



**ADVANTAGES, DISADVANTAGES AND
CONTRAINDICATIONS FOR SURGICAL
INTERVENTION METHODS IN CHRONIC
CALCULOUS CHOLECYSTIS**

Solijonov Ziyodillo Bakhtiyor ugli

Andijan State Medical Institute

Assistant Professor, Department of Surgical Diseases, PhD

<https://orcid.org/0009-0007-1721-7379>

Yakhyoyev Sardorbek Mamasobir ugli

Andijan State Medical Institute

Assistant Professor, Department of Surgical Diseases, PhD

<https://orcid.org/0000-0001-8577-3704>

Mo'ydinov Muslimbek Mansurjon o'g'li

Andijan State Medical Institute

Master of the Department of Surgical Diseases

ARTICLE INFO:

Received:16.10.2026

Revised: 17.10.2026

Accepted:18.10.2026

KEY WORDS:

*chronic calculous
cholecystitis,
laparoscopic
cholecystectomy,
traditional
cholecystectomy,
endosurgery.*

ABSTRACT

The authors analyzed the results of surgical treatment of 193 patients with chronic calculous cholecystitis (CCC). During the study, the indications and contraindications for various methods of cholecystectomy were clarified, and the advantages and disadvantages of each of them were identified. This made it possible to significantly increase the effectiveness and safety of surgical interventions. The results of the study demonstrate the possibility of a personalized choice of the surgical method, taking into account the individual characteristics of the patient and the characteristics of the disease.

Introduction. Abdominal penetration in gallstone surgery should provide an opportunity for better visibility and revision in the hepatobiliary area. [1; 2; 4; 6; 9]

A very broad or minor injury can lead to life-threatening complications during and after surgery. Different views of scientists on how to address this problem represent an ambiguous attitude to this problem. However, in recent decades, small incision cholecystectomy has become more common in the treatment of LXE and AXE gallstone diseases, but there is still no uniform standard of care. Access to the gallbladder through a small incision is due to the limited use of certain methods of cholecystectomy, which is due to the complexity of the design of the



instruments, which has led to limited use, and is accompanied by complications due to existing disagreements among surgeons in determining guidelines and contraindications [3; 5; 7; 8; 10]

Objective. To determine the indications, contraindications, and advantages and disadvantages of each of the three methods in cholecystectomy — laparoscopic cholecystectomy, small incision cholecystectomy, and "traditional" cholecystectomy.

Materials and methods. This study will include 193 patients with chronic calculous cholecistitis (CCC) who underwent surgery in the 3rd Surgical Department of the ADTI Clinic from 2024 to 2026.

Within the framework of the study, two patient groups were organized: the comparison group (77 people, 40.3%) and the main group (116 people, 59.7%). Patients from the comparison group who underwent surgery during the period ending 2024 were included in the retrospective analysis, which was included to identify trends in the treatment of chronic cholesterolitis before the introduction of innovative methods. Patients from the study group who underwent surgery using improved surgical approaches, including new techniques and optimized tactical solutions, were included in the prospective analysis. This allowed not only to assess the efficacy and safety of the innovations introduced, but also to fully compare the results with the control group. This approach ensured the objectivity and reliability of the data obtained, which allowed for the acquisition of grounded conclusions and recommendations for further development and improvement of practices.

In the comparison group of 77 patients, traditional cholecystectomy (TC) was performed in 7 patients, laparoscopic cholecystectomy (LCE) was performed in 54 patients (69.1%), and small incision cholecystectomy was performed in 16 patients (21.3%).

In a study group of 116 patients, TXE was performed by alternative small incision cholecystectomy in 8 patients (6.6%), LXE in 72 patients (62.0%), and 36 patients (31.4%). This method emphasizes innovation and improving techniques.

Practical Results. In determining the guidelines for certain surgical interventions, researchers do not distinguish between acute and chronic forms of gallstone disease. In this regard, in the course of our work, we have clarified the advantages, disadvantages, and contraindications of TXE, LXE, and alternative small incision cholecystectomy.

Advantages, disadvantages, and contraindications to surgical intervention methods. Researchers do not distinguish between acute and chronic forms of gallstone disease when determining indications for certain surgical methods. In this regard, in the course of our work, we have clarified the advantages, disadvantages, and contraindications of small-incision cholecystectomy, TXE, and LXE in STX.

Advantages of traditional XE.

1) According to Koxer and Fedorov, traditional XE is performed through the upper middle or oblique subcostal incisions, which allows wide access to the hepatic, extrahepatic, pancreas, and general bile duct.



2) TXE is currently being used in gallstone diseases complicated by peritonitis, adhesion process, location of the gallbladder within the liver, and cases where large stones in the neck are partially blocked in the neck.

Disadvantages of the traditional superior mid-laporotomy.

1. serious injury to the structures of the anterior abdominal wall, moderate surgical trauma, which leads to the development of postoperative intestinal paresis; a significant proportion of early and late traumatic complications (iatrogenic complications – 14.7%, surgical-related complications – 14.7%, traumatic complications – 10.7%);

2. increased risk of thromboembolism (TE - 6.6%, mortality - 1.3%); significant cosmetic defect; longer period of post-anesthesia and postoperative rehabilitation (required 4 to 6 weeks).

There are no indications against "traditional" XE, but in patients at high risk for surgery, it should be avoided when the time factor limits the outcome of traumatic surgery.

Advantages of endosurgical operations: instead of a wide incision (from 7 to 30 cm) in the abdominal wall, three to five trocar holes of 0.5 cm are performed. The result: -1 cm

1) during the postoperative period there will be no stronger pain;

2) awesome cosmetics;

3) after anesthesia on the same day, the patient can be activated;

4) the duration of hospital stay after surgery is up to 3-4 days;

5) 14-15 days after the operation, it is possible to resume normal work and household chores;

5) purulent-septic complications, as well as hernias, are very rare;

6) multiple-optical magnification and device mobility allow for timely diagnosis and operation of surgical pathologies combined at different levels of the abdomen, causing minimal trauma to the surrounding organs and tissues.

Disadvantages of endosurgical technique.

1) Price. Expensive equipment, delicacy of instruments, disposable imported consumables, the need for special training, the specificity of the technique — all this leads to a relatively high cost of endosurgical operations;

2) Anesthesia. Gassing of the abdomen is necessary to perform LXE, at a pressure of 10-14 mm Hg. st.;

3) Duration. Due to a slight loss of freedom of control, inability to use the arm directly, and several other reasons, LXE can last longer than in a small incision cholecystectomy;

4) A two-dimensional picture of the surgical field. A comparison analysis showed that the frequency of iatrogenic diseases in the comparison group was recorded at 14.2%, i.e., up to 7.5%, which contributed to the choice of differentiated tactics in the study group.

Indications against LXE include:

1) is associated with the risk of anesthesia of the 3rd and 4th level and the instability of diseases;



2) obesity of 2-3 degrees, which does not allow the surgeon to move confidently in the field of surgery;

3) if major open operations have been performed on the organs in the upper layer of the abdomen in the past, as this dramatically increases the risk of damage to the abdominal organs during the insertion of the trocars and reduces the likelihood of access to the stomach due to the process of adhesion in the anterior abdominal wall as well as in the subhepatic cavity;

4) incurable blood clotting diseases (hereditary);

5) The level of pressure inside the abdomen is above 15 mm Hg. St.;

6) the third trimester of pregnancy;

7) In conditions of insufficiently tensioned pneumoperitoneum;

8) stones larger than 30 mm, located on the neck of the gallbladder, located at the entrance to the choledochus;

9) location of the gallbladder into the liver, with sclerosis and sclerosis gallbladder;

Modified small incision cholecystectomy is performed in patients with diseases that are at high risk of anesthesia and have been shown against the use of laparoscopy. All of this allows for the performance of a small incision cholecystectomy: cardiovascular failure; coronary artery disease; hypertension; history of myocardial infarction; heart defects; obstructive pulmonary diseases, including bronchial asthma.

Advantages of small incision XE.

1. in any type of body structure of the patient; reduction of trauma – minimal damage to the anterior abdominal wall (the muscles are not cut but dissociated along the fibers, which does not cause severe pain after surgery and accelerates the healing of the wound), because the injury heals easily and quickly, leaving no visible scars; the postoperative process is not much different from LXE;

2. Reduced risk of postoperative complications; Possibility of surgery on patients who have undergone surgery on the anterior abdominal wall;

3. the surgeon observes his movements directly with his own eyes, and not on the video screen (thus the risk of damage to the surrounding abdominal organs is reduced);

4. minimal use of anesthesia;

5. there is no need to use narcotic painkillers; this technique can be used in the 2nd and 3rd trimester of pregnancy; the possibility of applying skin stitches cosmetically ;

6. Intestinal paresis does not occur. Can be applied when there are indications against LXE.

7. When you undergo conversion in LXE, you should first proceed to a small incision cholecystectomy. If difficulties arise in the case of small incision XE, the incision should be widened to the normal size, but not more than 10 cm and it is imperative to maintain the integrity of the rectus abdominis dextra muscle.



A comparison analysis showed that in the study group, the incidence of postoperative complications decreased by 3.9% (from 4.2% to 0.3%) and the number of relaparotomies decreased by 2.4% (from 2.4% to 0) compared to the comparison group.

Small incision XE disadvantages.

1. In particularly obese patients, there may be a need for surgical interventions to the extrahepatic bile duct;
2. Atrophic changes in the liver, a high position above the edge of the rib arc.

Contraindications against small-incision XE.

It persists in generally accepted cases in the presence of diffuse and diffused bile peritonitis and there are indications against endotracheal anesthesia.

Thus, by making changes to the preoperative preparation program, developing and implementing an improved treatment and diagnostic algorithm and an alternative small-incision cholecystectomy method, and defining the advantages, disadvantages, and contraindications of all three methods in CCC, we have been able to optimize surgical tactics for this disease. Where there are indications against LXE, the method of choice has been the small-incision cholecystectomy method.

By making changes to the preoperative preparation program, developing and implementing an improved treatment and diagnostic algorithm and an alternative small incision cholecystectomy method, as well as identifying the advantages, disadvantages and contraindications of all three methods, we have achieved the optimization of surgical tactics for this disease.

If there are indications against cholecystectomy with a laparoscopic approach, the method of choice is an improved technique of small-incision cholecystectomy.

Different use of cholecystectomy methods with determination of indications and contraindications makes it possible to optimize the methods of surgery in CCC and to choose the most optimal method with a complex of preoperative preparations, as well as to improve the results of surgery: the frequency of iatrogenic injuries decreased by 12.1%, postoperative complications associated with surgery by 5.7%, purulent-septic cases decreased by 3.65%, mortality decreased by 6.5 times, the number of reoperations decreased by 1.9%.

Conclusion. Clear guidelines, contraindications, and justification of the advantages and disadvantages of each cholecystectomy method can significantly improve the effectiveness and safety of surgical intervention. This approach provides personalization of the surgical method based on the individual characteristics of the patient and the characteristics of the disease. As a result, we achieve a more accurate and predictable outcome, reduce the risk of complications, and improve the quality of life of patients.



References

1. Бокиев Ф.Б., Рашидов Ф.Ш., Рахмонов Д.А., Амонов Ш.Ш. Наш опыт 4360 лапароскопических холецистэктомий при желчнокаменной болезни //Вестник Авиценны. 2020. -Т.22. №4. –с.572-578.
2. Греясов В.И., Чучуевский В.М., Сивоконь Н.И., Агапов М.А. Особенности лапароскопической холецистэктомии у пациентов с хроническим калькулезным холециститом с признаками «отключенного» желчного пузыря //Анналы хир. гепатологии. -2018. Том 23, № 213, С. 93-99.
3. Дарвин В.В., Краснов Е.А. и др. Интраоперационные повреждения внепеченочных желчных протоков: профилактика, коррекция /Непрерывное медицинское образование и наука. – 2015. – Т.10, №3. - С.78-79.
4. Добровольский С.Р., Богопольский П.М., Нагай И.В. и др. Преимущества и недостатки различных способов холецистэктомии //Хирургия. Журнал им. Пирогова. - 2004. -№7. -С. 40-46.
5. Желчнокаменная болезнь. <https://expert-clinica.ru/diseases//zhelchnoka-mennaya-bolezn.>, 2022.
6. Amjad S., Rizvi A., Asmat S., Akhtar S., Faridi S., Ahmad M. Forecast of difficult Laparoscopic cholecystectomy by Sonography: An added advantage. Biomedical Research. 2012;23 (3):425-429.
7. Aprea G., Coppola Bottazzi E., Guida F. et al. Laparoendoscopic single site (LESS) versus classic video-laparoscopic cholecystectomy: a randomized prospective study //J Surg Res. – 2011. – № 166(2). – P. 109–112.
8. Brunt L.M., Deziel D.J., Telem D.A. et al. Safe Cholecystectomy Multi–society Practice Guideline and State of the Art Consensus Conference on Prevention of Bile Duct Injury During Cholecystectomy //Annals of Surgery. – 2020. – Vol. 272. -№ 1. - P. 3.
9. Ekici U., Tatli F., Kanlioğlu M. Preoperative and postoperative risk factors in laparoscopic cholecystectomy converted to open surgery //Advances in Clinical and Experimental Medicine. – 2019. – 28(7). – P.857-860.
10. Kiani Q., Farooqui F., Khan M.S. et al. Association of Body Mass Index and Diet with Symptomatic Gall Stone Disease: A Case–Control Study //Cureus. – 2020. - Vol. 12. - № 3. -P. e7188.



HISTOLOGY OF THE CENTRAL ORGANS OF IMMUNOGENESIS

Khabibullayev Sirojiddin Ziyodullayevich

*1st year student of the Namangan branch of Tashkent
International University of Kimyo, Department of Medical
Sciences +998 99 137 72 72 /*

khabibullayevsirojiddin177@gmail.com

ARTICLE INFO:

Received:16.10.2026

Revised: 17.10.2026

Accepted:18.10.2026

KEY WORDS:

*Thymus, thymus, T-
lymphocytes,
immunogenesis,
calculus, trabecula,
cortex, medulla,
epithelioreticulocytes,
hematohymic barrier,*

ABSTRACT

The central organs of immunogenesis, which ensure immunological stability in the human body - the bone marrow and the thymus - have a unique histological structure, and the processes of formation, differentiation and selection of immune cells throughout our lives depend on their histophysiological state. Also, the study of immunodeficiency states and their histopathological aspects resulting from the disruption of the microstructure of these organs or their age-related involution is one of the current directions of modern medicine today.