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# MINI-SURGICAL TREATMENT FOR ACUTE CHOLECYSTITIS

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**Abstract:**

Cholelithiasis occupies one of the first places among surgical diseases. Materials and methods. The results of surgical treatment of 138 patients with acute cholecystitis were analyzed. The age of the patients ranged from 18 to 89 years; women predominated - 84.8%. The preoperative diagnosis of acute cholecystitis was made based on clinical evaluation, laboratory data, and radiological signs of acute cholecystitis.

**Keywords:** cholelithiasis, acute calculous cholecystitis, cholecystectomy, drainage of the choledochus, rehabilitation

**RELEVANCE.** Cholelithiasis (GI) occupies one of the first places among surgical diseases. Treatment of GKB and its complicated forms still remains one of the most relevant and studied areas of abdominal surgery due to the continued increase in the frequency of these complications. Acute calculous cholecystitis is detected in 8-13.4% of patients admitted to surgical hospitals. Acute cholecystitis prevails mainly among people of the older age group. In young people, stone formation is often asymptomatic, and only 1-4% of such patients have biliary colic attacks. In the absence of treatment, acute obstructive cholecystitis develops in 20% of cases. The inflammatory process often proceeds at lightning speed, with the formation of gangrene and perforation of the gallbladder, thereby increasing the mortality rate. The main cause of necrobiotic processes in the gallbladder wall is an increase in intravesical pressure. High mortality in elderly and senile patients largely depends on the progressively increasing frequency of complicated forms of acute cholecystitis, in particular obstructive cholecystitis. Destructive forms of cholecystitis in the elderly are 9 times more common than in younger age groups.

In this regard, the reduction of postoperative mortality in cholecystitis largely depends on timely diagnostic measures and their correct interpretation at both preclinical and clinical stages, and correctly selected treatment. [1, 13, 14, 20]. Currently, three methods of gallbladder removal are used: laparoscopic cholecystectomy; transrectal cholecystectomy from a "mini-access" in the right hypochondrium; traditional cholecystectomy through median access [3, 4].

In this regard, the issues of timely diagnosis, rational conservative therapy, the choice of method and scope of a particular surgical intervention in GI, determining the timing of surgery, and the stage of treatment are still relevant, requiring careful study and standardization.

**MATERIALS AND METHODS OF RESEARCH.** The results of surgical treatment of 138 patients with acute cholecystitis were analyzed. The age of the patients ranged from 18 to 89 years (the average was 58.7 years), 117 (84.8%) women predominated. The diagnostic criteria for acute cholecystitis were determined in accordance with the Tokyo Guidelines. The risk assessment was based on the APACHE II disease severity classification system (Acute physiology assessment and Chronic Health Assessment II). High risk was determined on the APACHE II scale of 7 or more [9, 10, 17] and based on this, therapeutic tactics were determined. The preoperative diagnosis of acute cholecystitis was made based on a clinical assessment (tenderness in the upper right quadrant, Murphy's sign, fever), laboratory data (elevated CRP and leukocytosis), and radiological signs of acute cholecystitis during imaging (thickening of the gallbladder wall, stones, enlarged gallbladder, edema, abscess). Ultrasound was the main imaging method in all patients with clinically suspected acute cholecystitis. Computed tomography (n = 25; 18.1% was mainly used in patients with severe or diffuse symptoms) and MRI cholangiography (n= 12.8.7%) was mainly used in patients with suspected bile duct stones in addition to cholecystitis. On imaging, signs of acute calculous cholecystitis were detected in 117 patients (84.8%), and acute cholecystitis without radiologically visible stones in 9 patients (6.5%). Gallstones without signs of inflammation were visible in 12 patients (8.7%). Histopathological examination revealed acute cholecystitis in 78 (56.5%), gangrenous cholecystitis in 34 (24.6%) and exacerbation of chronic cholecystitis in 26 (18.9%).

All patients were divided into three groups depending on the type of surgical intervention performed: Group 1

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included 38 (27.6%) patients aged 18 to 61 years (average 39.5 years) who underwent laparoscopic cholecystectomy, group 2 - 75 (54.3%) patients in aged 26 to 86 years (on average 56 years), who underwent surgery from the mini-laparotomy access and in the 3rd group – 25 (18.1) patients aged 46 to 69 years (56.5 years), who underwent surgery from the traditional laparotomy access. There were 6 (15.8%) men and 32 (84.2%) women in group 1, 13 (17.3%) men and 62 (82.7%) women in group 2, and 2 (8%) men and 23 (92%) women in group 2.

**RESULTS.** Laparoscopic cholecystectomy was performed in 25 (65.8%) patients of the 1st group with mild course (Grade I) and 13 (17.3%) patients with moderate course (Grade II). Laparoscopic intervention was performed mainly within 24 hours after hospitalization, after preoperative preparation, including antibiotic prophylaxis with broad-spectrum drugs, infusion therapy, and according to the standard procedure under balanced anesthesia with ventilation and completed by drainage of the abdominal cavity. The average duration of the operation was 46.5 minutes. In all cases, the gallbladder was enlarged, strained, and often soldered to a large omentum or surrounding organs. Puncture of the gallbladder with evacuation of 30 to 50 ml of bile was required in 12 (31.6%) cases. Intraoperatively, signs of acute obstructive cholecystitis were detected in 18 (47.4%) patients, gall bladder phlegmon with signs of its destruction in 8 (21%) patients. 36 patients underwent routine cholecystectomy and 2 patients underwent laparoscopic cholecystectomy with Vishnevsky drainage of the choledochus. On the 2-3 day after the operation, 23 patients were discharged, which was 60.5%.

In the remaining 15 patients, the duration of postoperative hospitalization ranged from 4 to 6 days. The reasons for the delay of patients in the hospital were exacerbations of concomitant diseases requiring additional medical correction. Combined interventions were performed in 4 cases: Laparoscopic cholecystectomy was followed by appendage cystectomy, 1 cystovariectomy, and 1 prosthetic hernioplasty for umbilical hernia in 2 patients. Minilaparatomic cholecystectomy was performed in 13 (17.3%) patients of the 1st group with mild course (Grade I) and 62 (82.7%) patients with moderate course (Grade II). Cholecystectomy was performed from a right-sided transrectal approach. All operations were performed using conventional or special wound retractors (SAN) and the installation of 4-6 mirrors with variable geometry. The access size, as a rule, did not exceed 4-7 cm. The average access size was 5.5±0.1 cm. The duration of the intervention in patients who underwent surgery from a mini-laparotomy ranged from 40 to 210 minutes (on average, it was 63.8±2.2 minutes). Cholecystectomy was performed from the cervix or in a combined manner according to a standard surgical procedure. Bleeding from the gallbladder bed was usually stopped by coagulation; in a number of cases, the bed was sutured. Drainage of the common bile duct was performed in 3 patients of the 2nd group. Combined operations were performed in 4 (5.3%) patients of the 2nd group: prosthetics of hernias of the anterior abdominal wall in 3. Prosthetics of the anterior abdominal wall for postoperative hernia was performed in 1 patient of the 2nd group. Extensive traditional laparotomy was performed in 25 patients with severe course (Grade III) of the process. All these cases are the so-called "forced" laparotomy cholecystectomies, where pronounced infiltrative changes in the right hypochondrium were clinically established in the preoperative period. When deciding on the indications and timing of surgical interventions, we followed active tactics.

Surgery was performed in 7 (28%) patients 12 hours after hospitalization, 7 (28%) – 24 hours, 5 (20%) – 48 hours, 3 (12%) – 72 hours, and 3 (12%) – for 4 or more days. As can be seen from the above data, 76% of patients underwent surgery in the first 48 hours, adhering to active tactics. Of the total number of patients, 8 (32%) have phlegmonous, 12 (48%) have gangrenous cholecystitis, and 5 (20%) have subhepatic abscess. The duration of the operation from the traditional access was in the range of 40-150 minutes (on average 74.0±5.7 minutes). Good results were observed in 94.7% of patients in group 1 and 96% of patients in group 2. Local complications were more common after laparotomy cholecystectomies - 7 (16.7%), the failure of the stump of the cystic duct was observed in one case, in 2 cases - bile flow into the abdominal cavity, in one of them biliary peritonitis developed, which required relaparotomy, after which, against the background of acute cardiovascular insufficiency, the patient died intra-abdominal bleeding was observed in one case, which also required emergency relaparotomy; subhepatic infiltrate in the postoperative period was formed in 1 patient, conservatively resolved; and suppuration of the postoperative wound was observed in the 1st case. After laparoscopic cholecystectomies performed in 38 patients, 2 (5.3%) complications developed. In one case, the postoperative course was complicated by the formation of a subhepatic infiltrate, which was resolved conservatively, and in the other case, the formation of a subhepatic abscess was sanitized by relaparoscopy. After 75 minilaparotomy cholecystectomies, 3 (4%) local complications were observed - in one case, a

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subhepatic infiltrate formed, and in two cases, suppuration of the postoperative wound occurred.

**THE RESULTS OF THE DISCUSSION.** Our study has shown the expediency of laparoscopic cholecystectomy in the treatment of acute calculous cholecystitis. Our patients did not have any special complications during laparoscopic surgery. Although bile leakage occurred in two patients with acute cholecystitis, it was not caused by damage during laparoscopic surgery, as none of these cases were converted to laparotomy. However, the desire to avoid switching to laparotomy is reasonable without compromising safety in terms of aesthetic results. The main reason for conversion is difficulties during laparoscopic surgery due to severe inflammatory fibrosis. It is reported that surgical difficulties due to inflammation are associated with the time interval between the onset of the disease and surgery. [6, 7, 11, 12,19].

It is generally recognized that the main advantages of mini-access cholecystectomy, in addition to low invasiveness, are the use of standard surgical techniques, the possibility of a full revision of the bile ducts and performing cholecystectomy from the bottom, as well as suturing the gallbladder bed [2]. Nevertheless, performing this variant of cholecystectomy in patients with acute obstructive calculous cholecystitis is undoubtedly particularly difficult. Due to

due to this circumstance, many surgeons in such situations prefer to perform operations from traditional laparotomy access. In our study, the results of cholecystectomy from laparotomy and minilaparotomy approaches were compared to assess the possibilities of small access in patients with purulent-destructive forms of calculous cholecystitis. Good results of mini-access cholecystectomy, regardless of the form of cholecystitis, were obtained by a number of authors in 92.0-99.3% of patients [3, 15-18]. This coincides with our data for both the 1st and 2nd groups of patients (94.7 and 96%, respectively), which indicates the possibility of surgery. from minilaparotomy access in this complex group of patients. The total number of complications during this operation was small, and wound suppuration was most often observed, as noted by other researchers [4, 16]. After cholecystectomy, complications such as bile discharge from the bladder bed or stump of the cystic duct, formation of a subhepatic abscess, bleeding, and damage to the common bile duct have been described from a mini-laparotomy approach, although their frequency is low [2, 5,]. We have not observed any such complications.

Thus, the results obtained in this study indicate the high efficiency of cholecystectomy from a minilaparotomy approach in patients with exacerbation of chronic calculous cholecystitis and in patients with acute cholecystitis, including acute phlegmonous and gangrenous cholecystitis. Minilaparotomy access allows obtaining good immediate treatment results in most patients, ensuring a low number of intraoperative and postoperative complications. Cholecystectomy from a mini-laparotomy approach can be considered as a full-fledged minimally invasive method of surgical treatment of patients with cholelithiasis, including those with purulent-destructive forms of cholecystitis.

**CONCLUSIONS.** Laparoscopic cholecystectomy appears to be a reliable, safe and cost-effective procedure for acute cholecystitis. We believe that with a careful approach to acute cholecystitis, laparoscopic cholecystectomy will provide better results in the treatment of this condition. Minilaparotomy cholecystectomy is an effective and safe method of surgical treatment of acute cholecystitis, the number of complications, mortality and rehabilitation time are significantly better than with traditional surgery.

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