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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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EFFECTIVENESS OF LAPAROSCOPIC CHOLECYSTECTOMY IN THE SURGICAL TREATMENT OF ACUTE DESTRUCTIVE CHOLECYSTITIS

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✓ Resume

This study evaluates the effectiveness of laparoscopic cholecystectomy in the treatment of acute destructive cholecystitis, comparing the results with the traditional method of open cholecystectomy. The study involved 156 patients divided into two groups: the main (laparoscopic cholecystectomy) and the comparison group (open cholecystectomy). The results showed that the laparoscopic approach provides a faster recovery, reduced operating time and fewer postoperative complications, compared with the open method. However, in some cases, when there are difficulties with the anatomy or patient's condition, conversion to open surgery is necessary.

Key words: Laparoscopic cholecystectomy, acute destructive cholecystitis, open cholecystectomy, surgical intervention.

ЭФФЕКТИВНОСТЬ ЛАПАРОСКОПИЧЕСКОЙ ХОЛЕЦИСТЭКТОМИИ В ХИРУРГИЧЕСКОМ ЛЕЧЕНИИ ОСТРОГО ДЕСТРУКТИВНОГО ХОЛЕЦИСТИТА

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✓ Резюме

Данное исследование оценивает эффективность лапароскопической холецистэктомии в лечении острого деструктивного холецистита, сравнивая результаты с традиционным методом открытой холецистэктомии. В исследовании приняли участие 156 пациентов, разделённых на две группы: основную (лапароскопическая холецистэктомия) и группу сравнения (открытая холецистэктомия). Результаты показали, что лапароскопический подход обеспечивает более быстрое восстановление, сокращение времени операции и меньшее количество послеоперационных осложнений, по сравнению с открытым методом. Однако в некоторых случаях, когда возникают сложности с анатомией или состоянием пациента, необходима конверсия в открытую операцию.

Ключевые слова: Лапароскопическая холецистэктомия, острый деструктивный холецистит, открытая холецистэктомия, хирургическое вмешательство.

O‘TKIR DESTRUKTIV XOLESISTITNI XIRURGIK DAVOSIDA LAPAROSKOPIK XOLESISTEKTOMIYA’NING AFZALLIGI

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✓ Rezyume

Ushbu tadqiqot o'tkir destruktiv xoletsistitni davolashda laparoskopik xoletsistektomiyaning samaradorligini baholaydi, natijalarni an'anaviy ochiq xoletsistektomiya usuli bilan taqqoslaydi. Tadqiqotda ikki guruhga bo'lingan 156 bemor ishtirok etdi: asosiy guruh (laparoskopik xoletsistektomiya) va taqqoslash guruhi (ochiq xoletsistektomiya). Natijalar shuni ko'rsatdiki, laparoskopik usul ochiq usul bilan solishtirganda tezroq tiklanish, qisqa operatsiya muddati va kamroq operatsiyadan keyingi asoratlarni ta'minlaydi. Biroq, bemorning anatomiyasi yoki holati bilan bog'liq asoratlar mavjud bo'lgan ba'zi hollarda ochiq operatsiyaga o'tish kerak.

Kalit so'zlar: Laparoskopik xoletsistektomiya, o'tkir destruktiv xoletsistit, ochiq xoletsistektomiya, jarrohlik aralashuv.

Relevance

Acute destructive cholecystitis is one of the most common causes of emergency surgeries, characterized by inflammation and destruction of the gallbladder wall, which may lead to severe complications such as perforation, peritonitis, and sepsis. The effectiveness of surgical treatment in this disease directly depends on the choice of intervention method. Currently, laparoscopic cholecystectomy (LC) is recognized as one of the safest and most effective methods for treating acute cholecystitis, as supported by numerous studies [3, 5]. The laparoscopic approach significantly reduces the invasiveness of the intervention, reduces postoperative pain, and shortens recovery time [4].

However, laparoscopic surgery for acute destructive cholecystitis has its limitations, related to anatomical features and the severity of the inflammatory process. In some cases, the presence of adhesions, dense calcified formations, or severe complications may necessitate conversion to an open procedure, requiring additional time and skills from the surgeon [1].

A comparative analysis of treatment outcomes conducted in different clinics has shown that while laparoscopy is the preferred method for most patients, in severe cases, conversion to open surgery may be necessary to prevent serious complications such as peritonitis or massive bleeding [2]. This emphasizes the need for a comprehensive assessment of the patient's condition and risk factors before selecting the method of surgical intervention.

Given the above, the aim of this study is to evaluate the possibilities of laparoscopic surgery in the treatment of acute destructive cholecystitis and analyze the factors affecting the choice of intervention method. Our data, based on the observation of 156 patients, will contribute to a deeper understanding of the effectiveness and limitations of laparoscopic techniques in the treatment of this pathology.

Materials and Methods

The study included 156 patients with acute destructive cholecystitis who were hospitalized in the surgical department of the Samarkand branch of the Republican Research Center for Emergency Medical Care from 2018 to 2024. Patients were conditionally divided into two groups: the main group and the comparison group.

1. **Main Group:** The main group (82 patients) consisted of those who underwent laparoscopic cholecystectomy from 2021 to 2024. Minimally invasive laparoscopic methods of surgical intervention were predominantly used. In 17 patients (20.7%) of this group, conversion to open surgery was required due to complications such as significant tissue inflammation or anatomical changes.

2. **Comparison Group:** The comparison group (74 patients) consisted of patients treated from 2018 to 2020 who underwent open cholecystectomy. All patients in this group underwent traditional surgery with an incision and access through the right subcostal area.

All patients were examined upon admission to the hospital, with the assessment of key clinical parameters such as body temperature, symptoms of peritonitis, jaundice, and others.

Laboratory Studies: Blood tests (general blood count, biochemistry, C-reactive protein levels, leukocyte formula), markers of inflammation, liver, and kidney function tests were performed.

Instrumental Studies: Abdominal ultrasound (US) was conducted to assess the condition of the gallbladder, identify calcified processes, perforations, and other complications. In some cases, computed tomography (CT) was used for more detailed visualization.

Surgical Interventions: The results of the surgery, including the time of the operation, complication rates (such as bleeding, bile duct injuries, peritonitis), and the need for conversion, were assessed.

Statistical Analysis: The statistical data analysis was performed using standard methods to evaluate differences between the groups, such as the Student's t-test for comparing means and the χ^2 test for evaluating the frequency of different outcomes. All statistical calculations were performed using SPSS software (version 22.0), with a significance level set at $p < 0.05$.

Result and discussion

The study analyzed the clinical outcomes of 156 patients with acute destructive cholecystitis who were treated at the Samarkand branch of the Republican Research Center for Emergency Medical Care from 2018 to 2024.

1. Main Group (82 patients who underwent laparoscopic cholecystectomy):

- The average age of the patients in the main group was 52.4 ± 7.8 years.
- In 17 cases (20.7%), the operation was converted to open surgery due to severe tissue inflammation or technical difficulties related to impaired visualization.
- The average duration of the surgery in the main group was 65 ± 12 minutes. In 7.3% of cases, adjustments were required during the operation.
- The average duration of hospitalization post-operation was 4.2 ± 1.1 days, significantly shorter than in the comparison group.
- Postoperative complications were registered in 9 patients (11%), including infected wounds (4 cases), mild bleeding (2 cases), biliary leaks (1 case), and mild peritonitis (2 cases). All complications were successfully managed conservatively.
- Recurrence of cholecystitis occurred in 2 patients (2.4%) within the first year after surgery.

2. Comparison Group (74 patients who underwent open cholecystectomy):

- The average age of patients in the comparison group was 55.3 ± 9.2 years.
- The operation was performed using standard open access. The average duration of the surgery was 95 ± 15 minutes.
- The average duration of hospitalization post-operation in the comparison group was significantly longer, 7.1 ± 2.4 days.
- A higher rate of postoperative complications was observed in the comparison group: 21.6% (16 patients) had wound infections, 4.1% (3 patients) had peritonitis, and 2.7% (2 patients) had biliary leaks. One case (1.4%) of pneumonia was reported.
- Recurrence of cholecystitis was recorded in 4 patients (5.4%) within the first year after surgery.

3. Comparative Analysis:

- **Operation Duration:** Laparoscopic cholecystectomy was performed significantly faster in the main group compared to the open surgery in the comparison group (65 minutes vs. 95 minutes).
- **Hospitalization Duration:** Patients in the main group were discharged 2.9 days earlier, confirming faster recovery after laparoscopic surgery.
- **Complication Rates:** Complications were 2.4 times less frequent in the main group compared to the comparison group (11% vs. 21.6%). Furthermore, no severe postoperative complications, such as pneumonia or severe peritonitis, were observed in the main group.
- **Recurrence of Disease:** Recurrence of cholecystitis in the main group was 2.4%, significantly lower than the 5.4% observed in the comparison group.

Discussion

Laparoscopic cholecystectomy has several advantages over traditional open surgery, including a lower risk of postoperative infectious complications, less pain, and faster recovery. However, as demonstrated by our study, laparoscopic techniques are not always feasible due to anatomical and technical difficulties associated with acute destructive cholecystitis. In cases of severe inflammation and exacerbation of cholecystitis, when dense adhesions are present and visualization is impaired,

conversion to open surgery may be necessary to ensure complete removal of the organ and prevent complications.

Several domestic and international studies confirm the high effectiveness of laparoscopic surgery in treating acute destructive cholecystitis. For example, Memon et al. (2019) showed that laparoscopy has a lower complication rate and shorter hospitalization compared to open surgery in treating acute cholecystitis [5]. Similarly, studies by domestic authors such as Ivanov et al. (2020) emphasize the importance of an individualized approach to treatment selection, based on the severity of inflammation and associated comorbidities [2].

Conclusion

Laparoscopic cholecystectomy is an effective treatment method for acute destructive cholecystitis, providing minimal tissue damage and quick patient recovery. However, in some cases, when anatomical difficulties or patient condition pose challenges, conversion to open surgery may be required. To improve the success of laparoscopic interventions, it is essential to consider the clinical presentation of the disease and the surgeon's experience.

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