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DEVELOPMENT OF LAPAROSCOPIC OPERATIONS IN URGENT SURGERY

Махманазаров О. М.
https://orcid.org/0009-0003-9231-7186

Бахронов Шухрат Яхёевич
https://orcid.org/0009-0003-4627-789X
Бухарский государственный медицинский институт имени Абу Али ибн Сины,
Узбекистан, г. Бухара, ул. А. Навои. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

Abstract
Within the framework of the general scientific and technical progress, the constant introduction of new technologies makes them an integral part of one or another field of medicine. The current trend in the development of surgery is to reduce the invasiveness and trauma of surgical interventions. In connection with the development of surgical technologies, one of the main tasks in surgery is the minimization of surgical trauma and the subsequent reduction of the number of postoperative complications and mortality. as well as the terms of inpatient treatment of patients while maintaining the quality of surgical care. It is possible to achieve this goal in abdominal surgery with the widespread and widespread introduction of endosurgical technologies into everyday practice.

Introduction
Despite the wide arsenal of non-invasive research methods, the diagnosis of acute surgical-diseases of the abdominal cavity in some cases is very difficult. In this situation, the use of laparoscopy allows you to establish a timely diagnosis and determine surgical tactics. A comprehensive comprehensive analysis of the use of laparoscopic operations in emergency abdominal surgery and their improvement are an urgent task of modern clinical surgery. With the development of laparoscopic surgery and the accumulation of experience, the interest of many surgeons in the use of this method in emergency surgery is expanding. As part of the general scientific and technological progress, the constant introduction of new technologies makes them an integral part of a particular field of medicine. Today, emergency surgery can no longer be imagined without laparoscopy. In many complex cases, laparoscopy remains indispensable, as it allows for a direct visual assessment pathological process, will reveal its prevalence, perform a targeted biopsy and perform instrumental palpation. It can be said with confidence that the number of urgent operations performed by the laparoscopic method is steadily increasing. This circumstance requires the development of clear recommendations for the use of laparoscopic technologies in emergency surgery. The method allows you to carry out diagnostics with a high degree of informativeness, and when pathology is established in the abdominal cavity, it is possible to transform diagnostic manipulation into a therapeutic one. In the Clinic of Surgical Diseases and Resuscitation of the Bukhara State

Medical Institute, from 2019 to 2021, out of 9461 emergency abdominal surgeries performed, laparoscopic technique was used in 2479 (26.2%) follow-up

The following laparoscopic operations were performed: laparoscopic cholecystectomy (LCE) for acute calculous cholecystitis was performed in 1984 (80%) patients, diagnostic and therapeutic laparoscopy - 49 (1.9%) patients, diagnostic and therapeutic thoracoscopy in 32 (1.3%) patients, laparoscopic appendectomy - 18 (0.7%), suturing of perforated gastric and duodenal ulcers (DPK) - 15 (0.6%) patients, laparoscopic cystectomy (gynecology) - 112 (4.5%), laparoscopic tubectomy - 181 (7.3%), laparoscopic dissection of adhesions - 24 (0.9%) patients and laparoscopic ureterolithotomy - 64 (2.6%) patients.

Laparoscopic cholecystectomy.

The leading in the number of operations performed is laparoscopic cholecystectomy (LCE). 1984 which is 80% of all laparoscopic operations. Since the beginning of the introduction and mastering of the technique of laparoscopic cholecystectomy, our clinic has been an active supporter of emergency LCE, including destructive forms of acute cholecystitis.

The tactics of treatment of acute cholecystitis were determined depending on the severity of the patient's condition, due to the severity of both the main and concomitant diseases. All patients admitted with a diagnosis of acute cholecystitis were initially prescribed conservative treatment. The main criteria for the effectiveness of the initiated therapy were the data of clinical examination and ultrasound of the abdominal cavity, performed in dynamics from the moment of admission of the patient to the hospital. If conservative treatment was ineffective, the question of further treatment tactics was decided. Patients without pronounced concomitant diseases, who were admitted early from the onset of the disease, underwent laparoscopic cholecystectomy for urgent indications

For acute calculous cholecystitis, the operation was started laparoscopically in 1984 patients, in 16 of whom (0.8%) the cholecystectomy was completed in the traditional way due to pronounced inflammatory infiltrate in the area of the hepatoduodenal ligament. There were 1408 women (71%), 576 (29%) men. Catarrhal was detected in 632 (31.9%) patients, phlegmonous in 1109 (55.8%) patients, and gangrenous cholecystitis in 243 (12.2%) patients. Endoscopic retrograde cholangiography (ERCP) established its causes: choledocholithiasis in 127 (70.2%) patients, stenosing papillitis in 29 (16%), and a combination of choledocholithiasis and stenosing papillitis in 25 (13.8%) patients. All patients with obstructive jaundice underwent endoscopic papillosphincterotomy (EPST) prior to laparoscopic cholecystectomy and eliminated biliary hypertension. Acute pancreatitis in the form of an attack of severe shingles in the abdomen, accompanied by vomiting and amylasemia, developed in 2 (1.1%) patients after EPST. After conservative measures (fasting, detoxification therapy, administration of protease inhibitors and somatostatin), the attack was stopped.

Among emergency laparoscopic cholecystectomy for acute calculous cholecystitis, the catarrhal form was present in 418 patients or 21.1%, with acute phlegmonous cholecystitis 1023 or 51.6%, and with gangrenous cholecystitis in 543 patients or 27.3% (Table 3).

Table 3

Form of cholecystitis	Quantity
acute catarrhal	418(21,1%)
acute phlegmonous	1023(51,6%)
acute gangrenous	543(27,3%)

Out of 1984 cholecystectomies, conversion was performed in 16 cases. The reason for the conversion during laparoscopic cholecystectomy was hemorrhage from the gallbladder bed in 7 cases, dense infiltrate in the area of the Kahlo-9 triangle. Technical difficulties arose with a pronounced adhesion periprocess, infiltrate in the area of the bladder neck, thick bladder wall without a clear border between it and the liver. Without fail, the operation was completed with lavage and thorough sanitation of the gallbladder bed and right hypochondrium, drainage of the subhepatic space. The duration of the operation is about one hour. Postoperative bed-day - 3.7. After the manipulations, the patients immediately noted a subjective improvement: pain in the right hypochondrium disappeared, body temperature and blood pattern gradually normalized, and the infiltrate determined through the abdominal wall disappeared. Taking into account the old age of the patients and the presence of severe concomitant diseases, they continued to be treated according to the generally accepted scheme, and with the complete elimination of inflammation, they were discharged from the hospital without surgery.
Thus, it is obvious that laparoscopy in the treatment of acute cholecystitis is highly effective.

Laparoscopic suturing of perforated gastric and duodenal ulcers.

One of the unsolved problems of surgical gastroenterology is peptic ulcer disease of the stomach and duodenum, complicated by perforation. The actuality of the problem is also explained by the fact that this pathology is mainly found in young and middle-aged patients. According to the literature, gastroduodenal ulcers are complicated by perforation in an average of 10-15% of cases. To date, this complication is one of the unsolved problems of surgical gastroenterology Numerous methods of surgery are known, but with the development and introduction of minimally invasive and endovideosurgical methods into surgical practice, wide opportunities have opened up for the diagnosis and treatment of perforated ulcers. Due to the advent of modern highly effective anti-ulcer drugs, suturing of the perforated hole is currently considered the operation of choice for perforated ulcers. This surgical intervention, the purpose of which is to save the patient's life, is technically easy to perform and provides favorable immediate results for patients. Indications for diagnostic laparoscopy in patients with suspected perforated ulcer constitute an unclear clinical and instrumental picture, which does not allow to exclude the diagnosis of perforation of a hollow organ (pronounced pain syndrome, the presence of an ulcerative defect in the gastrointestinal zone according to EGD, the absence of pneumoperitoneum on control radiography after EGD). Contraindications to laparoscopy were considered to be the clinical and instrumental picture of widespread peritonitis. In diagnostic laparoscopy, the indications for conversion were: widespread peritonitis; the size of the perforated opening of the duodenal wall is more than 1.0 cm in diameter; combination of perforation with other complications of peptic ulcer disease (bleeding, stenosis, penetration).

The diagnosis of a perforated ulcer verified at the stage of clinical and instrumental examination and confirmed intraoperatively in the absence of contraindications was considered an indication for suturing the perforated hole

Laparoscopic suturing of perforated ulcers was performed in 15 patients with perforated gastroduodenal ulcer. There were 12 (80%) men and 3 (20%) women. The ulcer was localized in the stomach in 1 (6.7%) patient, in the duodenum in 14 (95.3%) patients. The age of the patients ranged from 15 to 62 years. The period from perforation to surgery ranged from 2 to 12 hours.

Suturing of perforated ulcers began with a review video laparoscopy in order to clarify the degree of prevalence of peritonitis (the number and nature of pathological exudate), localization, assessment of the type and shape of the ulcer, and the size of the perforated opening. The infected effusion was evacuated and the exudate was taken for bacterial examination and determination of sensitivity to antibiotics. By the nature of the exudate, peritonitis was serous in 12 (80.0%) patients, and in the remaining 3 (20.0%) cases, serous-fibrinous peritonitis was diagnosed

Suturing was carried out with an atraumatic thread 3.0 through all layers of the organ wall with the application of nodular or U-shaped sutures, with suturing a strand of a large salnik to the perforation site. The size of the perforated hole ranged from 2-3 to 10 mm. In 1 patient, a callous ulcer of the anterior-superior wall of the DPC bulb with a perforated hole of more than 1 cm in diameter was found, which required a transition to open surgery. In 9 patients, it turned out to be sufficient to apply one nodal suture to the perforated hole to achieve tightness, in 6 patients this required 2 nodal sutures for abdominal cavity sanitation. In 8 patients, combined laparoscopic and endoscopic ulcer closure was performed. During laparoscopic suturing, video telegastroscopy made it possible to determine the tightness of the sutures, the degree of deformation and impaired patency of the DPC. The volume of contents in the abdominal cavity varied from 300 to 1200 ml. Usually, the effusion spread to the subhepatic space, the right lateral canal and the pelvic cavity. Depending on the prevalence of peritonitis, 2-4 drains were used to drain the abdominal cavity. Even with a slight effusion, we brought at least 2 drains (in the pelvic cavity and subhepatic space).

Laparoscopic suturing of perforated gastroduodenal ulcers is indicated in the absence of widespread peritonitis in combination with paralytic intestinal obstruction, with the size of the perforated defect not exceeding 1 cm, in the absence of anamnestic, clinical and laparoscopic signs of other complications of peptic ulcer disease.

Patients after endovideosurgical suturing were active by the end of the 1st day, they had practically no pain, analgesics were injected into them only on the 1st day, they got out of bed on their own after 36 hours.

In our observations, complications arose in one (6.7%) - suppuration of the postoperative trocar wound. In all cases, the positive result of the operation was noted

Contraindications for laparoscopic surgery were giant ulcers with callous edges, peritonitis in the terminal stage, and the impossibility of performing full-fledged abdominal cavity sanitation.

Laparoscopic suturing of perforated ulcers contributes to the timely diagnosis of covered and atypically perforated gastroduodenal ulcers and can occupy the main place in the treatment of perforated pyloroduodenal ulcers. The technique of surgery using laparoscopic technique for perforated gastroduodenal ulcers makes it possible to minimize surgical trauma and provides in most cases tightness of suturing of the perforated hole and sanitation of the abdominal cavity. Laparoscopic suturing of perforated ulcers made it possible to reduce the length of stay of patients in the hospital, to refuse to prescribe narcotic analgesics, to activate patients in the early stages after intervention with a good cosmetic effect.

Laparoscopic appendectomy.

Acute appendicitis (OA) often proceeds with obliterated or atypical symptoms. The need to provide emergency care to patients, the danger of the development of severe complications, if it is not provided, require surgeons to use all possible methods of emergency diagnostics, including invasive ones. Diagnostic laparoscopy is the most effective study, the invasiveness of which is fully justified by its high informative value. Currently, it is possible to perform appendectomy laparoscopically. Therefore, the logical conclusion of laparoscopy in situations where the study confirms the diagnosis of OA is laparoscopic appendectomy. The requirements for the diagnostic stage of intervention increase significantly, since it is necessary not only to accurately determine the presence of the disease, but also objectively assess the possibility of performing intervention by the laparoscopic method.

In acute appendicitis, 18 (0.7%) laparoscopic appendectomies were performed. Laparoscopic appendectomy was performed according to the method of F. Gotz, proposed in 1993.Morphological changes in vermiform processes in acute appendicitis removed laparoscopically were as follows: catarrhal form - 7 (38.9%), phlegmonous - 8 (44.4%), gangrenous - 3 (16.7%) cases.

Indications for the laparoscopic method were the clinical picture of acute appendicitis, as well as the need for differential diagnosis with other diseases of the abdominal cavity with an unclear diagnosis. Contraindications to laparoscopy in patients with a presumptive diagnosis of acute appendicitis were considered to be the clinical and instrumental picture of widespread peritonitis or appendicular infiltrate. Indications for conversion during diagnostic laparoscopy included: widespread peritonitis requiring open nasointestinal intubation; appendicular infiltrate; fragmentation of the vermiform process, making it impossible to traction and mobilize; pronounced adhesions in the abdominal cavity.

Depending on the intraoperative situation, both antegrade and retrograde laparoscopic appendectomy were performed. Bipolar electrocoagulation was used as the safest method to mobilize the vermiform process. For the treatment of the cooley of the vermiform process with an unchanged base in 16 patients, the ligature method with the use of Raeder's loops was used. cecum in the area of the base of the vermiform process in 2 patients the immersion method with the formation of *a* B-shaped suture according to Rusanov was used. The incidence of postoperative complications was 1.2%.

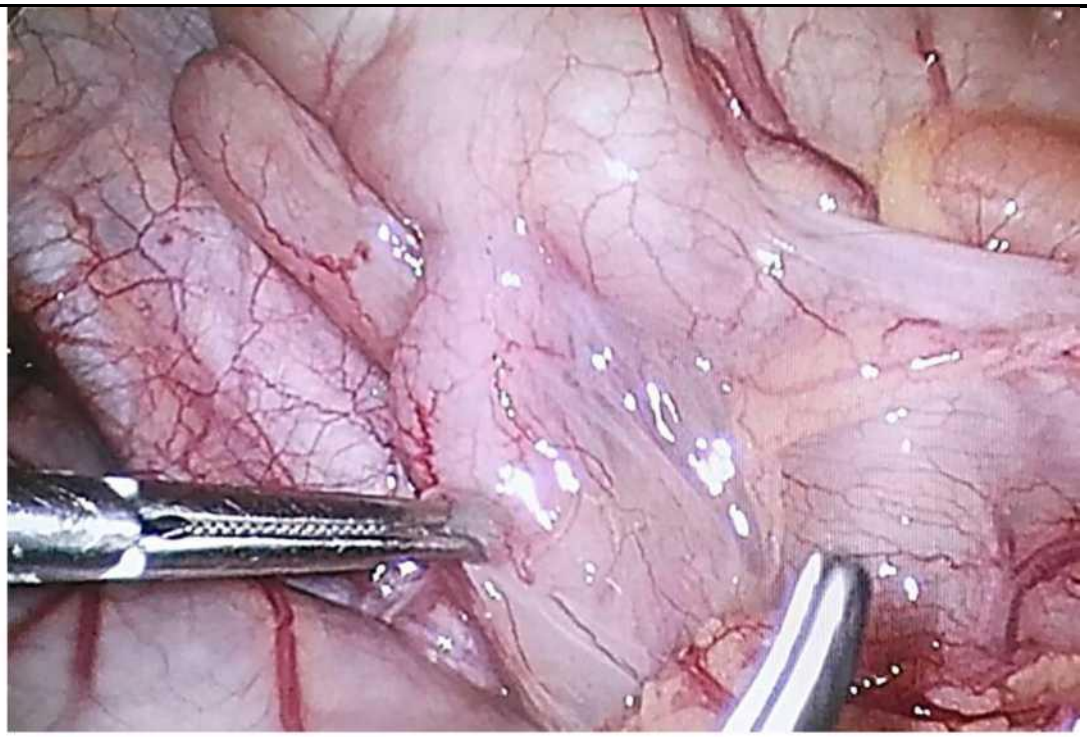

Рисунок 3.2 Неосложненная форма острого аппендицита

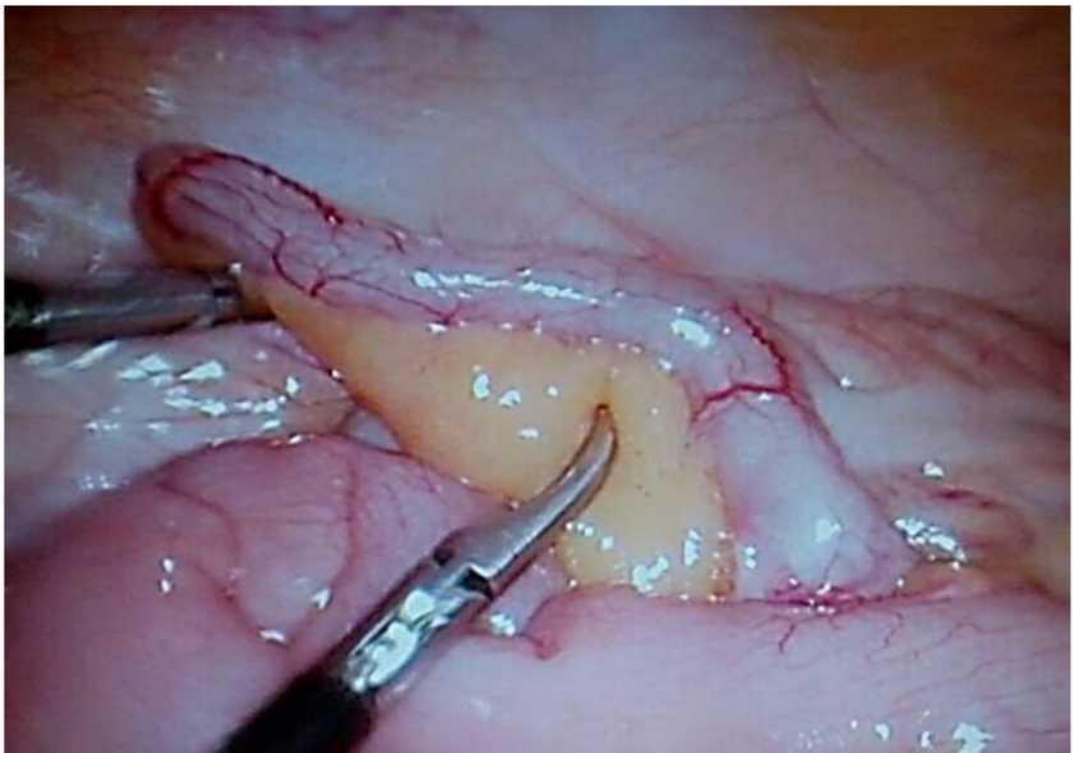

Figure 3.3 Uncomplicated form of acute appendicitis

Figure 3.4 Complicated form of acute appendicitis - appedicular peritonitis

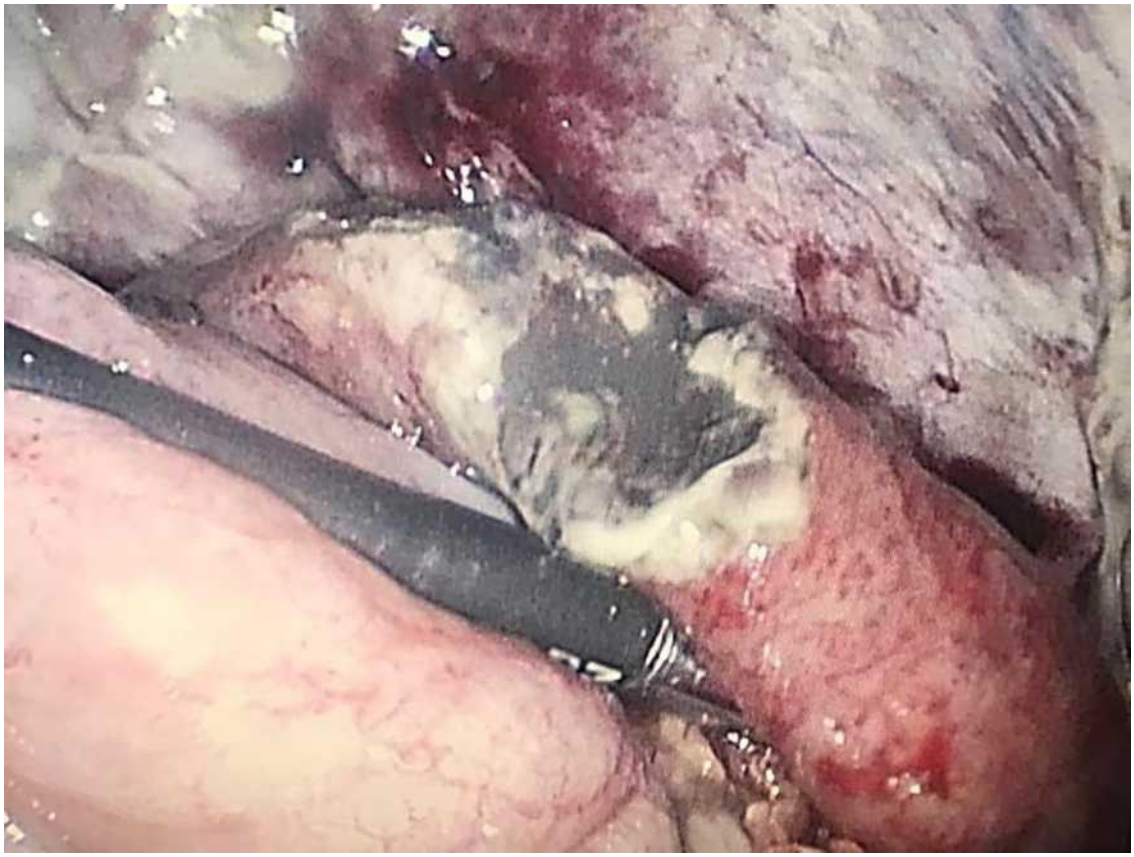

Figure 3.5 Complicated form of acute appendicitis - appedicular peritonitis

Our experience shows that contraindications to laparoscopic appendectomy in complicated forms of acute appendicitis are: dense appendicular infiltrate, periappendicular abscess, widespread purulent-fibrinous peritonitis, accompanied by intestinal paresis and dense fibrinous adhesions with many interloop abscesses. We adhered to the following principles when determining the indications, contraindications and choice of surgical access in patients with acute appendicitis: the indication for diagnostic laparoscopy was a clinically and instrumentally confirmed diagnosis of acute appendicitis, and it is impossible to exclude acute appendicitis during dynamic follow-up; A contraindication to laparoscopic appendectomy was the intraoperative picture of widespread diffuse peritonitis (which occurred in only 2.2% of cases); clinically and instrumentally confirmed appendicular infiltrate was a contraindication to surgical intervention; in the presence of an appendicular abscess, it was drained under ultrasound guidance; Intraoperatively detected appendicular infiltrate was a contraindication to appendectomy (in 0.5% of cases).

Diagnostic and therapeutic laparoscopy for abdominal injuries.

Until recently, the use of laparoscopy for abdominal injuries was limited only to the diagnosis of injuries to the abdominal organs

cavity and retroperitoneal space. Today, new laparoscopic methods of final hemostasis are used with great success in case of damage to parenchymal organs. In case of abdominal injuries, laparoscopy for diagnosis and treatment was performed in 49 patients with abdominal trauma, in 33 of them with closed cavity organs. Of the 33 patients with blunt abdominal trauma, injuries were found in 17 (51.5%), and in 16 (48.5%) patients, they were excluded. Of the 17 patients with liver damage and in 15 patients with damage to the salnik, final hemostasis was achieved laparoscopically. In the case of closed abdominal trauma, the indications for laparoscopy were: indistinct peritoneal symptoms, the presence of free fluid in the abdominal cavity with a volume of less than 500 ml with a tendency to increase (according to ultrasound data In patients with penetrating abdominal wounds and the absence of clinical and instrumental data indicating the penetrating nature of these wounds, the indications for emergency laparoscopy were: thoracoabdominal wounds on the left; multiple stab wounds of the anterior abdominal walls (more than 5); impossibility of revision of the wound canal along the entire length during primary surgical debridement (PHO) of the wound (muscle mass of the lumbar and gluteal regions); penetrating wounds of the abdominal wall (established during PHO wounds) without clinical and instrumental signs of damage to the abdominal cavity organs; thoracoabdominal wounds on the right with liver injury and hemoperitoneum in cases where the liver wound was sutured from the thoracotomic access. Contraindications to laparoscopy in abdominal trauma were: unstable hemodynamics (systolic arterial pressure (SBP) less than 90 mmHg, heart rate (HR) more than 110 beats per minute; peritonitis; the presence of free gas in the abdominal cavity; hemoperitoneum with a volume of more than 500 ml (according to ultrasound); a pronounced adhesion process in the abdominal cavity. intestinal contents in the abdominal cavity. In 44% of cases during laparoscopic revision, there were no injuries requiring treatment, and in 39.4% of cases, indications for laparotomy were established. Indications for open surgery during diagnostic laparoscopy were: peritonitis;

necrosis or doubts about the viability of the intestine; perforation of the intestinal wall; widespread adhesions.

Based on our own experience, we have developed the following indications for emergency diagnostic video laparoscopy, which coincide with the available literature data:

- The impossibility of excluding acute diseases of the abdominal cavity organs in the process of long-term differential diagnosis
- unconscious state (due to craniocerebral injury, alcoholic or narcotic intoxication) of the patient, which does not allow to exclude acute abdominal diseases or damage to internal organs the need to clarify the nature, stage, localization, prevalence of acute pathological changes or damage to internal organs in order to choose the optimal method of treatment
- postoperative complications in the abdominal cavity that require certainty in the continuation of conservative treatment or surgical correction.

Thus, the use of laparoscopy for abdominal trauma made it possible to avoid laparotomy in 60.6% of patients. The average hospital stay was 4.6 days. The rate of postoperative complications was 1.9%. There were no fatal outcomes associated with the use of laparoscopy.

3.4. Laparoscopic dissection of adhesions in acute adhesive intestinal obstruction

A total of 24 laparoscopic operations for adhesive intestinal obstruction were performed. We believe that the expansion of indications for laparoscopic adhesiolysis in patients with recurrent course of adhesive obstruction is not justified, since, in our experience, the number of patients with repeated intestinal obstruction after a single conservative treatment does not exceed 5-6%. Indications for laparoscopy in acute intestinal obstruction were: clinical picture of country-gulable intestinal obstruction and the state after "small laparotomy" (appendectomy, gynecological interventions) in anamnesis; condition after the elimination of partial adhesions of small intestinal obstruction against the background of its recurrent course. Contraindications were: a large number of scars on the anterior abdominal wall after previous surgeries, indicating a widespread adhesion process; advanced intestinal obstruction with sharp swelling of the small intestine loops; suspicion of an oncological process. The nature of the adhesions had a very diverse picture. Adhesions were subdivided into cord-like, cords, strangs (26.1%), planar dense (36.1%), planar, membranous, soft (10.8%) and mixed (27%). With a mixed nature of adhesions, membranous, membranous, and arachnoid adhesions took place. Assessment of the nature of adhesions was necessary to select the most optimal method of laparoscopic adhesioenterolysis (LAEL). It should be noted that when performing operations with laparotomy access in these patients faced pronounced technical difficulties in entering the abdominal cavity and in separating pronounced adhesions. Performing laparoscopic adhesiolysis is one of the most difficult and dangerous interventions. In order to avoid the development of complications, the indications and contraindications for this operation should be carefully observed. The duration of the LO ranged from 15 to 160 minutes and averaged 60.3±2.5 minutes. The time parameters of the operation were different depending on the form and nature of the obstruction, the prevalence of the adhesion process and the severity of the intestinal obstruction.

Indications for laparoscopy were: the presence of a clinical and instrumental picture of acute intestinal obstruction without anamnestic data on previous operations on the abdominal organs; clinical picture of strangulated intestinal obstruction and "small laparotomy" in anamnesis; successful conservative treatment of adhesions of small bowel obstruction against the background of its recurrent course and "small laparotomy" in anamnesis. Summarizing our experience, we believe that the use of laparoscopic access in patients with adhesive intestinal obstruction is advisable either on an emergency basis with strict observance of indications and contraindications after a history of "minor operations", or in a planned manner after the resolution of intestinal obstruction with its recurrent nature

Thoracoscopic surgeries

Indications for thoracoscopy were: spontaneous pneumothorax, exudative pleurisy of unknown etiology, penetrating chest wounds (to exclude damage to the mediastinal organs, pericardium). Thoracoscopy technique: position of the patient on the table on the healthy side, the hand on the side of the operation is brought to the head. A skin incision 1-2 cm long is made in the V or VI intercostal space along the posterior axillary line. The thoracoscope is inserted through the thoracoport, the pleural cavity is examined. As a rule, thoracoports are arranged in the form of an equilateral triangular. Endoscopic instruments are inserted through additional thoracoports. The main stage of video-assisted thoracoscopic intervention is performed, after which drains are installed in the places where the thoracoports are located. Thoracoscopic surgeries were performed in 32 patients (1.3%).

Gynecological laparoscopic interventions

Laparoscopic operations were performed in 306 women, tubectomy in 181 in ectopic pregnancy, and cystectomy in 112 patients, as well as sterilization of the fallopian tubes in 16 patients.

Sterilization of the fallopian tubes. At the initial stage of laparoscopy, the abdominal organs were examined: the large salnik and the underlying loops of the intestine, the liver and subhepatic space, the stomach. Then, with the help of manipulators, the intestinal loops and the large salnik were carefully moved towards the diaphragm to provide access to the pelvic organs. The body of the uterus, its appendages, ligamentous apparatus, anterior and posterior uterine spaces, the lateral walls of the pelvis were examined to assess their anatomical relationships and identify pathological ones Formations. This assessment provided sufficient information to determine the further tactics of the operation

Figure 3.4. Intestinal loop intimately soldered to the anterior abdominal wall in the area of the insertion of the secondary trocar.

The electrosurgical method of sterilization consisted in capturing the fallopian tube with coagulation forceps at a distance of 3-4 from the uterine angle perpendicular to the mesosalpinx itself and subsequent coagulation. The coagulation zone should be at least 1.5 cm. The second stage was to cross or excise a section of the fallopian tube using scissors to reduce the risk of recanalization.

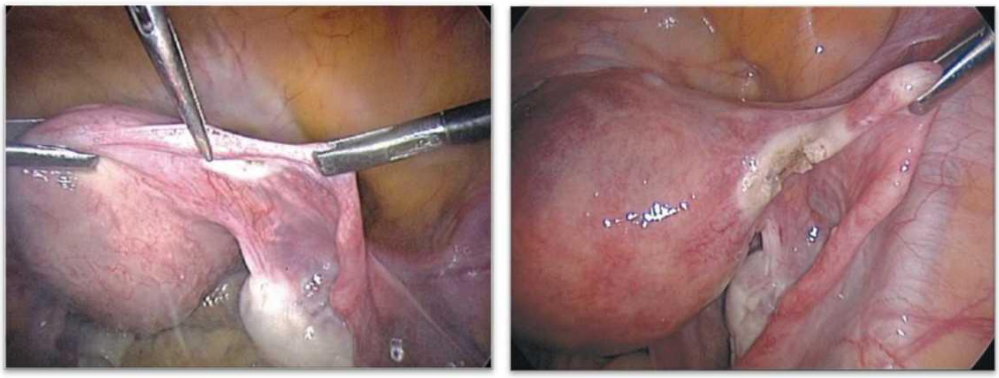

Figure 3.5. Coagulation and crossing of the fallopian tube. View of the fallopian tube after surgical sterilization

Ovarian surgeries were as sparing as possible in order to preserve ovarian reserve and hormone-producing function.

The active use of endovideosurgical techniques in the diagnosis and treatment of urgent abdominal pathology has made it possible to reduce the duration of dynamic observation of patients with unclear or latent symptoms, minimize diagnostic errors, and reduce the number of unnecessary and unjustified laparotomy. The use of the laparoscopic method in emergency abdominal surgery contributes to the improvement of the quality of diagnosis and treatment in

comparison with open methods and in most cases becomes the operation of choice for acute surgical diseases of the abdominal cavity.

Good technical equipment of the operating room, highly professional training of surgeons performing laparoscopic operations, thorough preoperative examination, strict compliance with the rules for performing laparoscopic operations, mandatory postoperative observation of patients are the key to successful laparoscopic interventions. The use of modern laparoscopic technologies, which combine high information content with minimal traumatization, helps to reduce the frequency of postoperative complications and deaths in acute surgical diseases and injuries of the abdominal cavity.

FINDINGS

1. Laparoscopic interventions for the main urgent diseases of the abdominal cavity are highly effective, having all the advantages of minimally invasive surgery and are quite safe, accompanied by a small percentage of intraoperative and postoperative complications in accordance with the nature of the operation
2. The developed and applied therapeutic and diagnostic algorithms for urgent diseases make it possible to determine the therapeutic tactics, indications and contraindications, choose the method of surgical treatment and establish the terms of diagnostic and therapeutic laparoscopic interventions.

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