

OPTIMIZATION OF TACTICAL AND TECHNICAL ASPECTS OF SURGICAL TREATMENT OF PATIENTS WITH ACUTE CHOLECYSTITIS IN COMBINATION WITH CHOLEDOCHOLITHIASIS

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Annotation. The paper analyzes the results of surgical treatment of 140 patients with acute cholecystitis and choledocholithiasis complicated by cholangitis. Staged surgical treatment with preliminary decompressive interventions on the bile ducts made it possible to stop the phenomena of cholestasis and purulent intoxication, and improve the results of radical operations. At the same time, the need for the use of diapaetic and endoscopic transduodenal interventions was in 81% of patients with severe, 61% with moderate severity and 24% with mild severity of acute purulent cholangitis. Optimization of the tactical and technical aspects of complex surgical treatment of patients with acute cholecystitis and choledocholithiasis complicated by acute purulent cholangitis made it possible to reduce postoperative purulent-septic and cholemic complications from 24% to 12%, and mortality from 8% to 3%.

Key words: cholelithiasis, acute cholecystitis, choledocholithiasis, acute purulent cholangitis, surgical tactics.

According to the World Health Organization, the incidence of purulent complications of inflammatory diseases of the biliary tract occurs in 46% of cases and, despite the close attention of researchers to this problem, remains highly relevant [10].

The leading cause of bile outflow disorder is cholelithiasis (CSD). Every tenth inhabitant of the planet suffers from CSD, and choledocholithiasis, as its complication, occurs in 20-30% of cases [2,5,7].

Leading clinics dealing with this problem believe that the basis of biliary tract infection, as a rule, are two predisposing anatomical and physiological conditions: bile stasis and the possibility of developing a microbial attack. Stagnant bile is subject to thickening, sludge and is easily infected by the ascending route from the intestine [1,3,9].

In accordance with the rules, surgical treatment of patients with acute

cholecystitis and choledocholithiasis complicated by cholangitis is carried out in the following sequence. At the first stage, decompression of the bile ducts **is carried out** using low-traumatic methods: endoscopic papillosphincterotomy with the installation of nasobiliary drainage or percutaneous transhepatic drainage. At the second stage, patients undergo gallbladder removal by laparoscopic or minilaparotomy access with external drainage of the common hepatic duct. In 36.0-55.5% of cases, patients require one-stage operations by laparotomy access due to the presence of phlegmonous and gangrenous forms of gallbladder inflammation with perivesical infiltrate or local peritonitis or bilioduodenal fistula. **However, the results of surgical treatment do not always satisfy specialists; in 20% of cases, patients develop a septic condition, which results in death in 6.25% to 30.0% of cases [4,6,8,11].**

The aim of the study: to improve the results of surgical treatment of patients with acute cholecystitis and choledocholithiasis complicated by cholangitis by optimizing the tactical and technical aspects.

Material and methods of the study. The article presents the results of treatment of 140 patients with acute cholecystitis and choledocholithiasis complicated by cholangitis, who were treated in the period from 2001 to 2022. Of these, 91 were women (63.2%) and 53 men (36.8%) aged from 33 to 81 years. The average age of patients was 53.2 ± 6.2 years.

The duration of the disease of the biliary system organs in 112 (78%) patients was more than 5 years. 73.6%, i.e. 3/4 of the patients were hospitalized within three days from the onset of the disease. Duration up to 3 days occurred in 38 patients (26.4%), from 3 to 7 days - in 78 (54.2%), and more than 7 days - in 38 (26.4%) observations.

The first days of an attack of acute cholecystitis and cholangitis were characterized by pain in the right hypochondrium and epigastrium (89.9%), while after 4 days or more from the onset of the attack, the number of patients complaining of pain syndrome was much less (67.3%), but at the same time the number of patients with purulent-inflammatory complications of cholangitis increased (83.6%).

Acute purulent cholangitis as a complication of cholelithiasis developed as a result of choledocholithiasis and calculous cholecystitis in 82 (56.9%) patients, acute calculous cholecystitis and choledocholithiasis in 62 (43.1%) patients, and acute destructive cholecystitis was complicated by various forms of peritonitis in 29 patients (diffuse 7, local 22).

In accordance with the aim and objectives of the study, the patients were divided into 2 study groups. The comparison group consisted of 61 (42.4%) patients who were operated on for acute cholecystitis and choledocholithiasis complicated by purulent cholangitis in the period 2000-2009. The main study group consisted of 83 (57.6%) patients who received surgical treatment developed in the clinic in the period from 2010 to 2021. In the study, both groups of patients were identical in age, severity of

clinical manifestations and severity of the disease.

Factor analysis showed that the main cause of unsatisfactory results of surgical treatment of patients in the period 2001-2010 were cholangiogenic liver abscesses and biliary sepsis. Mortality was 8.2% (5 patients died). Various purulent-septic complications in the postoperative period were observed in 15 patients (24.6%). In all 61 operated patients, surgical intervention consisted of cholecystectomy (CE) with choledocholithotomy and external drainage of the common bile duct, with the surgical intervention performed through a wide laparotomy approach in 48 (7.9%), through a mini-approach - 13 (21%).

In this case, CE with choledocholithotomy for emergency indications (within 2-3 hours from admission to hospital) was performed in 29 (47.5%) patients due to acute destructive cholecystitis, and in 12 cases with complications of destructive cholecystitis with peritonitis. Also, 6 patients underwent operations for emergency indications in the presence of clinical signs of acute obstruction of the main bile ducts.

According to urgent indications (within the next 2-3 days), 32 (56%) patients were operated on, in whom the clinical picture of common bile duct obstruction prevailed, in the absence of clinical picture of destructive cholecystitis.

Moreover, the highest percentage of fatal outcomes and purulent-septic complications resulted from emergency operations (12.1% and 33.3%) with a combination of acute purulent cholangitis (APC) with acute destructive cholecystitis and peritonitis (14.8% and 44.4%, respectively).

In the main group of 83 patients operated in 2010-2019, treatment was carried out taking into account the severity of acute gastritis proposed at the consensus conference in Tokyo (2013). In accordance with these criteria, mild severity was found in 54 (65%), moderate in 18 (21.6%), and severe in 11 (13.2%) patients.

Patients were subjected to various minimally invasive and open surgical interventions taking into account the proposed severity criteria, as well as the presence of clinical signs of acute destructive cholecystitis and peritonitis.

In the main group, in patients with moderate (n=18) and severe OHC (n=11), minimally invasive procedures were used as the first stage of treatment in 20 patients. decompressive interventions.

In 9 patients with acute destructive cholecystitis, gallbladder decompression was performed using percutaneous transhepatic microcholecystostomy (TCMS) under ultrasound control. Then, 5 of them underwent endoscopic papillosphincterotomy (EPS) and nasobiliary drainage (NBD). In the remaining 4 patients, TCMS significantly relieved the clinical manifestations of acute cholecystitis. In 11 patients without clinical signs of acute cholecystitis, the first stage was endoscopic transduodenal intervention - EPSS with lithoextraction and NBD of the common bile duct. The second stage in these 20 patients on days 7-12 was cholecystectomy - LCE-

13, MLCE-7, while in 4 MLCE was supplemented with choledocholithotomy .

In 4 patients with peritonitis clinical presentation, laparotomy, choledocholithotomy , and abdominal cavity sanitation were performed according to emergency indications. Another 5 patients with progressive acute gastritis clinical presentation after an unsuccessful attempt at EPST underwent choledocholithotomy with open mini-access choledocholithotomy .

Thus, two-stage surgical treatment was performed in 11 (61.1%) patients with moderate severity and 9 (81.8%) with severe severity of acute hepatitis.

In mild cases of acute gastritis, two-stage surgical treatment was performed in 13 (24.1%) patients, and one-stage radical surgery was performed in 41 patients (table 1).

Table 1.

**Surgical interventions in patients with mild acute gastritis in the main group
(n=54)**

Diagnosis	Type of operation		Number of patients	
Acute purulent cholangitis and acute destructive cholecystitis	ChChMHS, EPST and NBD →	LHE	6	9
	ChChMHS, EPST and NBD →	MLHE	1	
	CHCHMS →	MLCE, choledocholithotomy	2	
Acute purulent cholangitis, acute destructive cholecystitis and local peritonitis	Laparotomy, CE, choledocholithotomy and abdominal cavity sanitation		13	
Acute purulent cholangitis, chronic calculous cholecystitis	EPST and NBD →	LHE	3	32
	EPST and NBD →	MLHE	1	
	MLCE, choledocholithotomy		28	

In total, 18 (21.7%) patients of the main study group underwent CCMHS in the surgical treatment of patients with acute hepatic cholecystitis. Ultrasound-guided gallbladder drainage was performed through a section of liver parenchyma to seal the channel and prevent bile leakage into the abdominal cavity.

In all cases, drainage was performed using an “umbrella” stylet – a catheter with a “basket” at the end, with a catheter diameter of 4F and 9F.

After performing microcholecystostomy, the gallbladder contents were

completely evacuated, its cavity was washed with saline until the discharge was clear, and the drainage was extended. The discharge through the drainage was visually assessed and sent for bacteriological examination. The completeness of emptying of the gallbladder cavity was monitored echographically .

In the main study group, EPST was performed in 27 patients. In 15 patients without clinical manifestations of destructive cholecystitis, EPST and NBD were performed as the first stage. In 12 patients with predominant clinical manifestations of acute destructive cholecystitis, this intervention was performed after CTCHS. At the same time, it should be noted that in 9 patients, attempts at EPST and NBD installation were unsuccessful, and in one case, the patient developed acute pancreatitis with a fatal outcome.

Thus, 2-stage surgical treatment was performed in 33 patients of the main group, which amounted to 39.7%. In these patients, after preliminary minimally invasive decompression of the bile ducts, the second stage on the 7-12th day was CE, of which 22 were LCE, 11 were MLCE, and in 6 of them MLCE was supplemented by choledocholithotomy .

In 50 (60.3%) patients of the main study group, radical surgery – choledocholithotomy and choledocholithotomy – was performed both through a wide laparotomic approach in 17 patients with a combination of acute destructive cholecystitis and peritonitis, and through a minilaparotomic approach in 33 patients. Thus, laparotomic endoscopy was performed in 22 (26.5%) patients, choledocholithotomy through a mini-approach in 44 (53%), and choledocholithotomy through a wide laparotomic approach in 17 (20.5%).

All surgical interventions in the main group of patients were completed with drainage of the common bile duct , of which 56 (67.5%) had external drainage and 27 (32.5%) had NBD during endoscopic transduodenal intervention.

Results and their discussion. Comparative analysis of treatment results in comparison groups showed a significant reduction in mortality in the main study group of patients. The most formidable complications in the control study group of patients were cholangiogenic liver abscesses and biliary sepsis, which caused fatal outcomes in 4 patients. Continuing peritonitis in another 1 observation also led to an unfavorable outcome. In total, 5 of 61 operated patients died in the comparison group, the mortality rate was 8.2%.

In this case, in the main group 2 of 83 operated patients died, the mortality rate was 2.4%. The cause of the unfavorable outcome was acute pancreatitis as a complication of transduodenal endoscopic intervention in 1 patient and ongoing peritonitis in 1 observation .

Various cholemic and purulent-septic complications were observed in 15 patients of the comparison group, which amounted to 24%. In 2 (3.2%), bilomas were formed

in the subhepatic region, which were drained by recanalization. contraperture . U 5 (11.4%) patients had bile leakage from drainage tubes installed in the subhepatic space, 5 (8.2%) patients underwent repeated operations to open and drain subhepatic or subdiaphragmatic abscesses. Also, 2 (3.2%) patients were re-operated on cholemic intra-abdominal bleeding. In 12 (19.6%) patients, suppuration of the postoperative wound was observed.

In the main study group, postoperative complications developed in 10 patients, which amounted to 12%. Moreover, bilomas subhepatic region were formed in 3 (3.6%) patients, which were successfully sanitized by punctures under ultrasound control. In 2 (2.4%) patients, cholemic bleeding from the liver from the area of transhepatic puncture of the gallbladder was observed. External bile leakage was observed in 2 patients, during relaparoscopy in 1 case, insufficiency of the cystic duct stump was revealed, which was re -clipped , in another observation, coagulation of the gallbladder bed as a source of bile leakage into the abdominal cavity was performed. Duodenal bleeding was noted in 1 patient after EPST, the bleeding was stopped. In 1 A subdiaphragmatic abscess was formed in the patient and was sanitized by repeated punctures under ultrasound control. In 3 patients, suppuration of the postoperative wound was observed.

Thus, optimization of tactical and technical aspects of complex surgical treatment of acute cholecystitis and choledocholithiasis complicated acute gastritis with the use of minimally invasive decompressive interventions contributed to the early relief of cholangitis, prevention of liver abscess formation and development of biliary sepsis. A reduction in purulent-septic complications from 24% to 12%, and mortality from 8% to 3% was achieved.

Conclusions:

1. Factor analysis in acute cholecystitis and choledocholithiasis complicated by purulent cholangitis showed that the main cause of mortality is cholangiogenic liver abscesses and biliary sepsis. The highest percentage of fatal outcomes (14.8%) and purulent-septic complications (44.4%) were observed after emergency operations with a combination of acute purulent cholangitis with acute destructive cholecystitis and peritonitis.

2. Staged surgical treatment taking into account the severity of acute purulent cholangitis and the use of preliminary decompressive interventions on the bile ducts made it possible to stop the phenomena of cholestasis and purulent intoxication and improve the results of radical operations.

3. Optimization of the tactical and technical aspects of complex surgical treatment of patients with acute cholecystitis and choledocholithiasis complicated by acute purulent cholangitis contributed to the improvement of treatment results due to early relief of cholangitis, prevention of liver abscesses and development of biliary sepsis.

At the same time, a decrease in postoperative purulent-septic and cholemic complications from 24% to 12%, mortality from 8% to 3% was achieved.

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