

# RETROSPECTIVE ANALYSIS OF EMERGENCY LAPAROSCOPIC CHOLECYSTECTOMY

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## Abstract

*A retrospective analysis of surgeons' laparoscopic cholecystectomy with acute cholecystitis is presented. A rare form of diagnostic complication has been described: limited pus (abscess) over the liver which was removed by relaroscopy*

## Keywords

*laparoscopic cholecystectomy, complications, the transition to the traditional method, relaroscopy*

Шұғыл лапароскопиялық холецистэктомияның ретроспективті талдауы

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## Аңдатпа

*Мақалада жедел холецистит кезіндегі лапароскопиялық холестэктомия бойынша хирургтардың жұмысына ретроспективті талдау берілген. Диагностикалық асқынулардың сирек түрі сипатталған: бауырдың үстіндегі шектелген ірің (абсцесс), оны релароскопия әдісімен алып тасталынды*

## Түйін сөздер

*лапароскопиялық холецистэктомия, асқынулар, дәстүрлі әдістерге көшу, релароскопия*

Ретроспективный анализ экстренной лапароскопической холецистэктомии

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## Аннотация

*Представлен ретроспективный анализ лапароскопической холестэктомии хирургов с острым холециститом. Описана редкая форма диагностического осложнения: ограниченный гной (абсцесс) над печенью, который был удален с помощью релароскопии.*

## Ключевые слова

*лапароскопическая холецистэктомия, осложнения, переход к традиционному методу, релароскопия*

## Introduction

Laparoscope "Krasnogvardeyets", produced in Leningrad 1978, has been introduced for diagnostic purpose in railroad hospital of Aktyubinsk medical institute in the center of West-Kazakhstan railroad. The first introduction of laparoscope with medical purpose in Kazakhstan took place in 1992 in the clinic of Scientific surgical center of Syzganov in Almaty, and the first planned laparoscopic cholecystectomy was carried out in 1993 in our railroad hospital via Japanese apparatus "Olympus", LCE has become a common type of surgery for chronic and acute cholecystitis nowadays. During years experience has been accumulated, and indications for implementation of laparoscopic surgeries have broadened. Many articles have been published and candidate works prepared on implementation of laparoscope in diagnostics and complex treatment of acute cholecystitis. Now the operations are performed by apparatus Karl Storz.

The obvious simplicity of these surgeries for non-complicated forms of chronic cholecystitis and good results allow us to introduce emergency laparoscopic cholecystectomy for destructive forms of the disease. Readiness of surgeons to use endovideotechnics and stable operation of the latter, surgeons' knowledge in the area of clinical and pathological anatomy of gall channels and bladder have played an important part in carrying out urgent laparoscopic cholecystectomies.

Acute cholecystitis occupies the second place in frequency and forms 10–15 % of all acute surgical diseases of stomach area organs, at the same time, number of men and women, affected by this disease is equal after 50 years of age.

Therefore, the problem of emergency laparoscopic cholecystectomy in case of acute cholecystitis remains urgent, as implementation of LCE requires attentive training, studying approaches and possible complications after such complex operations in case of inflammation of portal veins of liver. During emergency on destructive forms of cholecystitis neck, body, and bottom of gall bladder are changed pathologically, hyperaemia and edema are observed in the surrounding tissues.

Sometimes Hartman recess is increased and welded with cystic channel that complicates diagnostics of the place of cystic channel inflow into choledoch. Anatomic intra-liver location complicated mobilization of the neck of gall bladder. In certain cases under an acute inflammatory process long or short cystic channel was welded by a fibrous tissue with choledoch and vessels, and it caused danger of damaging the latter. Sometimes cystic channel took shape of spiral ruffle of mucous membrane that was recognized as Heister's valve. It created certain complications during drainage (according to indications, for example, in case of cholangitis) of chole-

doch through the stump of cystic channel. In case of empyema or dropsy of gall bladder aspiration of its contents has been carried out completely via syringe for bacteriological sawing. After the bladder cavity is cleaned and nitrofurazone (30–50 ml) is placed in it, wall in the bottom area can be captured freely. Growth in stomach cavity up to 18 times under LCE combines radicalism (removal of pathologically-altered bladder with concrements), low possibility of trauma, and efficiency. Laparoscopic cholecystectomy provides patients with low possibility of trauma, short period of hospitalization, and quicker return to normal life in comparison to open cholecystectomy (Gilchrist B.F., Vlessis A.A., Kay G.A. et al., Soper N.J., Barteau J.A., Clayman R.V. et al., McGregor C.G. Evaluating systemic stress response in single port vs multi-port laparoscopic cholecystectomy // *J. Gastrointest. Surg.* – 2011. – № 15(4). – P. 614–622). During recent years reports on implementation of emergency LCE in case of acute cholecystitis have become frequent, however, not all problems of relaparoscopy, possible periods of secondary operations, technical principles and methods of treating complications (subhepatic abscess) have been defined yet (Westerband A. Van-De-Water J. Amzallag M.).

Our doctors have experienced complications during the period of mastering practice of laparoscopic cholecystectomy regarding uncomplicated cholecystitis, such as hypodermic emphysema (on face, chest, etc.) in case of insufflation of gas. Emergency LCE on an acute calculus cholecystitis can result in complications such as gall flow from the additional channel that was not located and clipped, prolapse of calculus from perforated places of gall bladder wall, and insignificant parenchymatous bleeding from the cavity. These complications have been removed by laparotomy and draining. One complication was difficult to diagnose: overhepatic encysted abscess. This case requires a separate explanation, as lower-lobe pneumonia has been suspected in the right and in sinus of heights during roentgenological inspection of lungs (obviously a joint reaction of lungs). This data stopped us from secondary penetrations. Repeated ultrasound inspection and laboratory-clinical observation over female patient N, 56 years of age (attended disease sugar diabetes of the 2nd type) led to the conclusion: relaparoscopy is required. Therefore, insufflation of gas has been carried out through subhepatic drainage that was left after emergency LCE. Diagnosis "encysted subphrenic abscess" has been verified after relaparoscopy, then it was mis-removed, cleaned, and its jacking was completely removed via laparoscopy, drainage for introducing antibiotics was left. The patient recovered quickly and was discharged with improvement. Insignificant complications were observed from the side of near-umbilical wounds such as seroma where gall bladder with infected stones had been discharged. In later

periods small postsurgical ruptures were registered in umbilical area, mostly among women who took physical work.

Research objective: The objective of this work is to improve results after emergency cholecystectomy with acute destructive cholecystitis through implementation of laparoscope and also share experience of carrying out emergency LCE on patients with acute cholecystitis.

## Material and methods

108 patients with cholecystitis have been received in general-surgery department of our clinic during the period 2015–2018. The patients arrived from Kazakhstan, nearby regions of Russia and Chechnya. Contingent of patients was different (authorities, lawyers, school teachers, doctors, pensioners, etc.), age varied from 18 to 75 years of age. Totally 58 patients were operated via laparoscopy. All patients were hospitalized in emergency to general-surgery department of the clinic in different periods from the beginning of disease. 32,4 % of patients were hospitalized during the first day of the disease, the rest were delivered to the hospital after more than one day. 50 patient of 108 was not operated due to various reasons.

58 of 108 patients were operated in a planned order via laparoscopy, and 50 patients were treated with emergency LCE with the diagnosed calculus cholecystitis, and 11 (2 %) patients were transferred to TCE under emergency LCE. Since 2015 LCE has been carried out on commercial basis, so the number of laparoscopic surgeries for the research has been taken for the period 2015–2018.

There were men 21 % and women 79 %. Diagnosis "acute cholecystitis" was established among all patients before surgery, and then confirmed after 7–10 days during histological inspection. During surgery acute phlegmonous cholecystitis has been established among 77,4 % patients, gangrenous cholecystitis – among 17 % patients, and empyema of gall bladder and local peritonitis – among 5,9 % patients.

Attending diseases have been registered among 63 % of patients, besides, several attending diseases have been registered among patients. Heart-vascular diseases were most frequent 25,3 % – hypertonic disease, 27,1 % – ischemic heart disease, 18,3 % – cardiosclerosis). Chronic bronchitis has been registered among 16,3 % of patients, bronchial asthma – among 0,5 %, lungs emphysema has been observed among 1,2 % of patients. obesity of different degree (24,2 % – 1st degree, 16 % – second degree, and 9 % – 3dr degree).

The following indications were set for emergency laparoscopic cholecystectomy: presence of acute (phlegmonous, gangrenous, and other forms) cholecystitis. Patients were observed in priority: roentgenological inspection, US, ECG, general

analysis of blood and urine, biochemical analysis of blood (bilirubin, blood coagulability and glucose, transaminase, remaining nitrous), blood inspection for HIV, reaction of Wasserman, Australian antigen, blood group and Rhesus factor, consultation of anaesthesiologist, cardiologist, endocrinologist, therapist, gynaecologist for women.

## Results

Absolute contraindications for emergency LCE were: chronic duodenal impassibility, mechanic jaundice and different types of gall peritonitis. Conditional contraindications were listed as: expressed welding process on the higher level of stomach cavity (earlier operation on stomach regarding perforated ulcer of duodenum), 1 patients was operated. No lethal outcomes were registered after emergency or postponed LCE.

## Conclusions

Emergency laparoscopic procedures can be performed in acute, allowing early intensify patients and significantly reduce the length of stay in the hospital, get a good cosmetic effect, restore the ability to work, the most optimal deadlines emergency laparoscopic cholecystectomy is the first day of onset of the disease, as in this time do not have time to develop gross anatomical and morphological changes in biliodigestive zone. Performing emergency laparoscopic cholecystectomy in acute cholecystitis is technically more difficult than in chronic. Difficulties encountered when capturing busy with thickened gallbladder wall (especially if the stone inside the gallbladder large or pus), the allocation of the elements of the triangle Kahlo, aspirate the contents of the subhepatic space and removing the gallbladder from the abdomen, etc. Absolute contraindication for emergency LCE in patients with acute calculous cholecystitis are: chronic duodenal obstruction, gangrenous cholecystitis, ruptured and diffuse peritonitis. In the preoperative evaluation of patients, particular attention should be given to U.S. hepatobiliary zone because of the technical features depend LCE (better look with the operating surgeon Medical ultrasonography). Cholecystectomy using laparoscopic techniques in patients with acute calculous cholecystitis is performed under general anesthesia with tracheal intubation and the use of muscle relaxants. During emergency LCE in patients with acute calculous cholecystitis should: 1) puncture and aspirate the contents of the large and busy gallbladder; 2) CAUTION carefully and highlight elements of the triangle Kahlo and well klipirovat; 3) rinse thoroughly, drain and aspirate obstructive and suprahepatic space. Thus, emergency laparoscopic cholecystectomy was performed in 58 patients with acute cholecystitis, 11 of them with the transition to the traditional method. Were no deaths.

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