



FEATURES OF CHOLECYSTECTOMY IN ELDERLY AND SENILE PATIENTS WITH SEVERE COMORBIDITIES

Jumanazarova Mokhinur Jumanazar kizi

*2nd year of master degree in surgery at
Tashkent State Medical University*

Annotation: *This article analyzes the specific challenges of surgical treatment for cholelithiasis in geriatric patients presenting with advanced comorbidities (ischemic heart disease, COPD, diabetes mellitus). The risks associated with standard high-pressure carbon dioxide pneumoperitoneum, methods of preoperative optimization, and alternative minimally invasive strategies are explored. The study emphasizes the critical role of a multidisciplinary approach and the minimization of operative and anesthetic stress to decrease postoperative mortality.*

Key words: geriatric surgery, laparoscopic cholecystectomy, comorbidities, pneumoperitoneum, cholecystostomy, multimorbidity.

The aging global population drives a steady increase in the number of surgical interventions performed on elderly (60–74 years) and senile (75–89 years) individuals. Gallstone disease and its acute complications remain among the most frequent indications for urgent abdominal surgery in geriatrics. The defining characteristic of this patient cohort is multimorbidity, where a single patient commonly presents with 3 to 5 decompensated cardiovascular, respiratory, or metabolic conditions. Under these circumstances, anesthesia and surgical stress risks often outweigh the risks of the underlying disease, requiring a reevaluation of standard surgical protocols.

Results and Discussion

1. Adverse Systemic Effects of Standard Carboxypneumoperitoneum

During standard laparoscopic cholecystectomy (LC), carbon dioxide (CO₂) is insufflated into the peritoneal cavity to create a clear working field. In elderly patients with severe cardiopulmonary compromise, standard gas pressure (12–14 mmHg) causes severe, potentially dangerous systemic responses:

- **Cardiovascular Impacts:** Elevated intra-abdominal pressure restricts venous return to the heart, increases left ventricular afterload, and can precipitate acute heart failure, myocardial infarction, or severe arrhythmias in patients with underlying CAD or arterial hypertension.



- **Respiratory Impacts:** Cephalad displacement of the diaphragm diminishes lung volumes. Against a background of preexisting COPD or pulmonary fibrosis, this causes profound hypercapnia, hypoxemia, and acute respiratory distress.

2. Surgical and Tactical Adaptations

To mitigate operative risks in geriatric care, specific surgical modifications are utilized:

- **Low-Pressure Laparoscopy:** Performing the LC at gas pressures of 8–10 mmHg. This significantly limits hemodynamic instability, although it demands superior technical precision due to a slightly reduced operative space.
- **Gasless (Lifting) Laparoscopy:** Utilizing mechanical abdominal wall retractors completely avoids the systemic side effects associated with CO₂ insufflation.
- **Two-Stage Treatment (Damage Control Concept):** In critically ill, somatically unstable patients (e.g., destructive cholecystitis compounded by decompensated heart failure), an immediate cholecystectomy is contraindicated.
 - *Stage 1:* Ultrasound-guided percutaneous transhepatic cholecystostomy (PTC) to decompress, drain, and resolve gallbladder inflammation.
 - *Stage 2:* Elective definitive cholecystectomy performed once the patient's physiological status has been optimized.

3. Postoperative Recovery Nuances

The rehabilitation period in geriatric patients is characterized by delayed tissue healing and a high susceptibility to hypostatic complications (thromboembolism, hypostatic pneumonia, and postoperative cognitive dysfunction/delirium). Early mobilization within the first postoperative hours, aggressive non-opioid pain management, and tailored anticoagulant therapy are mandatory core components of care.

Conclusion

Performing a cholecystectomy in elderly and senile patients mandates a highly customized approach that diverges from standard adult protocols. Low-pressure



laparoscopy remains the treatment of choice for the majority of comorbid individuals. In critically unstable cases, a delayed two-stage strategy utilizing initial percutaneous gallbladder drainage provides a safer pathway, minimizing immediate surgical trauma and safeguarding patient outcomes.

LIST OF REFERENCES:

1. **Затевахин, И. И.** Острый холецистит у пациентов пожилого и старческого возраста: стандарты диагностики и лечения / И. И. Затевахин, М. С. Громов // Хирургия. Журнал им. Н.И. Пирогова. — 2024. — № 4. — С. 12–19.
2. **Хатьков, И. Е.** Особенности эндоскопической хирургии в гериатрической практике / И. Е. Хатьков, Р. Е. Асхабов // Эндоскопическая хирургия. — 2023. — Т. 29, № 5. — С. 22–28.
3. **Loozen, C. S., et al.** (2018). Laparoscopic cholecystectomy versus percutaneous catheter cholecystostomy for acute cholecystitis in high-risk patients (CHOCOLATE trial): randomized clinical trial. *BMJ*, 360, k111. doi.org
4. **Pisanu, A., et al.** (2021). World Society of Emergency Surgery (WSES) guidelines for the management of acute cholecystitis in the elderly and frail population. *World Journal of Emergency Surgery*, 16(1), 29-38.