A.P.Petrov, M.M.Vinokurov

THE TACTICS CHOICE OF SURGICAL TREATMENT OF PATIENTS WITH THE ACUTE CHOLECYSTITIS COMPLICATED BY CHOLEDOCHOLITHIASIS AND OBSTRUCTIVE JAUNDICE

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We have used the improved estimation card of physiological condition severity for the objective evaluation of physiological condition severity of patients with acute cholecystitis complicated by choledocholithiasis and obstructive jaundice. This card has 39 risk factors, each of which corresponds to certain points. The patients are subdivided into 4 categories by physiological condition severity by points summing of factors of operational risk. The algorithm of treatment was developed for each category of physiological condition severity and the predicted outcome depending on the form of acute cholecystitis. The improved medical tactics showed the decrease of postoperative complications to 16,5 % and postoperative lethality rate to 4,7 %.

Keywords: acute cholecystitis, choledocholithiasis, obstructive (mechanical) jaundice, cholecystectomy.

Vinokurov Mikhail Mikhailovitch – PhD (Medicine), professor, department head of Medical Institute, North-Eastern federal university named after M.K.Ammosov, e-mail: mmv_mi@rambler.ru;
PETROV Alexander Petrovitch - surgeon of I surgical department of Republic hospital №2, post-graduate student of NEFU, e-mail: APPetrof73@rambler.ru;

Introduction. Surgical treatment of acute cholecystitis complicated by choledocholithiasis and obstructive jaundice is one of the most actual problems in modern surgery. It is connected firstly with the disease spreading, unsatisfactory results of surgical treatment and high percent of postoperative complications and lethality rate [7]. New hi-tech diagnostic methods and minimally invasive surgical interventions reducing risk of operation and expanding possibilities of surgical treatment were successfully approved and introduced in

clinical practice [1, 2, 3, 6]. Despite rapid development of diagnostic and surgical technologies, they are often used irregularly giving different results. Nowadays doctors have no common opinion concerning optimum treatment tactics of acute cholecystitis complicated by choledocholithiasis and obstructive jaundice [4, 5, 8].

The thesis aim was the results improvement of surgical treatment of patients with acute cholecystitis complicated by choledocholithiasis and mechanical jaundice, by improved medical tactics on the basis of the integrated estimation of physiological condition severity with the endoscopic and minimally invasive operations.

Materials and methods. Our work was based on the analysis of the results of surgical treatment of 127 patients with acute cholecystitis complicated by choledocholithiasis and mechanical jaundice from the surgical department of Republic hospital №2 - Yakutsk emergency center. There were 52 males (40,9 %), 75 females (59,1 %). All patients of this period were divided by age and severity category groups (tab. 1).

Each age group had patients with various physiological condition severity. However old patients were prevailed in III and IV categories. Jaundice duration varied from 2 till 15 days. Patients of I and II categories of severity had obstructive jaundice with the duration till 7 days. III and IV categories - 14 days and more. Long jaundice duration (14 days and more) authentically was more often marked by high indicators of bilirubin - over 200 mkmol/l, than obstructive jaundice duration till 7 days (tab. 2).

The majority of patients were observed some accompanying diseases during this period. The leading ones were the pathology of cardiovascular and respiratory systems.

According to US examination patients were distributed depending on the ultrasonic image of the gallbladder as follows: 1) catarral form; 2) destructive form (phlegmonous-gangrenous). 45 (35,4 %) patients were with catarral form, 82 (64,6 %) patients were with the destructive form. Patients were distributed by categories of physiological condition severity due to the card's points and morphological form of gallbladder inflammation (tab. 3).

Endoscopic retrograde cholangiopancreatography (ERC) and endoscopic papillosphincterotomy (EPS) with lithoextraction were done among 73 patients (57,4 %). ERC has allowed revealing concrements in choledochs in all patients. 58 cases (79,4 %) found individual stones, 15 patients (20,6 %) were revealed plural choledocholithiasis. The majority of patients had concrements localised in retrodual part of choledochs and in the ampoule of duodenal papilla.

Improved medical tactics were developed depending on the form of acute cholecystitis and category of patient's physiological condition severity (tab. 4).

Results and discussion. 2-stages treatment method was applied according to tactics in 43 patients with catarral cholecystitis and I, II and III categories of severity. At the first stage we carried out EPS in combination with lithoextraction. Technical difficulties during EPS were noted in 2 cases. The causes were: a large single stone (more 15мм) and plural concrements. The decrease of initially raised level of bilirubin was marked on 5-7 days after EPS. This criterion was considered as the indication to the beginning of the second stage - cholecystectomia. LC was performed in 36 patients, CMA - in 7 patients. The conversion on traditional laparotomy was required in 3 patients due to extensive infiltrate in hepaduodenal zone and in 1 case because of the vesical artery bleeding. After 2 stages medical tactics 3 patients of I and II categories of postoperative complications have developed: hematoma of gallbladder bed – 1 patient; drainage disposition of choledochs - 1; acute pancreatitis - 1. 3 patients of III category of severity were observed the suppuration of the postoperative wound in the postoperative period - 1 patient; hypostatic pneumonia - 1 patient; cardiovascular insufficiency - 1. There were no lethal issues in this group of patients.

EPS with lithoextraction were done in two patients with catarral form of acute cholecystitis and IV category of severity after intensive therapy in intensive care department within 24 hours. One patient had bleeding from papilla cut. One patient has died of acute cardiovascular insufficiency.

54 patients with the destructive form of gallbladder inflammation and I, II categories of physiological condition severity, the priority was given to urgent one-stage correction of cholecystitis choledocholithiasis from minilaparotomy access. There were 8 cases of traditional laparotomy. The causes were: extensive infiltrate of hepaduodenal cord in 2 patients; vesical artery bleeding - 2; gallbladder bed bleeding - 2; adhesive process in subliver space - in 2 cases. Postoperative complications were observed in 4 patients: suppuration of the postoperative wound - 1; drainage disposition of choledochs - 1; papilla cut bleeding - 1; hypostatic pneumonia - 1. There were no lethal issues in this group of patients.

21 patients with the destructive form of acute cholecystitis and III category of severity 3 stages medical tactics was applied. At the first stage the microcholecystostomy by US control was used after intensive therapy in intensive care department within 24 hours. At the second stage EPS with lithoextraction were made after inflammatory gallbladder cupping. At the last stage we made CMA - 11 patients, LC - 10. Transition to wide laparotomy was carried out in 5 patients. It was connected with high operative manipulations complexity because of the extensive inflammation in hepaduodenal cord. Postoperative complications took place in 6 cases which causes were: papilla cut bleeding - 1; hypostatic pneumonia - 1; sharp cardiovascular

insufficiency - 1; hepatic-renal insufficiency - 2; flaccid peritonitis - 1. Three patients have died in the nearest postoperative period due to hepatic-renal insufficiency (1), sharp cardiovascular insufficiency (1) and flaccid peritonitis (1).

The most successful medical tactics in 7 patients with the destructive form of acute cholecystitis and high operational- anesthesiology risk (IV category) was microcholecystostomy by US control. At the last stage EPS with lithoextraction were done after removal of intoxication symptoms and decrease of the initial score. 3 patients of this group had postoperative complications: sharp cardiovascular insufficiency in 1 patient; two patients have died from hepatic-renal insufficiency (1) and thromboembolism of lung artery (1).

The character and frequency of postoperative complications and lethality by severity categories are presented in tab. 5.

The data in table 5 show that in the second period of supervision, there were postoperative complications in 21 patients (16,5 %), including 6 cases (4,7 %) with lethal issue.

Conclusion. Thus having introduced in clinical practice the point's estimation of physiological condition severity we had been improved tactics of treatment of patients with acute cholecystitis, complicated by mechanical jaundice and choledocholithiasis. The differentiated choice of endoscopic correction of choledocholithiasis and timely operation based on application of minimally invasive technologies in optimum terms and necessary stages treatment, has given the chance to improve considerably the results of treatment. This approach helped us we to avoid postoperative complications in gallbladder and ducts operations. Using objective criteria of endoscopic choledocholithiasis corrections and minimally invasive operations, we have reached considerable decrease in postoperative complications to 16,5 % and lethality to 4,7 %.

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Table 1

Distribution of patients by age and severity

Age, years	Quantity of patients n(M±m%)	Category of physiological condition severity n(M±m%)			
		I	II	III	IV
20-39	6(4,7±1,8)	5(13,2±3,0)	1(1,8±1,2)*	-	-
40-59	45(35,4±4,2)	20(52,6±4,4)	21(37,5±4,3)*	4(16,7±3,3)	-
60-69	55(43,3±4,3)	12(31,6±4,1)	29(51,8±4,4)*	10(41,6±4,3)	4(44,4±4,4)
70-79	15(11,9±2,8)	-	1(1,8±1,2)	9(37,5±4,2)	5(55,6±4,4)
80 and older	6(4,7±1,8)	1(2,6±1,4)	4(7,1±2,2)	1(4,2±1,7)	-
Total	127(100,0)	38(100,0)	56(100,0)	24(100,0)	9(100,0)

*-Differences are statistically significant in comparison with I category of severity (p <0,05)

Table 2

Duration of obstructive jaundice by severity categories

Duration of obstructive jaundice, days	Total patients n(M±m%)	Category of physiological condition severity n(M±m%)			
		I	II	III	IV
To 7 days	71(55,9±4,4)	19(50±4,4)	43(76,8±3,7)	8(33,3±4,1)	1(11,1±2,7)
from 7 – 14 days	26(20,5±3,5)	11(28,9±4,0)	8(14,3±3,1)	4(16,7±3,3)	3(33,3±4,1)
from 14 and more	30(23,6±3,7)	8(21,1±3,6)	5(8,9±2,5)	12(50±4,4)	5(55,6±4,4)
Total	127(100,0)	38(100,0)	56(100,0)	24(100,0)	9(100,0)

*-Differences are statistically significant in comparison with I category of severity (p <0,05)

Table 3

Distribution of patients by the morphological form of gallbladder inflammation and severity categories

The form of gallbladder inflammation	Total n (M±m%)	Category of physiological condition severity n (M±m%)			
		I	II	III	IV
Catarral	45(35,4±4,2)	19(42,3±)	21(46,7±)*	3(6,6±)*	2(4,4±)*
Phlegmonous-gangrenous	82(64,6±4,2)	19(23,2±)	35(42,7±)*	21(25,6±)*	7(8,5±)*
Total	127(100,0)	38(100,0)	56(100,0)	24(100,0)	9(100,0)

*-Differences are statistically significant in comparison with I category of severity (p <0,05)

Table 4

Improved medical tactics

The form of acute cholecystitis	Diagnostics	Severity category	Medical tactics
Catarral	Physical examination US, EPS	I II	2 stages medical tactics 1. EPS+ LE 2. LC or CMA in the delayed order
		III	Preoperative preparation in intensive care department during 12-24 hours. 1. EPS + LE; 2. LC or CMA severity category decrease in the delayed order
		IV	Preoperative preparation in intensive care department during 24-48hours. EPS+ LE
Phlegmonous-gangrenous	Physical обследование US, EPS	I II	Preoperative preparation during 6-12 hours single-step correction cholecysto choledocholithiasis CMA + CLT + choledochitis drainage
		III	Intensive therapy in intensive care department during 12-24 hours 1. Microcholecystostomy 2. EPS + LE; 3. CMA + CLT + choledochitis drainage in category severity decrease
		IV	Intensive therapy in intensive care department during 24-48 hours 1. Microcholecystostomy 2. EPS + LE

Notes: laparotomy cholecystectomia (LC), cholecystectomia from mini access (CMA), choledocholititomy (CLT), endoscopic retrograde cholangiopancreatography (ERC), endoscopic papillosphincterotomy (EPS), lithoextraction (LE), ultrasonic examination (US)

Table 5

Structure of postoperative complications

by categories of physiological condition severity

Character of complications	Total	Category of physiological condition severity, n			
		I	II	III	IV
Flaccid peritonitis	1(1)	-	-	1(1)	-
Suppuration of the postoperative wound	2	1	-	1	-
Hematoma of gallbladder bed	1	-	1	-	-
Drainage disposition	2	1	1	-	-
Papilla cut bleeding	3	-	1	1	1
Hypostatic pneumonia	3	-	1	2	-
Sharp pancreatitis	1	-	1	-	-
Sharp cardiovascular insufficiency	4(2)	-	-	2(1)	2(1)
Hepatic-renal insufficiency	3(2)	-	-	2(1)	1(1)
Thromboembolism of lung artery	1(1)	-	-	-	1(1)
Total	21(6)	2	5	9(3)	5(3)

(…) - In brackets the quantity of the died patients was specified