METHODS TO IMPROVE THE RESULTS OF COMPLEX TREATMENT OF COMBINED PATHOLOGIES OF THE GASTRIC, DUODENAL AND COLON

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Abstract

Combined surgical pathology of the abdominal cavity is one of the serious problems of modern surgery. This article analyzes the results of surgical treatment of 110 patients with combined surgical pathology of the abdominal organs. According to the purpose of the study, 2 comparison groups were formed: the control group, where patients underwent phased surgical treatment of combined abdominal pathologies (CAP), and the main group, where patients underwent simultaneous surgery to eliminate CAP. As a result of the study, an algorithm for the diagnosis and treatment of patients with CAP was developed. The proposed algorithm is a reliable guarantee for improving the results of surgical treatment of CAP.

Keywords
combined abdominal pathologies, treatment

Асқазан, онекіелі ішек және тоқ ішектің қосарланған патологиясын кешенді емінің нәтижелерін жақсарту әдістері

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Аңдатпа

Құрсақ қуысы мүшелерінің жанамалас хирургиялық патологиялары – заманауи хирургиядағы маңызды мәселелердің бірі. Бұл мақалада қосарланған абдоминальды патологиялары (ҚАП) бар 110 науқасты хирургиялық емдеудің нәтижелері талданған. Зерттеу мақсатына сәйкес 2 салыстыру тобы құрылды: ҚАП бойынша кезеңдік хирургиялық емдеуден өтетін науқастардың бақылау тобы, және ҚАП-ты жою бойынша бір мезеттік ота жасалатын науқастардың негізгі тобы. Зерттеу нәтижесінің негізінде ҚАП-ы бар науқастарды емдеу және диагностикалау алгоритмі даярланды. Ұсынылған алгоритм – ҚАП-ты хирургиялық емдеудің нәтижелерін жетілдірудің сенімді кепілі

Түйін сөздер
қосарланған абдоминальды патологиялары, емі

Способы улучшения результатов комплексного лечения сочетанных патологий желудка, 12 перстной кишки и толстого кишечника

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Аннотация

Сочетанные хирургические патологии органов брюшной полости являются одним из серьезных проблем современной хирургии. В данной статье проанализированы результаты хирургического лечения 110 пациентов с сочетанной хирургической патологией органов брюшной полости. Согласно целью исследования, были сформированы 2 группы сравнения: контрольная группа, в которой пациенты подвергались поэтапному хирургическому лечению сочетанных абдоминальных патологий (САП), и основная группа, в которой пациентам проводилась одномоментная операция по устранению САП. В результате исследования был разработан алгоритм диагностики и лечения пациентов с САП. Предложенный алгоритм является надежной гарантией для улучшения результатов хирургического лечения САП.

Ключевые слова
сочетанная абдоминальная патология, лечение

Despite the development and achievements of modern medicine, the results of the treatment of certain pathologies of the digestive system and their combinations are still not satisfactory [2,7]. Diagnosis of any pathology of the abdominal cavity is an important aspect than to consider correct the simultaneous elimination of this problem [4]. The background in which the underlying disease develops and its consequences should be considered an important condition for the development of combined pathologies [4,7]. One of the important points is that changes in one anatomical region of the digestive tract can affect other departments and lead to chronic and protracted pathological changes [2,4]. This leads to a large number of conflicting opinions, if you do not take into account the diagnostic of pathology of the digestive system [5]. The third important condition is that pathological changes found in different areas of the digestive system are not taken into account in determining the simultaneous radical treatment tactics [1,4,6].

The fourth prerequisite is the incorrect and inadequate systematization of the combined pathologies of the digestive system. Timely and objective assessment of the severity of combined abdominal pathologies (CAP) is the basis of treatment tactics [7].

The fifth condition, although individual pathologies are repeated at the same time, their elimination should not be addressed in a separate order, but systematized and treated radically [4].

Finally, the last condition is the use of methods that guarantee radicalization and a guaranteed result in the treatment of each disease with the joint resolution of individual pathologies [3,7].

The above can be considered as urgent problems that are not yet fully reflected in medical sources and are awaiting radical resolution [4.7].

Purpose

Improving the results of treatment of combined abdominal pathologies (CAP) using traditional and new methods, by developing the basics of diagnosis and assessing the severity.

Materials and methods

The study involved 110 patients. Patients were divided into two groups, aged 18 to 70 years. Patients in each group were divided into 3 subgroups. 60 patients of the main group with CAP were purposefully examined, and the elimination of revealed pathologies was carried out in 3 directions; 1) step-by-step surgical treatment; 2) initial surgical operation and further conservative treatment; 3) The simultaneous elimination of CAP by radical operations, that is, CAP in 60 patients of the main group is eliminated by radical treatment.

In the second group, the subgroups were similar.

Table 1.
The incidence of postoperative combined abdominal pathologies (CAP).

№	Pathology	Number of patients
1	Gastric diverticulum Duodenal diverticulum Colon diverticulum	8 9 12
2	Gastric atony Pyloroduodenal stenosis Gastroptosis	20 6 24
3	Chronic duodenal obstruction Reflux gastritis Violations of the biliary system	26 26 16
4	Sliding hiatal hernia Reflux esophagitis	22 22
5	Megacolon Transversoptosis Impaired colonic patency	26 26 26

1. The operation was applied only for one detected pathology in a group of patients where the examination was not performed according to the CAP protocol. Without correction of other pathologies.
2. Patients who, prior to surgery, on the basis of lengthy complaints and studies, confirmed the presence of CAP. In this case, only conservative treatment was possible.
3. Elimination of later detected CAP by radical methods in repeated operations. The results are relative.

Thus, the elimination of CAP in patients of the control group was not radical and complete.

The main research criteria:

1. Identified CAP data;
2. An assessment was made of the feasibility of the operations involved.

It is important to correctly assess the main factors in the development of CAP, to determine their developmental sequence and which pathology is leading. The design of the control group contributed to the correct understanding of the truth during the study. Combined abdominal pathologies are formed by the following diseases.

1. Gastric, duodenal and colon diverticulums
2. Gastric atony and obstruction due to pyloroduodenal stenosis, gastroptosis;
3. Chronic duodenal obstruction, reflux gastritis, pathology of the biliary system;
4. Sliding hiatal hernia and reflux esophagitis;
5. Impaired colon patency due to megacolon and transversoptosis.

These pathologies developed in combination with each other and were diagnosed simultaneously (Fig. 1, 2, 3, 4).

Criteria for choosing treatment methods:

In accordance with the accepted rules, the treatment program plan was selected based on the severity of the detected pathologies. From a surgical point of view, treatment was two ways: 1) conservative treatment; 2) surgical treatment.

During the study, both treatment methods were compared, both methods were used together as needed. This approach will lay the foundation for the practical application of research results by improving the overall treatment outcome in accordance with the purpose of the study.

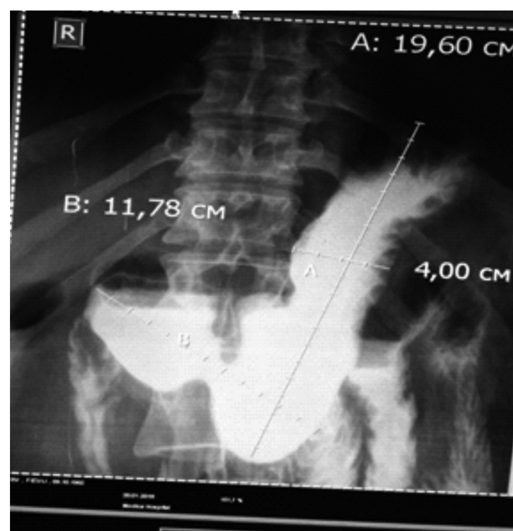


Fig. 1.
Determination of gastric atony.

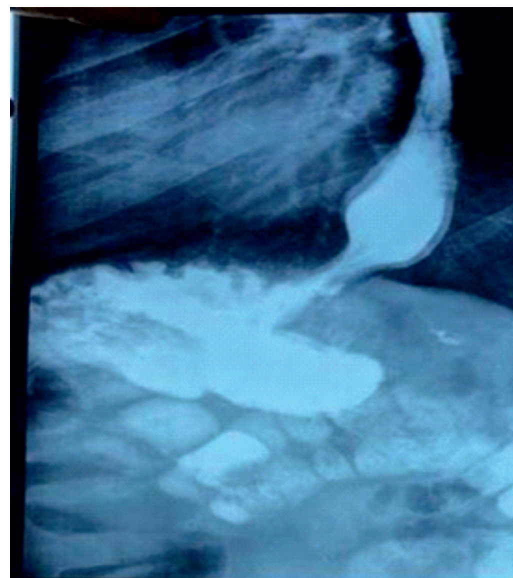


Fig. 2.
X-ray picture of hiatal hernia

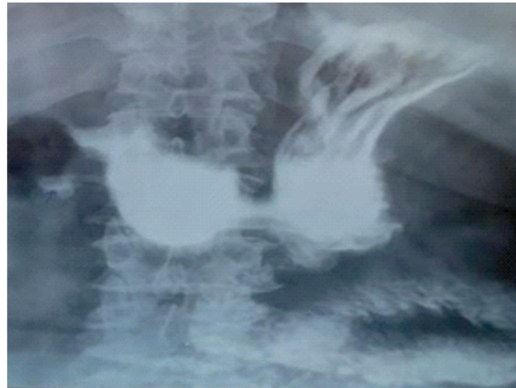


Fig. 3. Gastroptosis and duodenum diverticulum

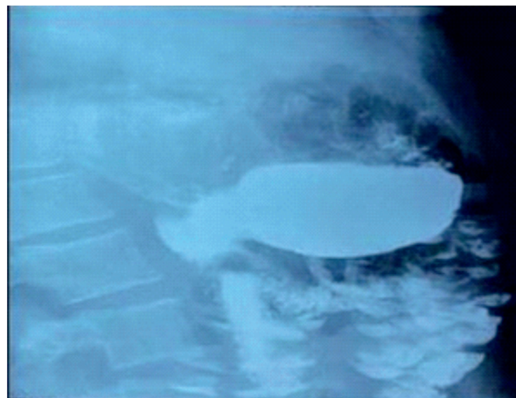


Fig. 4. Surgical treatment of gastric atony

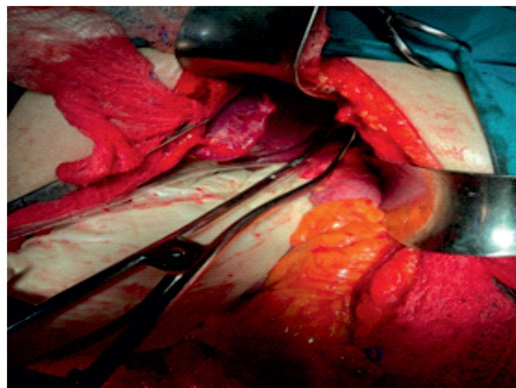
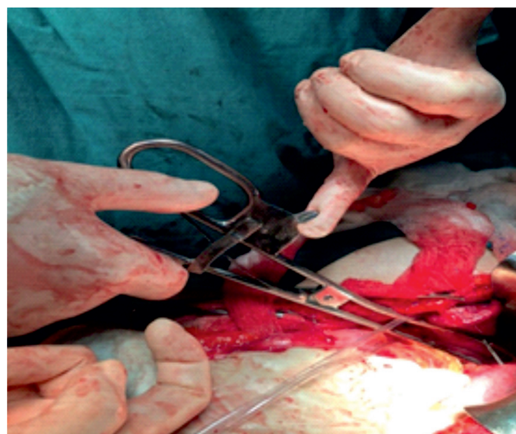



Fig.5, 6 In the surgical treatment of a hernia of the diaphragm, the measurement of the size of the hole and the angle of His using the "Chiatomer"

The conservative and operational treatment tactics used are divided into two groups, both traditional and new methods.

Tasks of traditional methods of conservative treatment

1. Elimination of peristaltic disorders in certain sections of the digestive system;
2. Normalization of high pressure in the digestive tract and abdominal cavity
3. To achieve the elimination of prolonged pathological delay and stagnation in the digestive tract;
4. To achieve the restoration of impaired digestive activity in certain areas of the digestive tract.

We have developed a new method of administering drugs to the digestive system when it is impossible to take drugs and drugs orally (there is a certificate).

Our newly invented and patented surgical methods:

1. A way to eliminate a diverticulum with corrugating seams.
2. The method of surgical treatment of gastric atony;
3. In the surgical treatment of a hernia of the diaphragm, the measurement of the size of the hole and the angle of His using the "Chiatomer" (Fig 5, 6).

A method to eliminate a diverticulum using corrugating seams (Moscow, Eurasian Patent Organization, No. 1600625).

When the diverticulum is located in technically difficult places, the opening of the organ lumen can lead to its further expansion, and when suturing, this can lead to deformation of the organ or to narrowing of its lumen. Sometimes, to avoid the above, a resection of the diverticulum or a larger area of the organ is required. Also, when conducting large operations with combined pathologies of the stomach and duodenum, it is important to eliminate the diverticulum in a simpler and more reliable way in order to avoid extensive operations on two or more organs. In our opinion, the treatment that meets these criteria consists in eliminating the diverticulum with the corrugating seams we have proposed.

Below is the nature and difference from other types of diverticulum elimination operations (A.K. Zemlyanov): they find the gates of the diverticulum and highlight the extreme points of the diverticulum (proximal and distal) in the longitudinal direction. Sutures pass through the serous layer and the

Traditional methods of surgical treatment

Crurorraphy	Gastric resection
Fundoesophagophrenorraphy	Strong operation
Fundoplication	Various types of operations to reduce the volume of the colon (resection, hemi or total colectomy).

muscular-fibrous ring fix the gates of the diverticulum. The threads of the corrugating seams are laid aside, while the bottom and the diverticulum body take the form of wavy layers, the subsequent seams are superimposed in the transverse direction and include both edges of the serous-fibrous ring and pass through the wave-like folds, while the seams are repeated at a distance of 0.5 cm from each other friend until the diverticulum is completely eliminated (Fig 7, 8).

As a result, the diverticulum is completely eliminated with the help of corrugating seams. With a diverticulum of duodenum, small and large intestine, according to our proposed technique, the sutures are performed in the transverse direction, and not in the longitudinal direction.

During the examination, in patients with diverticulum, a sliding hiatal hernia with reflux esophagitis, reflux gastritis, chronic duodenal obstruction, chronic constipation, visceroptosis, gallstone disease and chronic pancreatitis were found in combination. The results show that increased pressure within the stomach of the duodenum can lead to the development of a hiatal hernia, reflux esophagitis and gastritis. If we take into account the dependence of the motor function of the duodenum, small and large intestine on the center located in the muscle layer of the descending part of the duodenum, then we can give an explanation of the mechanism of congestive disorders of intestinal motor activity in diverticula. In addition, motor disorders cause atrophy in the muscle layer, and then a defect that forms the gate of the diverticulum. After the diverticulum is eliminated with a corrugating suture during the examination of the suture area from the mucous membrane after opening the lumen of the resected part of the colon, a complete restoration of the diverticulum gate region is revealed and this area does not differ from the surrounding tissues.

When X-ray contrast research and endoscopy after 3, 6, 12, 24 and 36 months after the proposed surgical procedure in all cases, the normal appearance of the mucous membrane was obtained at the site of the operation. No diverticulums or other deviations, i.e. pathological changes were found.

The generally accepted classification of the diverticulum does not fully reflect its location in individual organs, the possibility of the technical implementation of surgical treatment methods, and the prevention of various complications after surgery. Therefore, we tried to develop a new classification, which reflects the location of the diverticulum in the gastrointestinal tract, the condition of other pathologies of the digestive tract, the success of the planned operation and the possibility of avoiding complications.

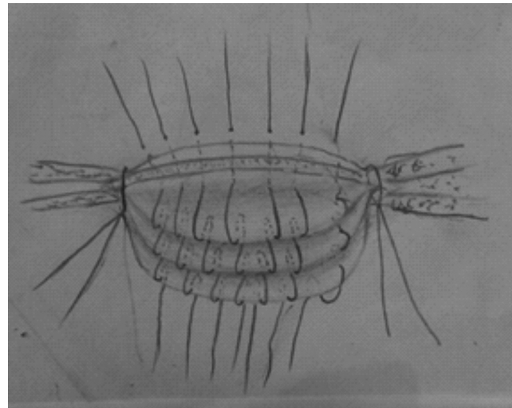


Fig. 7
Description in text

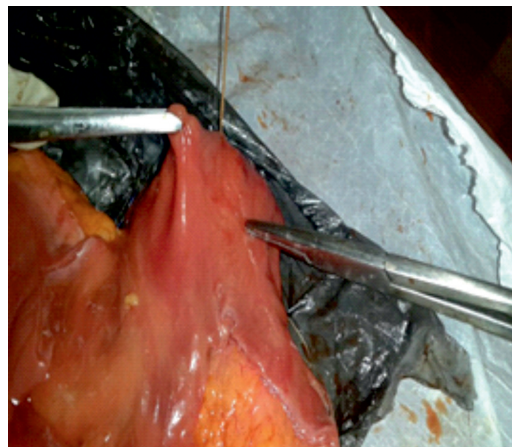


Fig. 8
Description in text

Thus, based on the above conditions, during the study of diverticulums, we focused our studies in this direction. The essence of our proposed method for the surgical treatment of gastric atony (Eurasian Patent Organization No. 030786) is as follows:

A method of surgical treatment of gastric atony with gastroptosis is to hem the loop of the small intestine to the stomach so that intestinal motility is transmitted to the muscles of the stomach.

Next, an anastomosis is formed between the stomach and small intestine to accelerate the

In relation to the peritoneum – Intraperitoneum; – Extraperitoneum.	**Due to the complexity of the anatomical location** – located in the free zone of the body – border with other organs or surrounded by numerous vessels
Features of the diverticulum gate – The gates and neck of the diverticulum are clearly defined; – The gates and neck of the diverticulum are not detected, i.e. isolated diverticulum	**Types of surgical correction:** – resection of an organ with a diverticulum; – elimination of the diverticulum according to the method of Zemlyanov – a new method that we offer is to eliminate the diverticulum with corrugating seams without opening the lumen

evacuation of food masses from the stomach to the small intestine, followed by plugging of the distal end, which is led to the zone of the esophageal-gastric transition. In this case, the distal part of the small intestine runs along the lesser curvature of the stomach. Fixation of the distal end in this position is carried out by applying gray-serous sutures. After that, an «end-to-side» anastomosis is performed between the proximal end of the small intestine and the lateral surface of the distal part. At the same time, small intestine resection is carried out at a distance of 20-30 cm from Treitz, the distal part of the intestine is fixed in a position in which the mesentery is located laterally, the free edge is medially. When fixing the distal part of the intestine, the mesentery is fixed to the small omentum.

The essence of the invention lies in the fact that the proposed method for the treatment of atony with gastroptosis, maintains a normally functioning pulp with the restoration of the motor function of the stomach itself. In general, operations to eliminate gastric atony are performed simultaneously with operations on the large intestine and other organs. At the same time, surgical tactics take place with combined pathologies of the gastric, duodenum, colon, and other organs in the abdomen.

The location of the distal part of the small intestine with the plugged end along the lesser curvature of the stomach and its subsequent fixation in this position on the surface of the stomach and the application of gastroenteroanastomosis allow for a rhythmic effect on the wall of the stomach, which leads to the activation of its work and ensures the evacuation of food masses into the small intestine while maintaining sphincter.

Dissection of the small intestine at a distance of 20-30 cm from Treits provides the possibility of the normal execution of the «end-to-side» anastomosis to create better patency of the food masses.

Fixing the distal part of the intestine in a position in which the mesentery is located laterally, the free edge is medially, excludes infringement of the mesentery and the formation of an inflection of the small intestine, while ensuring normal transmission of contractile impulses and synchronization of peristalsis of the stomach and intestines.

Stitching of the vessels of the mesentery and small omentum provides the best conditions for normal blood flow in the vascular arch and nutrition of the distal part of the small intestine, its normal engraftment and functioning after surgery.

The invention is illustrated in the following figure

Fig. 9 shows the final view of the operation with the imposition of gastroenteroanastomosis and hemicolectomy.

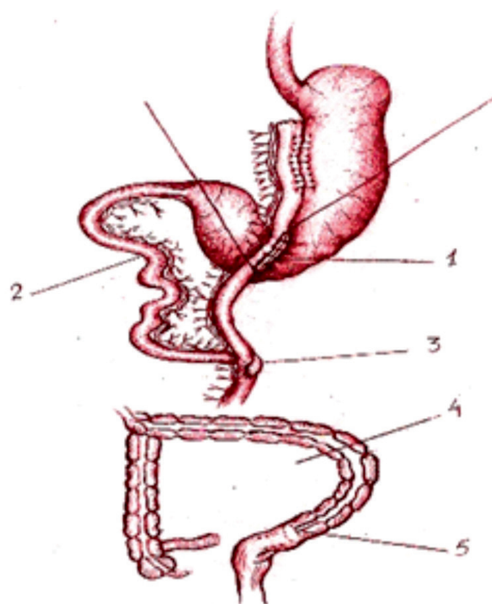


Fig. 9.
1. Anastomosis between the loop of the small intestine and the anterior wall of the stomach.
2. The initial part of the small intestine;
3. Anastomosis «end to side» between the proximal loop and small intestine;
4. The remainder of the large intestine;
5. Anastomosis between parts of the large intestine.

Results and discussion

In the first subgroup of the main group 20 patients underwent phased surgical treatment. Although CAP was found during x-ray examination of the stomach and irrigography, during surgery, 10 patients were diagnosed with prolapse of the stomach, with a relatively preserved tone of the stomach. In addition, these patients were under the age of 20 years. Therefore, they had an intervention to reduce the enlarged colon (resection, hemicolectomy). The stomach was mobilized from the transverse colon and omentum. Fundoplication (2 patients) and anterior cruroraphy and fundoesophagophrenoraphy (4 patients) were performed in 6 patients out of 10 of this subgroup due to a sliding hernia of the esophageal opening of the diaphragm.

Subsequent examinations of patients showed no signs of CAP.

In the remaining 10 patients of the 1st subgroup, which initially had surgery on the colon, the diagnosis of visceroptosis was established. These patients were between 20 and 30 years old. They categorically refused additional surgery on the stomach. During a postoperative examination of patients, their stomach sizes not only decreased, but also increased; preexisting cardiac insufficiency of the stomach led to a pronounced sliding hernia of the esophageal opening of the diaphragm and reflux esophagitis. An increase in patients complaints led to the need for repeated operations - gastric resection with the Hoffmeister-Finsterre modification and fundoplication (4 patients) according to the Shalimov method and fundoesophagophrenoraphy with anterior cruroraphy. These patients recovered well after reoperation, and reexamination confirmed this.

The remaining 20 patients in the main group had only one - colon correction surgery in the above options. In the postoperative period, patients had

gastric atony, chronic duodenal obstruction, reflux gastritis, reflux esophagitis, and therefore they were prescribed conservative treatment. The relatively mild course of these pathologies, the compliance with conservative treatment, and the patient's aversion to surgery substantiated prolonged conservative treatment and a relative improvement in the general condition.

All 20 patients in subgroup III of the main group underwent screening according to the protocol, CAP was confirmed and a simultaneous correction of each pathology was planned. 7 out of 20 patients had a hiatal hernia, cholelithiasis, diverticulum of the colon and duodenal, chronic duodenal obstruction. These patients underwent anterior crurorraphy with fundoesophagophrenoraphy, diverticulum elimination with corrugating sutures according to our patented method, cholecystectomy and Strong's operation. Surveys at different times prove that surgical results are good.

In 13 out of 20 patients, a sliding hiatal hernia, gastroptosis with atony, chronic duodenal obstruction and diverticulum (2 cases), gallstone disease (7 cases) and visceroptosis and lengthening of the left half of the colon were found. CAP correction was performed during the same surgical procedure for these patients. Along with anterior cruroraphy and fundoesophagophrenoraphy, cholecystectomy, the elimination of the diverticulum with corrugating sutures according to our patented method, the elimination of atony of the stomach according to our patented method, Strong's operation, left-sided hemicolectomy were performed. After the operation, patients felt very good and had no complaints. Analysis carried out at different times proved this (Fig. 2, 3, 4).

Of the 50 patients in group II, 18 had not previously been examined for CAP. They underwent surgery for any of the diseases discovered in them (cholecystitis - 8, hiatal hernia - 5, dolichosigma - 5 patients). Since these complaints continued to persist in these patients for 3-5 years, a protocol examination was conducted, and it was established that they had CAP from an early period. The results of the operation were unsatisfactory due to the fact that other diseases that make up the CAP were not detected in a timely manner and proper correction procedures were not performed. Twelve of these patients underwent surgery, and 6 patients chose non-surgical treatment. The performed operations were selected in accordance with the pathology found and performed in the same way as in the main group. Of 12 patients, 10 were rated as good, and 2 had a relatively good result.

Although it was believed that in 16 patients of a different subgroup, CAP was not detected before and during surgery, only one operation was performed. The following pathologies remained hidden in these patients: chronic duodenal obstruction (8 patients), sliding hiatal hernia (8 patients). In this group of patients, for various reasons (pyloroduodenal stenosis, peptic ulcer), only the Hoffmeister-Finsterere resection was performed. Complaints and persistent postoperative complications led to further screening of patient protocols. We used conservative treatments as requested by patients and were able to achieve relative symptom relief.

Examination of the following 16 patients from the second group of patients who had previously undergone abdominal pathology revealed that the CAP, which was originally, still remains. Nissen fundoplication was performed in 8 patients from this group due to a sliding hiatal hernia. Existing visceroptosis, chronic duodenal obstruction were overlooked. During the second operation, these patients underwent Strong's surgery, Bilrot II gastric resection, and left-sided hemicolectomy. Even after these procedures, the test results were good, but some patients continued to complain.

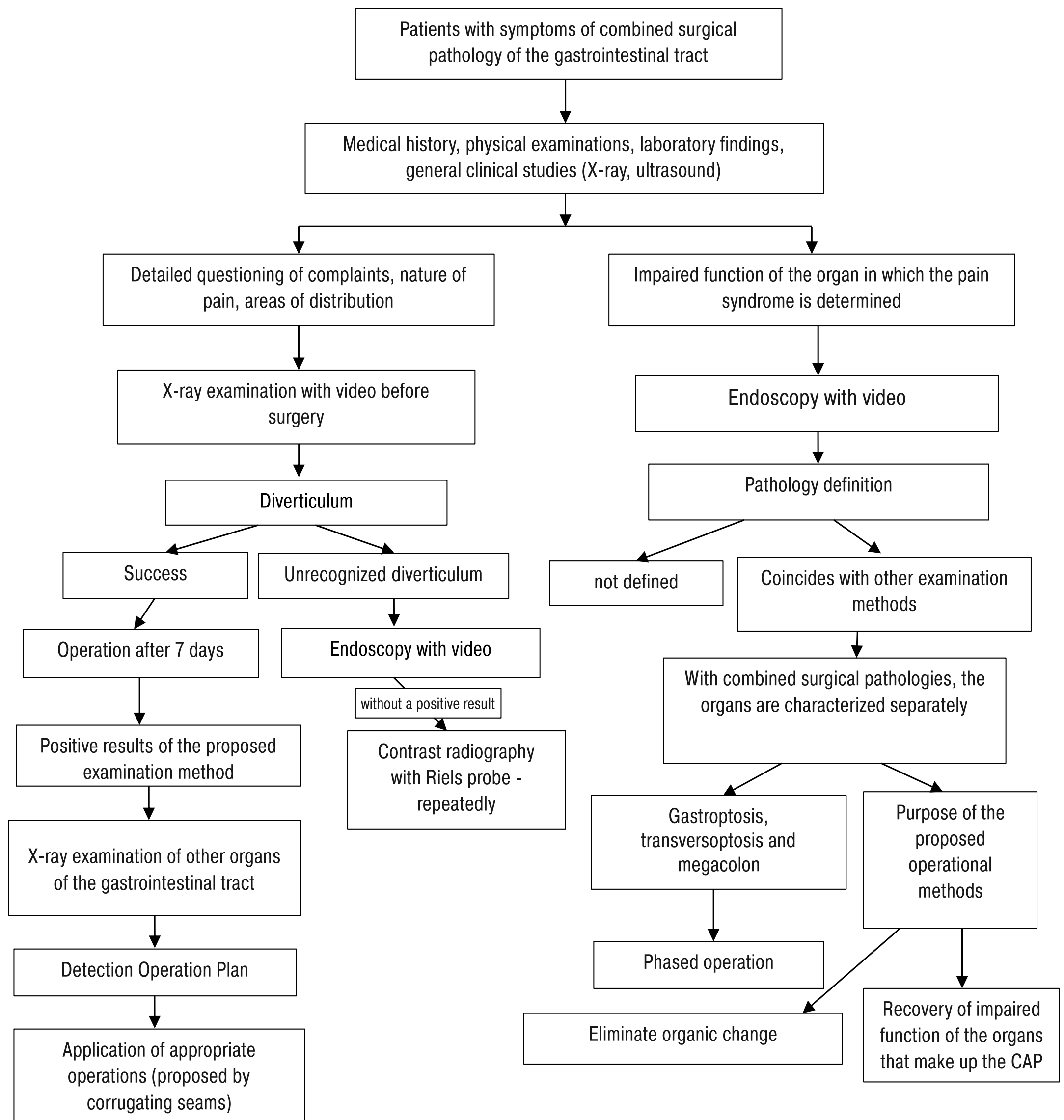
Thus, the study of ways to improve the results of treatment of combined abdominal pathologies (CAP) shows that in the case of chronic diseases of the abdominal cavity, not only one organ should be evaluated, but targeted steps should be taken and a correct assessment of the condition of other organs should be carried out. Only a comprehensive and radical treatment of the detected SAP in time can be considered as a guarantee of good treatment results.

Based on our research, we have created an algorithm for diagnosis and treatment:

Conclusion

1. A comprehensive instrumental study based on ongoing complaints will help identify CAP.
2. Chronic and numerous complaints from the organs of the gastrointestinal tract require the determination of CAP.
3. Studies on CAP should be carried out according to the protocol.
4. The scheduling algorithm determines the scope of research, treatment program and types of surgical methods.
5. Surgical treatment of the diverticulum - the elimination of the diverticulum with the help of corrugating seams should be at the disposal of practicing doctors.
6. The treatment of prolapse and atony of the stomach by the surgical method we have proposed can be offered as a reliable, simple and easy procedure to perform and is possible in combination with other operations.
7. Our proposed program is a reliable guarantee for improving the results of the treatment of CAP.

Fig. 10
Algorithm for treatment and diagnostic of combined surgical pathologies of the gastrointestinal tract



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