

CHOICE OF TACTICS OF SURGICAL TREATMENT OF ACUTE CHOLECYSTITIS AND ITS COMPLICATIONS

B.S. Zaporozhchenko, K.V. Kravets, V.N. Kachanov, Y. Hasan, I.V. Gomonyuk

*Odessa National Medical University, Odessa, Ukraine
Odessa Regional Clinical Medical Center*

Acute cholecystitis takes second place in the incidence of urgent surgical diseases in hospitals in Ukraine. Despite a marked improvement in the treatment results, the mortality rate after emergency operations (9.4-37%) for acute cholecystitis, complicated by peritonitis, remains several times higher than that in routine surgical interventions. [1]

There is an increase in the number of elderly and senile patients who constitute the so-called risk group due to severe concomitant pathology [4, 6]. In these patients, the death rate from acute cholecystitis often reaches 27% [1, 2].

Until now, the most controversial issues in the treatment of acute cholecystitis are the correctness of the diagnosis and the timing of the surgical intervention with the determination of the type of operation.

Objective

To develop rational surgical tactics and evaluate the effectiveness of treatment of acute cholecystitis complicated by peritonitis in patients of different age groups, with different pathomorphological forms of acute cholecystitis.

Materials and methods

We analyzed the treatment of 120 patients aged 18 to 82 years with various forms of acute cholecystitis from 2013 to 2018. Duration of the disease ranged from 5 hours to 7 or more days. 22 (17.9%) patients were hospitalized within 6 hours from the onset of the disease. In 43 (36.1%) patients the prescription of the disease was 6-24 hours, and 48 (40.0%) patients were admitted to the surgical department in 24 hours after the development of acute cholecystitis.

Destructive forms of acute cholecystitis were noted in 62 (51.6%) patients. Among the patients with destructive cholecystitis, diffuse peritonitis was diagnosed in 5 (3.4%) patients, local peritonitis and pericyclic infiltrate in 23 (19%), and 3 (2.1%) patients had a pericyclic abscess.

Acute cholecystitis was complicated by mechanical jaundice in 18 (15.1%) patients, which we tried to eliminate by using endoscopic instrumental methods at the very beginning of treatment.

66 (55%) patients were operated on in different time periods after admission to the surgical department. 4 (2.8%) of these were operated on as emergency, 63 (52.2%) urgently, and 54 (45%) in a delayed period (Table 1).

Table 1

Types of surgical interventions and the term of their performance in acute cholecystitis

Type of surgery	Emergency	Urgent	Delayed	Total
Traditional cholecystectomy (TCE)	2	16	5	23
Laparoscopic cholecystectomy (LCE), drainage of the abdominal cavity	4	38	41	83
Laparoscopic cholecystectomy with a lifting system (LLCE)	7	7	-	14
Total	13	61	46	120

The main type of surgery was a radical surgical intervention – laparoscopic cholecystectomy (LCE). However, in patients with increased operational risk, and contraindications to the use of carboxypeperitonium, lifting systems are used [5], in order to reduce the negative effect of carboxypeperitonium or use open mini-access in these patients.

It should be noted that the use of laparoscopic surgical interventions, in some cases, was associated with certain technical difficulties [3, 4, 6]. When performing urgent LHE in 7 (5.9%) patients, because of pronounced infiltrative-inflammatory changes in the cervical region of the gallbladder, a conversion was performed – cholecystectomy was performed through a transrectal mini-access.

The use of open cholecystectomy in this period in 16 (13%) patients was performed due to the presence of a firm infiltrate.

In the delayed period, laparoscopic cholecystectomy was performed in 3 (2.5%) patients in the conditions of pronounced cicatricial-adhesive process in the neck of the gallbladder, this required a change in the course of the operation and the performance of traditional cholecystectomy.

The choice of therapeutic tactics was determined by the pathomorphological form of acute cholecystitis, the presence of its complications and the degree of operational and anesthetic risk, taking into account the age of the patient and the timing of the disease [5]. There was no direct relationship between the patient's age and the severity of his physical condition.

Urgent operations in the next 2 to 3 days, the so-called "golden 72 hours" from the time of admission were performed in the absence of the effect of conservative therapy and the preservation of symptoms of intoxication and local peritoneal

phenomena in 61 (50.8%) patients. In the absence of peritoneal symptoms and signs of intoxication, conservative therapy was continued in patients with severe concomitant pathology.

Conservative therapy in patients with acute cholecystitis did not always contribute to the complete subsiding of the inflammatory process, and therefore surgical interventions had to be performed already against the background of aggravation of the general condition of patients. At the same time, the operation-anesthesia risk and the frequency of postoperative complications increase. This is especially true for elderly and senile patients, as well as individuals with concomitant pathology of the circulatory and respiratory systems, diabetes mellitus, functional reserves and compensatory capacities of whom are significantly reduced.

Patients with all forms of acute cholecystitis and low operation-anesthesia risk were given preference to active surgical tactics with daytime operations performed within the first two days of their admission to hospital 50 (41.6%). The only exception was patients with a firm pericyclic infiltrate, conservative treatment of whom was enforced – 3 (19.5%) patients.

The analysis showed that early LCE in acute cholecystitis is less traumatic and as to complexity, it did not differ much from the planned operation. Even with a loose, incompletely formed infiltrate, it is usually possible to easily isolate the gallbladder and the elements of its neck.

There were more technical difficulties with the removal of the gallbladder in patients operated on in 2 to 3 weeks after the acute attack – 46 (38.3%), a firm infiltrate was found in the region of the gallbladder and hepatoduodenal ligament or pericyclic abscess during surgery.

Complex conservative therapy was performed in patients with a massive and firm pericyclic infiltrate revealed by ultrasound, as well as with high operation-anesthesia risk. When conservative therapy was ineffective, cholecystostomy was used in these patients to decompress and sanitize the gallbladder in 2 (1.7%) patients as emergency surgical treatment.

Along with clinical and laboratory indices, special attention was paid to dynamic ultrasound control. Ultrasonic signs, indicative of the progression of inflammation, were:

- deterioration of visualization of the external contour of the gallbladder and elements of the hepatoduodenal ligament;
- increased zone of elevated echogenicity adjacent to the gallbladder;
- appearance of zones with a lack of blood flow in the wall of the gallbladder;
- presence of signs of occlusal cholecystitis.

Wide laparotomy in patients with initial high operation-anesthesia risk contributes to the occurrence of such complications as acute cardiovascular insufficiency, pneumonia, hepatic insufficiency. Therefore, minimally invasive surgical interventions were widely used in acute cholecystitis. At the same time, cholecystectomy was performed from minilaparotomy access in 11 (8.9%) patients or using lifting systems in LCE in 14 (11.6%), which excluded the negative influence of the strenuous pneumoperitoneum on the respiratory and circulatory system.

Cholecystectomy from minilaparotomy access or laparoscopic cholecystectomy should not be performed obligatory. In laparoscopic surgery, lengthening of the operation duration and the increased risk of possible complications may outweigh the benefits of this operation, also by increasing the

duration of ALV and anesthesia.

Results

97 (80.8%) patients were operated on using laparoscopic techniques (Table 2).

In laparoscopic interventions intraoperative cholangiography was performed in 16 (13.3%) patients. Now it is possible to perform fluorescent cholangiography.

Table 2

Types of laparoscopic operations and complications

Type of surgery	Number of patients	Complications	Mortality
LCE, drainage of the abdominal cavity	41	2	-
LLCE, drainage of the abdominal cavity	14	-	-
LCE, drainage of the common bile duct and abdominal cavity	9	1	1
Laparoscopic cholecystectomy	33	1	-
Total	97	4	1 (1.03%)

Comparative analysis of the incidence of postoperative complications and mortality, indicates the advantage of active surgical tactics with the use of minimally invasive surgical interventions for acute cholecystitis complicated by peritonitis. The main types of complications in 2 patients were inflammatory infiltration of the abdominal cavity and that of the subhepatic space in 1 patient that did not require reoperations. 1 (1.03%) patient died from progression against the background of severe cardiac pathology.

In 27 (23.9%) patients, "open" operations were performed (Table 3).

All patients underwent drainage of the abdominal cavity with one or more drains due to presence of peritonitis. Complications developed in 3 (2.6%) patients. 1 (0.9%) patient died from PE.

Table 3

Types of "open" surgery

Type of surgery	Number	Complications	Mortality
LCE, drainage of the abdominal cavity	8	1	-
LCE, drainage of the common bile duct and abdominal cavity	13	1	-
LCE with plasty of the common bile duct and drainage of the abdominal cavity	2	-	-
Total	23	2	-

Thus, the active tactics of treating patients with acute cholecystitis should be based on accurate information about the nature, prevalence of the inflammatory process, which must be obtained within the first 24 hours from the moment of hospitalization of the patient. Modern ultrasound methods make it possible to obtain sufficiently reliable objective information and to select an adequate therapeutic tactics in the majority of patients with acute cholecystitis and its complications.

The average duration of the preoperative period was 2.5 days, the total duration of treatment with LCE was 4.5 days, and

the total duration of treatment with TCE was 10.8 days. These technologies and rational tactical approaches in the treatment of patients with acute cholecystitis improve the results of treatment and shorten the period of patients' stay in the surgical hospital.

Conclusions:

1. In early onset of development of acute cholecystitis, laparoscopic cholecystectomy is effective. The use of lifting systems for laparoscopic cholecystectomy is advisable in elderly and senile patients with concomitant diseases of the heart

and lungs. In cases of acute cholecystitis, with a moderate pericyclic process, and gangrenous cholecystitis, laparoscopic cholecystectomy is preferable. In case of technical difficulties identified during surgery, the conversion of laparoscopy into vertical transrectal minilaparotomy access is justified.

2. In acute destructive cholecystitis, complicated by pericyclic abscess as well as in all forms of acute cholecystitis complicated by mechanical jaundice, which could not be resolved endoscopically in the preoperative period, the most rational is the traditional surgical intervention.

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