMC. To confirm the effectiveness of developed program formed two clinical groups (56 people), correlated by age-sex composition and forms PSKN. In the main group, consisting of 29 children of both sexes aged 2 to 17 years, diagnostic and treatment activities were conducted as we developed the program. The control group consisted of 27 patients whose diagnostic procedures and treatment were carried out according to traditional methods.

The basis we developed a diagnostic algorithm for late adhesive intestinal obstruction in children, based on the principle of computed tomography of the abdomen. This technique was used in 18 patients (62,06%) of the main group. 24.13% of cases (7 children) discovered the CT features that characterize the subacute form of the disease. In all the studied cases revealed features of intestinal obstruction: causes dilatation of the bowel loops up to 35 mm, in the collapsed loops downstream departments. The thickness of the intestinal wall does not exceed 1-3 mm. In of 27.58 % of cases (8 children), in a study in the native form is more clearly identified the symptoms of intestinal obstruction - dilatation of the intestinal loops reached 42 mm, occurred intraluminal separation medium for gas-chyme, were visualized in the collapsed loop of bowel. The thickness of the intestinal walls no more 4 mm.

This CT pattern characterizes the acute form of late adhesive intestinal obstruction. 10.34% of cases (3 patients) based on CT scan was diagnosed with CFRP not require ultra sharp form. Thickening of the intestinal wall greater than 4 mm, the presence of more than 42 mm extended and collapsed intestinal loops and intraluminal accumulation of gas bubbles, the lack of accumulation of contrast medium in the intestinal wall.

The absence at admission clinical manifestations PSN from 11 patients (37,93%) allowed us to perform CT. In these cases by plain radiography of the abdominal cavity and ultrasound examination. However, all 11 of the patients radiographically, was observed syreniale strange-filling the loops of small bowel in 5 cases (17,24%) identified the fluid levels. Dilatation of intestinal loops, as measured by ultrasound, was 28-40 mm, pendulum type, with reduced peristaltic activity of small intestine was detected in all patients, edematous-infiltrative changes in the intestinal wall were found in 2 cases (6,89%), fixation of loops of bowel to the anterior abdominal wall in 2 cases (6,89%). These children were prescribed conservative therapy, the efficacy of which was evaluated by the results of dynamic ultrasound monitoring. Positive dynamics, characterized by the disappearance of the symptom "pendulum" movement of

chyme, the emergence direction of peristalsis, reduce the intestinal loops dilated to 18-27mm, was observed in 8 patients (of 27.58%). Held in conjunction radiopaque study in 4 cases (13.79%) revealed partial deposition of contrast while maintaining passage and the relief of abdominal pain syndrome. In 3 patients (10.34%) of the total number of patients in the group, the results of ultrasound and radiopaque study ascertained the ineffectiveness of the therapy.

On the basis of the obtained results was optimized diagnostic algorithm in pediatric patients with late adhesive intestinal obstruction. Treatment tactics was chosen on the basis of established diagnosis. In the absence of indications for emergency surgery were prescribed a conservative treatment program, which included infusion therapy, correction of electrolyte disorders, drug-induced stimulation of motility of the gut, antibiotic therapy, gut decontamination and enterosorption, stimulating the energy processes in therapy, early enteral nutrition adapted mixtures, the appointment of probiotics and enzyme therapy. Control, as mentioned above, was carried out by instrumental methods (dynamic ultrasonic monitoring and radiopaque study of the passage).

A very important parameter in the evaluation of the used methodology is the determination of the probability of transition from one state of health to another and compare the effectiveness of drugs. Thus, according obtained in our study results, it was noted that the use in patients of group №1 of antiadministration with polyezyme therapy has helped to reduce the development of recurrent intestinal obstruction, as well as assure prevention of purulent-inflammatory complications in children in the postoperative period.

Developed a program of conservative therapy had a positive effect in 16 patients, which amounted to 55.16% of cases, while the use of traditional techniques makes it possible to resolve the obstruction in 13 patients, accounting for 48.14% of cases.

The effectiveness of the developed program was evaluated by clinical, laboratory and statistical criteria.

In the main group of clinically observed earlier relief of symptoms of intoxication - by the end of 1 days, in the control group at 3 days. Activity patients of the main group recovered by 2 days, the control group at 3; pain syndrome was arrested completely by the end of 1 days, in the control group by the end of 3. Peristalsis and an independent chair was restored to 2 days, while in the control group to 3-m. When choosing the method of operative intervention preference was given to minimally invasive techniques.

The value of endovideosurgical treatment method due to the least risk of development of adhesions, the most favorable postoperative period and reducing the frequency of complications. Laparoscopic interventions were performed in emergency and in a planned manner, i.e. 3-4 days after represent productivity conservative methods. In the main group as planned laparoscopically operated on 5 patients, which accounted for 17,24% of cases. In emergency intervention is made of 13 children, which accounted for 44.82% of the cases, of which laparoscopic visceralization 7 patients (24,13%), in 3 cases (10,34%) conversion was required, in connection with the presence of massive adhesions in the abdominal cavity. 10.34% of cases (3 patients) surgery done the traditional way because diagnosed at the preoperative stage of necrosis of the intestine and the presence of concomitant oncological pathology. In the control group, all surgical intervention, which amounted to 51,85%) of cases (n=14) of the total number of children in the group were performed by laparotomic access.

Management of patients in the postoperative period was based on pathogenetic aspects of the syndrome of enteral insufficiency, which is initiated by the appearance LAIO. The main key points of the developed program of postoperative therapy consisted in the appointment of infusion therapy based physiological needs, taking into account pathological losses; stimulating the energy processes of therapy; drug-induced stimulation of motor function of intestine; antibacterial therapy; decontamination; enterosorption; adequate pain management; if necessary, partial parenteral nutrition (aminoven, dipeptiven, aminoplasma, lipofundin, kabiven-Central); early trophic food adapted mixtures

("klinutren", "Nutrizon") with the gradual expansion of the volume of feeding; physical therapy; therapeutic massage; prebiotics (duphalac) and of the ferment therapy (enteral - Kreon, festal).

The effectiveness of the developed scheme of therapy in the postoperative period was evaluated according to clinical, laboratory and statistical criteria. In the main group the physical activity of patients had recovered by 3 days, the intoxication syndrome was arrested by the end of the 3rd day, normalization of pulse and temperature of the reaction occurred 2 days after surgery, pain had ceased to bother by the middle of the 2-day, peristalsis and an independent chair recovered within 3 days. In the control group physical activity has recovered to 5 days, the intoxication syndrome was arrested by the end of the 5th day, normalization of pulse and temperature of the reaction occurred after 4 and 5 days respectively after surgery, pain stopped bothering by the end of 5 days, peristalsis and an independent chair recovered for 4.5 - 5 days.

In laboratory indicators in patients of the main group normalization of leukocytosis was noted on the 2nd day in the control to 3. the ESR Level of the patients of the main group were within normal values in the control group from 2 days erythrocyte sedimentation rate exceeded the normal values, increasing in the future. Significant differences in this indicator was registered during the recovery period.

The number of patient-days spent by patients of the main group in the hospital and received conservative therapy, were equal to the average of 6.5 (5; 11), against 12 (10; 14) of the control group, a decrease of almost 2 times. The operated patients of the main group received treatment on average 10 (9; 10) bed-days, control group - 13 (12; 15). Hospital stay was reduced in 1.3 times ($P=0.001$). The frequency of readmissions in the main group decreased by 2.8 times: from 29 patients were re-treated 5 people that made up equal to 17.24% of cases in the control group of 27 patients re-hospitalized 14 kids that made up 51,85% of cases.

The totality of the studied criteria, in the framework of the performed work, convincingly demonstrated the advantages of the developed complex program of diagnostics and treatment of various forms of late adhesive intestinal obstruction in pediatric patients.

CONCLUSION

1. The use of computed tomography in children with late adhesive intestinal obstruction allows to verify its form. The use of an optimized diagnostic algorithm in pediatric patients with the given pathology allows to deliver timely clinical diagnosis and to prescribe an appropriate treatment.

2. Developed a program of conservative therapy and postoperative management of children with various forms of late adhesive intestinal obstruction, due to the impact on various links in the pathogenesis of syndrome of enteral insufficiency, allows to achieve good clinical, laboratory, and health and social indicators.

3. The use of postoperative therapeutic interventions hydrolytic enzymes in the complex enzyme preparations allows you to get a better effect than nonfermented pre-preparations. We conducted the study demonstrated that during the adhesive process under normal conditions is accompanied by the resorption of adhesions of the abdominal cavity. Included in Wobenzym enzymes helped to prevent the development of adhesions and excessively developed destroyed RUB-zovuw tissue with restoration of homeostasis in the damaged peritoneum. This phenomenon is due to the fact that multienzyme preparations are sold ka-quantitative correlation between the formation and resorption of fibrous tissue, including intra-abdominal adhesions.

PRACTICAL RECOMMENDATIONS

1. Examination of children with LAIO should be comprehensive and include a CT scan and dynamic ultrasound monitoring.
2. Conservative therapy and postoperative management of children with this pathology should be comprehensive and include, in addition to traditional schemes, stimulation of energy processes, optimal enteral nutrition, enzyme therapy.
3. Core components of treatment in this group of patients are selective decontamination and enterosorption.
4. The use of the drug Wobenzym in the treatment of children with LAIO can significantly improve the results of treatment and is highly effective in prevention of adhesion formation.
5. When choosing the method of surgical intervention in children with LAIO preference should be given to methods of endovideosurgical treatment.
6. When recurring throughout the late adhesive intestinal obstruction after conservative resolution, it is appropriate to perform the planned laparoscopically adhesiolysis.
7. Given the time for recurrence of peritoneal commissures in abdominal cavity, as well as an increase of clinical manifestations and complications, children with this disorder are subject to clinical examination with the time of control examinations after 1, 6 months, and then - 1-2 times a year.

LITERATURE

1. Abdulzhalilov M. K. Ways to improve nasointestinal drainage in patients with intestinal obstruction and peritonitis // *Khirurgiya*. - 2003. - No. 4 - Pp. 39 - 41.
2. Abdullaev E. G. Postoperative functional bowel obstruction (prevention and treatment) : author. dis. ... d-RA med.Sciences. - SPb., 1998. 30 s.
3. Abdullaev E. G. lysis of adhesions under video control in emergency and planned surgery adhesive disease of abdominal cavity organs / E. G. Abdullaev, V. V. Fedenko, A. And Alexandrov [et al.] // *Endoscopic surgery*. - 2001. - №3 - Pp. 13-15.
4. Alibaev A. A. Diagnosis and treatment of early adhesions-paretic intestinal obstruction in children : author. dis. ... candidate.med. Sciences. -Ufa, 2008.-21 C.
5. Andriitsev I. L. long-term results of treatment of acute adhesive small bowel obstruction with different surgical method / andriitsev I. L. [and others] // *Materials of the Plenum of the management Board. ROS. assots. endoscopic surgery and Mezhsregion, proc. surgeons*. — Krasnodar, 2002. — Pp. 12-13.
10. Babkova I. V. Ultrasound diagnostics of violations of blood in abdominal cavity flow in acute small bowel obstruction using Doppler ultrasound / I. V. Babkov, L. B. Mishukov, CE. Larichev // *Med. visualization*. - 2000. - №3 — Pp. 5—9.
11. Bairov G. A. Urgent surgery of children: the hands. for doctors. - SPb.: Peter press, 1997. - 462 p.
12. Baranov G. A. Laparoscopically.ephedrine: prospects of application in surgery of the intestine: proc. Dokl. 4 vseros. Congress of endoscopic surgery / G. A. Baranov, SI.Parunov // *Endoscopic surgery*. - 2001. — No. 2 - Pp. 8 — 9.
13. Beburishvili, A. G. Adhesive illness / Beburishvili A. G., [et al.] // *Endoscopic surgery*. — 2003. - No. 1 — Pp. 51-64, Beburishvili A. G.
14. Asymptomatic of spikerushes: surgical tactics in laparoscopic operations / Beburishvili, A. G.,Mikhin I. V.,A. A. Vorobyev//*Endoskopicheskaya*. - 2006. - №4 - p. 10 – 14.

15. Beburishvili, A. G. Laparoscopic surgery of prespecialty / beburishvili A. G., [et al.] // Surgery. - 2004.
16. Beburishvili, A. G. minimally Invasive techniques in the diagnosis lechenie painful forms of adhesive disease / A. G., Beburishvili [etal.] // Vestn. surgery. - 2004. - No. 2 - Pp. 38 - 40.
17. Beresneva E. A. X-Ray examination in "acute abdomen" // Med.visualization. - 2004. - №3 - Pp. 6 - 25.
18. Verbitskiy, D. A. Application of the gel of carboxymethylcellulose for prevention of adhesion formation in the abdominal cavity : dis. ... candidate. med.Sciences. - SPb., 2004. - 136 p.
19. Vishnevsky A. A. electrical Stimulation of the gastrointestinal tract / A. A. Vishnevsky, V. A. Livshits, M. Vilensky. - M. : Medicine.- 1978.- 184.
20. Gamzaev CM. Hypothermic enteral sanitation intestinal obstruction / Surgery. - 2007. - No. 4 - Pp. 45 - 48.
21. Glukhov A. A. Methods of electrical stimulation of the gastrointestinal tract / A. A. Glukhov, A. A. Andreev, T. G. Nikishina // Vestn. surgery. - 2005. - Vol. 164, No. 6. - Pp. 101-103.
22. Gobedzhishvili V. K. Prediction and prevention of the development of adhesions in patients operated on the abdominal organs / gobedzhishvili V. K., M. P. Lavreshin, R. K. Gesheva // Annalykhirurgii. - 2006. - №3 - Pp. 42 - 45.
23. Gogolev, D. O. Evaluation of motor-evacuation activities gastroduodenal complex ulcerative stenosis after radical duodenoplasty : author. dis. ... candidate.med.Sciences. - Krasnodar, 2000.- 26 s.
24. Golovachev V. A. Intestinal obstruction after operations on the colon / V. A. Golovachev, CT. Orachev // 5 Congress of surgeons of Central Asian republics and Kazakhstan :proc.Dokl. — Tashkent, 1991. — P. 151-152.
25. Greenberg A. A. Emergency abdominal surgery. - M. :Triada-X, 2000.-S. 301 to 302.
26. Gulyaev V. U. Electrodiagnostics, electrostimulation and low-frequency impulse electrotherapy : experimental., klinich. andmethod.aspects / U. V.

Gulyaev, V. A. Matveev, I. E. of orange. — Yekaterinburg •.MAGNON, 2004.- 116 C.

27. Dalgatov G. D. a New method of prevention of adhesive disease of the peritoneum (experimental study) / G. D. dalgatov [and other] // ROS.Sib. gastroenterology, Hepatology, Coloproctology. -2005.-No. 5.p. 125.

28. Dvoryakovsky I. V. Ultrasound diagnosis in pediatric surgery / Dvoryakovsky I. V., O. A. Belyaeva. - M. : Profit, 1997. - P. 177 To 179; P. 180-181.

29. Dronov A. F. Laparoscopic surgery for acute adhesive intestinal obstruction / A. F. Dronov, V. I. Poddubny // Endoscopic surgery. - 2000. - №6 - p. 43 - 48.

30. Dronov A. F. Laparoscopic surgery for acute adhesive intestinal obstruction in children / A. F. Dronov, I. V. Poddubny, O. I. Blinnikov // Surgery. - 2001. - No. 2 - Pp. 37 - 42.

31. Dubrov Y. Z. Ultrasound semiotics of acute mechanical small bowel obstruction / Z. Y. Dubrov, E. A. Nesterova // Materials of the 3rd Congress of ROS.assots. specialists of ultrasound diagnostics in medicine. - M., 1999. - S. 89.

32. Zavadovskaya V. D. Ultrasound diagnosis of intestinal obstruction / V. D. Zavadovskaya [and other] // Med.visualization. -2005.-No. 4-Pp. 76-83.

33. Zarkeshev CP. A method for the treatment of postoperative paresis of the gastrointestinal tract // Surgery. - 1989. - No. 2. - P. 113-114.

34. Izosimov A. N. The use of a pacemaker to restore the motility of the gastrointestinal tract in children in the postoperative period / A. N. Izosimov, V. V. Plechev, A. A. Gumerov // Det.surgery. - 2008. - No. 5 - Pp. 55-56.

35. The Kirkovsky V. V. Correction intrainestinal status in patients with widespread peritonitis /V. V. Kirkovsky [et al.] // Surgery. - 2000. - №9 - p. 11 - 15.

36. Klevakin A. L. Laparoscopic assisted operations in the treatment of patients with acute adhesive intestinal obstruction / E. L. Klevakin, I. Prudkov M.: proc.Dokl. 5 vseros. Congress of endoscopic surgery // surgery. — 2002. -№2-3

p. 22.

37. Kobilov E. E. Decompression of the gastrointestinal tract in acute adhesive intestinal obstruction in children / E. E. Kobilov, A. M. Shamsiev, S. A. Yusupov // *Det.surgery.* - 2006. - No. 4 - Pp. 17 -19.

38. Kovalenko A. P. the Motor-evacuation activity of the gastrointestinal tract and the secretory function of the stomach under the action of carbohydrate-protein Breakfast and muscle tension: author. dis. candidate. med. sciences. - Chelyabinsk, 2001.- 23 p.

39. Korolyuk I. P. Modern radiopaque research methods in the diagnosis of adhesions, deformation of the small intestine / I. P. Korolyuk, N. F. Polyarush // *Med.visualization.* — 2005. - No. 1 - Pp. 73-81.

40. Korymasov E. A. Principles of differential diagnosis and tactics in case of acute intestinal obstruction / Korymasov E. A., Gorbunov, Yu., *Vestn. surgery.* - 2003. - №3 - p. 101 - 106.

41. V. I., Shestakov D. Comparing the study results of the treatment of common forms of appendicular peritonitis in children operated laparoscopically and traditional surgery) / V. I., Shestakov D. [et al.] // *Surgery.* — 2003. - No. 7.-S. 32-37.

42. Kriger A. G. Acute adhesive intestinal obstruction: diagnosis and treatment laparoscopic method / A. G. Krieger, I. L. andreytsov, K. P. Voskresensky // *Endoscopic surgery.* — 2002. - No. 1 — Pp. 41 — 45.

43. Kriger A. G. Diagnosis and treatment of acute adhesive small bowel obstruction / A. G. Kriger [et al.] // *Surgery.* - 2001. - №7 - Pp. 25-29.

44. Krieger A. Laparoscopy and laparoscopic ultrasound in the treatment of rare variants of small bowel obstruction / A. G. Krieger, I. L. andreytsov, E. E. Makarova // *Endoscopic surgery.* - 2000. - №5 - p. 57 - 59.

45. Kudryashov N. E. Radionuclide assessment of evacuation function of the stomach and of the passage through the intestine in acute obstruction of the

small intestine / N.E. Kudryashova, G. V. Pakhomov, A. G. Lebedev // ROS.Sib. gastroenterology, Hepatology, Coloproctology. - 2003. - No. 4-Pp. 37-43.

46. Kurbonov K. M. Complex diagnostics and surgical treatment of acute adhesive smallintestinal obstruction / K. M. Kurbonov, M. K. Gul, I. G. nurnazarov // Vestn. surgery. - 2006. - №3 - Pp. 54 -57.

47. Kurygin A. A. Urgent surgical gastroenterology / Kurygin A. A., Yu. M. Stoyko, S. F. Bagnenko. - SPb. :Piter, 2001.- 469 p.

48. Trigger V. I. electrical Stimulation of peristalsis of the stomach as a way of dealing with postmastergeneral in the early postoperative period / V. I. Hammer, D. A. Lozovsky, V. Gatan // Klinich. surgery. - 1991. - No. 8. S. 61-63.

49. Kushnerov A. I. Ultrasound examination in the diagnosis of small bowel obstruction // news of radiology. -2002.-N 1-2.-S. 32-34.

50. Leonovich A. B. Diagnosis of small bowel diseases using CT-enterography / B. A. Leonovich [et al.] / / ROS.Sib.gastroenterology, Hepatology, Coloproctology. — 2005. — No. 5. - P. 95.

51. Leontiev S. N. The diagnostic value of Doppler ultrasonography in mechanical intestinal obstruction / S. N. Leontiev, S. A. Sovtsov, Podshivalov V. Yu., Vestn.surgery. - 2002. - No. 2 — Pp. 37 — 39.

52. Lubyanka V. G. Correction of enteral insufficiency using Visant-With in the complex surgical treatment of common postoperative peritonitis / Lubyanka V. G., Aliev A. R., Chernenko V. F. // Annals of surgery. - 2005. -№5.-P.43-45.

53. Lukina EA. System of mononuclear phagocytes and biologic effects proinflammatory cytokines // ROS.Sib. gastroenterology, Hepatology, Coloproctology. — 1998. - No. 5 - Pp. 7-13.

54. Lutskevich V. E. Surgical treatment of small bowel diseases / E. V. Lutskevich, J. Gribkov, V. G. Ignatiev // Surgery. - 1993. - No. 4. - P. 33-35.

55. Magomedov M. A. the Local cell regulation in the formation of postoperative adhesions in peritonitis // Khirurgiya. - No. 6. - 2004. -S. 9-11.

56. Magomedov M. A. Antiaoxidannetary in the treatment of postoperative paresis of the intestine // Surgery. - 2004. - No. 1 - Pp. 43-45.
57. Makedonskaya T. P. Treatment of intestinal insufficiency syndrome in patients with peritonitis / Macedonian, Etc. [et al.] // Surgery. -2004.-No. Yu-P.31-33.
58. Mayansky A. N. Essays on neutrophils and macrophages / A. N. Mayansky, D. N. Mayansky. - Novosibirsk. : Nauka, 1983. - 256c.
59. Minaev SV. The effect of systemic enzyme therapy on the course of the simulated commissural process in the abdominal cavity of rats // Det.surgery. - 2003. - No. 2 - Pp. 28 - 31.
60. Mitin SE. Laparoscopic surgery in acute intestinal obstruction ;proc.Dokl. 3 vseros.Congress of endoscopic surgery / CE.Mitin, Yu. N. Lean, I. G. Ignatovich // Endoscopic surgery. - 2000. - №2 - p. 45.
61. Mishukov B. L. a Comprehensive ultrasound examination in the diagnosis of acute small bowel obstruction: dis. candidate. med. sciences. - M., 2000. - S. 74-86.
62. Mukanov M. U. Acute adhesive intestinal obstruction caused by adhesions visceroparietal : author. dis. candidate. med. sciences. - M., 1997. - 25 C.
63. Nesterova I. V. Complex three-tiered system study of neutrophils with a possible diagnosis of immunodeficiency States in various pathology: method. recommendations. / I. V. Nesterova, N. In. Kolesnikova, G. A. Chudilova. — Krasnodar, 1996. - 22s.
64. Nechaev, E. A. Drainage of small intestine with peritonitis and intestinal obstruction / E. A. Nechaev, A. A. Kurygin, M. D. Hanewich. - SPb., 1993.- 237 p.
65. Novomlinsky V. V. minimally Invasive intervention in adhesive small bowel obstruction ;proc.Dokl. 3 vseros.Congress of endoscopic surgery) / V. V. Novomlinsky [et al.] // Endoscopic surgery. - 2000. - №2 - p. 48.

66. Nozdrachev, V. N. Complications and their prevention in laparoscopic surgery for acute adhesive small bowel obstruction / V. N. Nozdrachev [etc.]. - M., 1996. -Pp. 101-103.
67. Oliferuk, N. With. Evaluation of phagocytic and bactericidal activity in neutrofila, macrophages and immature dendritic cells / N. With.Oliferuk, A. N. Elias, B. V. Pinegin // Immunology. - 2005. - No. 1-Pp. 10-12.
68. Onopriyev VV the Pathogenesis of motor-evacuator disorders and compensation mechanisms during surgical correction of stenosis of duodenal ulcer : author. dis. ... d-RA.med. Sciences - Krasnodar, 2004.- 69 p.
69. Osipov V. I. Prolonged hydropericardium in the treatment of после операционного спайкообразования // Vestn. surgery. - 1995. - No. 4-6. - P. 70 - 72.
70. Pekarsky V. V. Autonomous electrical stimulator of humans and animals / Pekarsky V. V. [et al.]. -Tomsk, 1995.- P. 4-12; 36-39.
71. Perche, SB. Stress and immunity / SB. Perche, T. V. Kondurova. -Moscow : KRON-press, 1996. - 155 p.
72. Petrov V. P. Intubation of the small intestine in patients with peritonitis and intestinal obstruction / V. P. Petrov, I. V. Kuznetsov, A. A. Domnikov // Surgery. - 1999. - No. 5 - Pp. 41 - 44.
73. P. E. A. Safety and efficacy of the drug longidaza 3000 ME in the treatment of patients with peritoneal process of the pelvis in a minor / E. A. p., A. A. Kolesov, I. B. Manukhin // Immunology. - 2006. - No. 2. - S. 12 - 14.
74. Petuhov V. A. Endotoxin aggression and endothelial dysfunction in the syndrome of intestinal failure in emergency surgery of abdominal organs: causal relations / V. A. Petukhov, A. D. Sleep, A. Mironov. // The annals of surgery. - 2006. - No. 5. -S. 27-33.
75. Pier E. the Histochemistry theoretical and applied / transl. from English. - M. : Publishing house of foreign. lit., 1962. -488 S.

76. Polivoda, M. D. Electroencefalografy in the evaluation of motor disorders of the small intestine in peritonitis in children / polivoda, M. D. [et al.] // Actual questions of gastroenterology. — Tomsk, 1993.- S. 151.
77. Poltyrev S. C. Pathological physiology of digestion in the // multi-volume manual of pathological physiology, Moscow, 1964.-TA-P. 10-83.
78. Popov A. A. Prevention of adhesive disease in gynecology / A. A. Popov., T. N. Manannikova, E. Y. Glukhov // Endoscopic surgery. - 2006. - №6 - p. 36 - 41.
79. Popova T. S. Theoretical foundations of enteral nutrition in surgical pathology of abdominal cavity organs / T. S. Popova [and other] // ROS.Sib. gastroenterology, Hepatology, Coloproctology. -1995.-№4. -S. 39-47.
80. Popova T. S. Syndrome of intestinal failure in surgery // Popova T. S., Tamazashvili T. sh., Shestopalov A. E.. - M. : Medicine, 1991.-S. 240.
81. Popova T. S. Electrography in the assessment of motor activity of the gastrointestinal tract in patients with acute intestinal obstruction and peritonitis] / T. S. Popova [et al.] // Surgery. - 1984. - №3 - p.64-68.
82. Portnoy L. M. the place and Role of ultrasonic diagnostics of acute intestinal obstruction / L. M. Portnoy, Legostaeva T. B., N. Yu. Kirillov // Vestn. of radiology. — 2003. - No. 4 — Pp. 4 -15.
83. Portnoy L. M. about the modern opportunities of the x-ray diagnosis of diseases of the small intestine with the help of the drug "Entero-view" / L. M. Portnoy, N. Yu. Petukhova, G. A. Stashuk // Vestn. of radiology. - 2001. - No. 1 — Pp. 10-19.
84. Holidays E. N., Sorokin O. N., Semenov, M. V. et al. The experience of laparoscopic surgery for acute adhesive intestinal obstruction :proc.Dokl. 3 vseros. Congress of endoscopic surgery / E. N. Holidays [et al.] // Endoscopic surgery. -2000. - No. 2 - Pp. 53 - 54.
85. Prokop M. Spiral and multislice computed tomography / M. Prokop, M..Galanski. - M.: Medpress-inform. - 2007. - 381c.

86. Proskurin M. F. the Role of different radiological methods in the diagnosis of some complications after traditional and videocopies abdominal operations: a review of lit. / F. M. Proskurin, A. L. Yudin // Med. visualization. - 2005. - No. 4 - Pp. 61 - 83.
87. Prudkov M. I. the Application of minimal access in surgical treatment of patients with uncomplicated acute adhesive intestinal obstruction / Prudkov M. I., E. L. Klevakin: proc. Dokl. 4 vseros. Congress of endoscopic surgery // surgery. - 2001. - №2 - p. 50.
88. Bar Reinforcements N. N. Immunological and biochemical aspects of the formation of adhesive disease of the peritoneum in children / N. N. Bar reinforcements [et al.] // Det.surgery. - 2002. - No. 3. - S. 29-33.
89. Rzhetskaya M. S. radiological diagnosis of postoperative adhesion obstruction of the small intestine // Vestn. ofroentgenology, and radiology.- 1981. - No. 2 - P. 27-31.,
90. Romanov E. I. Causes of death in acute adhesive intestinal obstruction / E. I. Romanov [et al.] // Vestn. surgery. -1998.-T. 157, No. 1.-P. 57-60.
91. Romanovsky V. G. ways of improving diagnosis, treatment and prevention of adhesive disease of the abdominal cavity :proc.Dokl. 3 vseros. Congress of endoscopic surgery) / V. G. Romanov [et al.] // Endoscopic surgery. — 2000. — №2 - p. 48.
92. Romeis B. Microscopic technique]. - M.: Publishing house of foreign. lit., 1954. - 718 p.
93. The fisherman V. V. Neurohumoral changes during acute intestinal obstruction / V. Fisherman, M. I. Mayorov, O. A. Makarov // Vestn. surgery. - 2005. - No. 1 _ p. 25 - 28.
94. Saveliev B. C., the Influence of probe decompression of the intestine in the portal and systemic bacteremia in patients with peritonitis / C. B. Savel'ev [et al.] // Surgery. - 1993. - No. 10. - P. 25 - 29.

95. Saveliev B. C. Dysmetabolic effects of the syndrome of intestinal failure in abdominal surgery / C. B. Savel'ev [et al.] // Annals of surgery. - 2005. - No. 6. - S. 46 - 54.
96. Saveliev B. C. a New method of enterosorption syndrome intestinal failure / C. B. Savel'ev [et al.] // Annals of surgery. - 2005. - No. 1 - Pp. 29-32.
97. Salimov sh. T. Treatment of postoperative adhesive disease in children / S. T. Salimov [et al.] // Pediatric surgery. — 2006. - No. 4 — Pp. 15 -17.
98. Selina I. E. Program X-Ray structure research in mechanical small bowel obstruction at different stages of treatment / Selina I. E. [and others] // proceedings of the 8th all-Russia. Congress of roentgenologists and radiologists "Algorithms in x-ray diagnostics and radiation programs and comprehensive treatment of patients". — M., 2001.- With 322 to 324.
99. Sergeev A. V. a Differentiated surgical and conservative treatment of adhesive disease depending on the degree of violations of regeneration of the peritoneum in children : dis. ... candidate. med. sciences. — M., 1996. -135 C.
100. Sigal Z. M. Intraoperative local electrical stimulation of intestinal anastomoses / Z. M. Sigal, E. V. Shpilevoy // News.surgery. - 2000. - No. 3. - P. 63-66.
101. Slavinsky A. A. Computer image analysis of neutrophils : naphthol-A8-S>-chlor-acetate-esterase / A. A. Slavinskiy, G. V. Nikitina // Klinich. lab. diagnosis. - 2000.- No. 5 - Pp. 34-37.
102. Smirnov V. S. Immunodeficiency / C. B. Smirnov, I. S. Freidlin. - SPb., 2000. - 221 p
103. Smirnov V. I. Treatment of smooth muscle insufficiency in surgical patients / V. I. Smirnov [et al.] // Surgery. - 1998. - No. 3-C31-32.
104. Smolsky B. G. Summarizing probe for enteral nutrition using the fiberscope / B. G. Smolski [et al.] // Surgery. — 1980. - No. 10-Pp. 91 -92.

105. Falconer, S. A. Some indicators of immunity in the development of adhesive intestinal obstruction in children, " Vestn. RSMU. - 2003. -№2/28-p. 109.
106. Starkov Y. G. Ultrasonic mapping of viscero-parietal adhesions of the peritoneum before laparoscopic operations / Y. G. Starkov [and other] // Med.visualization. - 2002. - No. 4 - Pp. 22 - 26.
107. Strykowski A. E. stimulation of the bowel by the device "Endoton - 01 B in the treatment of early adhesive intestinal obstruction / A. E. Strokovsky, V. A. Tarakanov, V. M. Naderian [et al.] // Emergency surgery of abdominal organs :materialynauch.-pract. Conf. —Krasnodar, 1994. — P. 99 — 100.
108. Tarakanov V. A. Diagnosis and treatment of adhesive intestinal obstruction in children / V. A. Tarakanov, V. M. Starchenko, V. M. Naderian [et al.] // Emergency surgery of abdominal organs: materialynauch.-pract. Conf. — Krasnodar, 1994. — C. 101. — 103.
109. Ternovoy S. K. Spiral CT and electron beam angiography / S. K. Ternovoy, V. E. Sinitsyn. - M. :Vidar, 1998. - Pp. 72-73.
110. Timerbulatov V. M. Effect of minimally invasive methods on the results of surgical treatment of acute adhesive intestinal obstruction :proc.Dokl. 5 vseros. Congress of endoscopic surgery) / V. M. Timerbulatov [et al.] // Endoscopic surgery. — 2002. - №3 -p. 76.
111. Troy N. With. Pharmacological correction of the propulsive activity of the small intestine in the early postoperative period / N. With. Troy, T. S. Popova,. G. I. Solovyov // ROS.Sib. gastroenterology, Hepatology, Coloproctology. - 2005. - No. 5 p. 80.
112. Filimonov M. I. mode Selection probe interlinguistica in emergency abdominal surgery / M. I. Filimonov [et al.] // Annals of surgery. - 1998. - No. 1 p. 39 - 43.
113. Filenko B. F. possibilities of prevention of adhesive disease after appendectomy / Filenko F. B. [et al.] // Vestn. surgery. - 2000. -Vol. 159, No. 2.-S. 73-77.

114. Finkelson, E. I. Laparoscopy in intestinal obstruction in children / E. I. Finkelson, O. D. Grannikov // Vestn. surgery. - 1980. -V. 124, №5.-S. 95-98.
115. Fisher A. A. Motor activity antroduodenal zone man : method, specifying the / A. A. Fisher, J. V. Karuna.-Krasnodar, 1991.-98 C.
116. Fomicheva E. V. Peculiarities of activation processes in the membrane, the nucleus and cytoplasm of neutrophils in ulcerative disease DICK complicated by stenosis]. candidate. med. sciences. — Krasnodar, 2003. — 121 p.
117. P. M. Khaitov Immune modulators: mechanism of action and clinical applications / P. M. Khaitov, B. V. Pinegin // Immunology. - 2003. - No. 4-Pp. 196-203.
118. Kharin V. G. Significance of the mononuclear phagocyte system in the pathogenesis of issue scan malaysian when peritonitis in children // Pediatriya (Pediatrics). - 1990. - No. 8. - P. 49 - 51.
119. Hodos, G. V. Laparoscopic technologies in the treatment of acute adhesive intestinal obstruction / Hodos, G. V. [and others] // Endoscopic surgery. - 2006. - No. 4 - Pp. 36 - 43.
120. Khokhlov A. V. syndrome of the fixed oil seal / A. V. Khokhlov, P. N. Zubarev, I. E. Onnicef // Vestn. surgery. - 2000. - No. 2 - Pp. 71 - 73.
121. Chekmazov I. A. Diagnostics of peritoneal commissures of abdominal cavity / I. A. Chekmazov, E. S. Sivash, A. Nikanorov, V. // Experimental. andklinich. gastroenterology. - 2002. - No. 4 - Pp. 86 - 90.
122. Chernov V. N. The choice of surgical tactics and methods of detoxification in case of acute intestinal obstruction / V. N. Chernov, B. M. Belik // Surgery. - 1999. - №5 - p. 45 - 48.
123. Chernov V. N. Portal and systemic bacteremia as a manifestation of functional insufficiency enteral barrier in acute intestinal obstruction / V. N. Chernov [et al.] // Vestn. surgery - 1998.-T. 157, No. 4.-S. 46-49.
124. Chernov V. N. The choice of the method of intubation and decompression of the small intestine in acute obstruction / V. N. Chernov, V. G. Khimichev // Surgery.-1998.- №11-p.30-33