ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

LAPAROSCOPIC SURGERIES AND THEIR ADVANTAGES IN SURGERY

Rajabov Sherzod

Lecturer at the Faculty of Medicine, Karshi State University

Annotation: This article highlights the essence and technological foundations of laparoscopic surgeries, their advantages over open surgery, and their application in clinical practice. Laparoscopy is a surgical method that is safer, less painful, and involves a shorter rehabilitation period for patients, making it an integral part of modern surgical practice. The article analyzes the benefits of the laparoscopic approach based on statistical data, international clinical guidelines (EAES, SAGES), and practical experience.

Key words: laparoscopic surgery, minimally invasive surgery, open surgery, rehabilitation, CO_2 insufflation, postoperative complications, minimal invasiveness.

INTRODUCTION

Over the past 40 years, with the rapid development of medical technologies, a new era has also begun in surgical practice. Many procedures that were previously performed through open surgery (laparotomy) are now carried out laparoscopically, that is, through minimally invasive techniques. This approach offers significant advantages for both the patient and the surgeon.

Laparoscopic cholecystectomy, first performed in 1987 by French surgeon Philippe Mouret, marked the beginning of a new era in modern surgery. Today, this method is widely used not only in gallbladder surgery, but also in abdominal, thoracic, gynecological, urological, and even cardiac surgeries.

1. The Essence of Laparoscopic Surgeries

Laparoscopic surgeries are surgical procedures performed under visual control using a video camera and specialized micro-instruments inserted through small incisions (0.5–1 cm) in the abdominal or other body cavities.

Main Technical Components:

- **Video laparoscope** – a 10 mm optical device (with camera);
- **Trocars** – channels through which instruments are inserted;
- **Insufflator** – pumps CO_2 gas to expand the abdominal cavity;
- **Endoscopic instruments** – specially designed long and thin surgical tools;
- **HD monitor** – displays the surgical area in real time.

This technology enables the surgeon to clearly visualize internal structures, reduce blood loss, and minimize tissue damage.

2. Main Advantages Compared to Open Surgery

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

2.1. Minimal Trauma

Laparotomy involves a large incision, muscle separation, and significant blood loss. In contrast, laparoscopy requires only 3–4 small incisions. This results in:

- Less bleeding;
- Preservation of tissue integrity;
- Less pain;
- Reduced inflammation.

2.2. Faster Recovery and Shorter Hospital Stay

Patients usually recover within 1–2 days and return to work sooner.

Indicator	Laparoscopic	Open Surgery
Hospital stay	2–3 days	6–8 days
Return to work	7–10 days	20–30 days
Blood loss	<100 ml	250–500 ml

2.3. Lower Infection and Hernia Rates

- **Wound infections**: More common in open surgery (5–8%), but <1% in laparoscopic cases.
- **Postoperative hernias**: 10–15% in open surgery, 1–2% in laparoscopic.

2.4. Better Aesthetic Outcome

Incision scars are small and barely visible—this is especially important for women and children.

2.5. Better Visualization of Internal Organs

Video imaging is magnified 10–20 times. This allows for safer dissection, particularly in anatomically complex areas (e.g., Calot's triangle).

3. Types and Applications of Laparoscopic Surgeries

3.1. Abdominal surgeries:

- Cholecystectomy;
- Appendectomy;
- Bowel resections;
- Hysterectomy.

3.2. Oncological surgeries:

- Colorectal cancer;

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

- Ovarian and endometrial carcinoma;
- Prostate cancer.

3.3. Urological surgeries:

- Nephrectomy;
- Pyeloplasty.

3.4. Gynecological surgeries:

- Myomectomy;
- Tubal ligation;
- Treatment of endometriosis.

3.5. Bariatric (obesity) surgeries:

- Sleeve gastrectomy;
- Gastric bypass.

4. Disadvantages and Limitations

Despite its many benefits, laparoscopy has some limitations:

- Expensive equipment and instruments;
- Requires technical experience (surgeon's expertise is critical);
- Not always applicable in thoracic and cardiac surgeries;
- May require conversion in cases of complex peritonitis.

5. International Experience and Statistics

According to the **EAES (European Association for Endoscopic Surgery)**, as of 2022, **92% of cholecystectomies** are performed laparoscopically.

The **2023 report by SAGES (Society of American Gastrointestinal and Endoscopic Surgeons)** states that **postoperative complications are four times lower** in laparoscopic surgeries.

CONCLUSION

Laparoscopic surgeries represent one of the major achievements of modern surgery, serving to accelerate patient recovery, reduce the risk of complications, and improve quality of life. Today, this approach is widely used across various fields—from general surgery to oncology and urology—and is considered a modern and safe alternative to traditional open surgery.

References:

1. Strasberg SM. "Safe Cholecystectomy and Laparoscopy Standards", J Gastrointest Surg, 2020.

ISSN: 2692-5206
AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

2. EAES Guidelines, 2022.

3. SAGES Manual of Laparoscopic Surgery, 2023.

4. Sabiston Textbook of Surgery, 21st Edition.

5. Schwartz's Principles of Surgery, 11th Edition.

6. European Hernia Society Report, 2021.

7. Clinical Guidelines of WHO on Minimal Access Surgery, 2020.