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INCREASING THE EFFECTIVENESS OF SURGICAL TREATMENT OF CHOLEDOCHOLITHIOSIS IN PATIENTS WITH CHOLANGITIS

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Relevance. The prevalence of cholelithiasis, which affects 10-15% of men and has increased to 25% in women in industrialized countries, makes this pathology an urgent public health issue [1]. It is considered the primary cause of acute cholecystitis and associated complications in the vast majority of cases (95%), which emphasizes its importance. There are various opinions regarding the surgical strategy, especially in the acute phase of the disease. However, the widespread perception of acute cholecystitis as the only complication does not reflect the complexity of the picture: the disease can affect the complex "gall bladder - ducts - subgastric cholecystitis", causing a variety of disorders [7]. The key treatment method for purulent cholangitis is early surgical intervention aimed at external decompression of the biliary ducts using drains and removal of stones from the common duct [2]. This approach ensures the removal of infected biliary ducts, significantly reducing the degree of mechanical damage and toxic effects on the body.

However, traditional passive decompression leads to a sharp, unpredictable drop in pressure in the ducts, which leads to blockage of small channels with impaired biliary duct outflow and the formation of liver microabscesses. These local infections can subsequently grow into large abscesses [5].

There are various approaches to antibacterial treatment: some specialists [3] prefer to administer antibiotics before, during and after duct drainage surgery with periodic (every 5-8 days) drug changes in combination with metronidazole. The second group of researchers [1] supplements antibiotic therapy with sodium hypochlorite infusions, its endobiliary use and low-energy laser exposure to the liver. They also use sodium chloride solution with ozone to rinse the ducts [6].

Despite the complexity of approaches, including duct pressure regulation and antimicrobial measures, there are risks of liver abscesses, liver failure and sepsis. This necessitates the development of new surgical strategies for the treatment of this pathology.

The purpose of the study. Optimization of approaches to surgical intervention in choledocholithiasis with complications in the form of purulent cholangitis.

Materials and methods of the study. The study included data on 70 patients suffering from choledocholithiasis and hospitalized in the ASMI clinic for the period from 2023 to 2024. Most patients (78%) were of working age, which emphasizes the special importance of postoperative rehabilitation and prevention of functional disorders in the socio-economic context.

Study results. Conservative treatment of choledocholithiasis can lead to delays in operations, which occurs against the background of a serious condition of patients, deterioration of the gallbladder and unfavorable conditions in the intervention area. The main indication for surgical intervention in choledocholithiasis is the presence of destructive changes in the gallbladder.

The best results are achieved when emergency operations are performed in the first 1-3 days after hospitalization or delayed operations after 4-7 days. The time of the operation and its priority are determined by the degree of destruction of the gall bladder. Prophylactic cholecystostomy in acute isolated cholecystitis is justified only in patients in critical condition, which was rare in our observations - only 1% of cases. From Table 1 it is clear that the largest number of surgical procedures was open cholecystectomy, and also choledocholithotomy with intraoperative cholangiography,

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external drainage of the common bile duct and drainage of the subhepatic space (a total of 21 operations). This type of operation was also performed in case of extensive peritonitis (2 operations), it was supplemented by sanitation of the abdominal cavity through lavage and drainage. Nevertheless, the median approach was used, and in order to reduce the time of the operation, it was decided to limit ourselves to external drainage of the common bile duct, postponing the X-ray examination of the extrahepatic bile ducts until the postoperative period. Minimally invasive interventions include laparoscopic cholecystectomies with external drainage of the common bile duct and subhepatic space at the first stage. The second stage was endoscopic papillosphincterotomy with removal of stones.

Table 1

Stages and types of surgical interventions in traditional treatment of patients.

№	Types and Stages of Surgical Interventions	Quantity
1	Open cholecystectomy, choledocholithotomy, intraoperative cholangiography, external drainage of the choledochus, drainage of the subhepatic space	**21**
2	**1st stage:** Open cholecystectomy, external drainage of the choledochus, drainage of the subhepatic space. **2nd stage:** Endoscopic papillotomy with lithoextraction	**2**
3	**1st stage:** Laparoscopic cholecystectomy, external drainage of the choledochus, drainage of the subhepatic space. **2nd stage:** Endoscopic papillotomy with lithoextraction	**15**
4	**1st stage:** Cholecystostomy, cholecystocholangiography. **2nd stage:** Endoscopic papillotomy with lithoextraction. **3rd stage:** Open cholecystectomy	**2**
Total		**40**

The effectiveness of treatment was assessed by the number of postoperative complications and the mortality rate. Postoperative complications occurred in 14 patients in this group, of whom 6 died (Table 2). From the data presented in Table 2, it follows that the most serious complications were: hepatorenal failure, liver microabscesses with the development of sepsis, acute gastric ulcers with bleeding, chronic peritonitis and acute cardiovascular failure, which resulted in 6 deaths. The remaining postoperative complications ended without negative consequences. It is noteworthy that 4 patients died after emergency surgeries, and 2 - after urgent operations performed in response to progressive hepatitis and signs of cholangitis.

Table 2

Postoperative complications and their outcomes in patients with traditional surgical treatment.

№	Types of Postoperative Complications	Quantity	Number of Deaths
1	Hepatorenal failure	2	1
2	Liver microabscesses, sepsis	2	2
3	Acute stomach ulcers with bleeding	1	1
4	Continuing peritonitis	1	1
5	Postoperative pancreatitis	1	-
6	Acute cardiovascular failure	2	1

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№	Types of Postoperative Complications	Quantity	Number of Deaths
7	Thrombophlebitis of the lower extremities	3	-
8	Pneumonia	2	-

Total | | 14 | 6

With the implemented surgical method of treatment, operations were performed in 2 or 3 stages. The stages and types of surgical interventions for these patients can be found in Table 3.

The evaluation of therapeutic results was carried out according to the same criteria as for patients who received standard treatment, taking into account the number of postoperative complications and mortality (Table 4).

The data presented in Table 4 demonstrate that postoperative complications occurred in 11 patients (21.2%), of which in 5 cases (9.6%) they led to death. All fatal cases are associated with emergency surgical interventions. It is worth noting that the use of minimally invasive methods led to specific postoperative complications, such as bleeding from the major duodenal papilla (in 2 cases) and postoperative pancreatitis (in 2 cases). The most effective in the postoperative period was the combination of intraportal administration of antibiotics with lavage of the biliary ducts with a special medicinal solution containing the same antibiotic.

It is interesting that in this group such serious complications as liver microabscesses were not registered. This is due to the use of gradual pressure reduction in the biliary tract using lavage with a medicinal solution after surgery. In the most frail patients who underwent open cholecystectomy with cannulation of the umbilical vein, this result was achieved due to the simultaneous lavage of the biliary ducts and drip administration of antibiotics into the portal system.

Table 3

Stages and types of surgical interventions in the developed treatment.

№ п/п	Stages and types of surgical interventions	Quantity
1.	Stage 1 - cholecystectomy through a mini-access with external drainage of the common bile duct, IOCG, drainage of the subhepatic space; Stage 2 - endoscopic papillosphincterotomy with removal of stones from the common bile duct, NBD	9
2.	Stage 1 - traditional cholecystectomy with choledocholithiasis and external drainage of the common bile duct, IOCG, cannulation of the umbilical vein and drainage of the subhepatic space; Stage 2 - NBD	18
3.	Stage 1 - traditional cholecystectomy with external drainage of the common bile duct, IOCG, cannulation of the umbilical vein and drainage of the subhepatic space; Stage 2 - endoscopic papillosphincterotomy with removal of stones from the common bile duct, NBD	2
4.	Stage 1 - endoscopic papillosphincterotomy with removal of stones from the common bile duct, ERCP, NBD; Stage 2 - LSC with external drainage of the common bile duct and drainage of the subhepatic space	17

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5.	Stage 1 - endoscopic papillosphincterotomy, ERCP, NBD; Stage 2 - open traditional cholecystectomy with choledocholithotomy, IOCG, external drainage of the common bile duct, drainage of the subhepatic space, cannulation of the umbilical vein	2
6.	Stage 1 - endoscopic papillosphincterotomy, ERCP, NBD; Stage 2 - lithoextraction, ERCP; Stage 3 - LSCE with external drainage of the common bile duct and drainage of the subhepatic space	4
Total		52

Legend: IOCG - intraoperative cholangiography; LSCE - laparoscopic cholecystectomy; NBD - nasobiliary drainage; ERCP - endoscopic retrograde cholangiopancreatography

Table 4

Postoperative complications and their outcomes in patients with the developed surgical treatment.

Types of Postoperative Complications

№	Types of Postoperative Complications	Quantity	Number of Deaths
1	Hepatorenal failure	2	1
2	Bleeding from the major duodenal papilla	2	-
3	Postoperative pancreatitis	2	2
4	Continuing peritonitis	1	1
5	Cerebrovascular accident	1	1
6	Thrombophlebitis of the lower extremities	1	-
7	Pneumonia	2	-
	Total	**11 (21.2%)**	**5 (9.6%)**

Conditions for performing laparoscopic or mini-access cholecystectomy were identified in only 18% of patients. In the remaining 82%, we used classical cholecystectomy or, in some cases, with pronounced infiltrative changes, the mucoclasis method according to A.V. Vishnevsky.

Endoscopic papillotomy in acute cholecystitis complicated by choledocholithiasis, mechanical heltuha and cholangitis demonstrates effectiveness in 83.5% of cases. In situations where EPST cannot be performed, is ineffective or insurmountable complications arise, it is necessary to resort to "open" surgery. Biliary pancreatitis caused by a stone "wedge" in the common bile duct is a clear indication for a procedure that is most effectively eliminated through EPST if it is performed within the first 24 hours after admission. Infected biliary pancreatonecrosis with a fluid-bone component that does not show a tendency to delimitation requires "open" surgery. In our practice, the best results were achieved using the "open" chiwot method, which reduced mortality among such patients to 31%.

Conclusion. It is confirmed that ultrasound examination has a high diagnostic ability for early detection of biliary bladder destruction and biliary duct and sub-biliary chleosis pathologies, as well as for determining indications for surgical intervention in acute cholecystitis and its complications.

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