



A COMPARATIVE ANALYSIS OF LAPAROSCOPIC HERNIA REPAIR AND OPEN LICHTENSTEIN'S HERNIA REPAIR

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ABSTRACT

This prospective comparative study explores the efficacy of laparoscopic hernia repair (Total Extraperitoneal Repair – TEP) versus open Lichtenstein's repair in 50 cases of unilateral inguinal hernias. Employing convenience sampling, patients were randomly assigned to undergo either technique after pre-operative preparation. Postoperative care meticulously monitored pain, bleeding, urinary retention, and wound complications. Utilizing statistical analyses, including descriptive statistics and chi-square tests, the study scrutinized outcomes based on specific parameters. Results indicated a marked reduction in postoperative pain, shorter hospital stays, and earlier return to work with TEP repair. However, TEP repair proved to be more expensive. The study's limitations include the subjective nature of pain assessment and the challenge of long-term follow-up. These findings contribute insights into the comparative advantages and limitations of laparoscopic and open hernia repair techniques, aiding clinicians in informed decision-making.

KEYWORDS : Hernia Repair, Lichtenstein's Repair TEP Repair.

INTRODUCTION

The landscape of hernia repair surgeries has evolved rapidly, marked by advancements in open approaches, prosthetic materials, and the emergence of laparoscopic techniques. A plethora of procedures, as documented in the literature and practiced globally, includes the widely performed open Lichtenstein's tension-free repair and laparoscopic total extraperitoneal repair.

Despite the diversity of approaches, a definitive consensus on the ideal procedure remains elusive. This study aims to contribute to the ongoing discourse by comparing the advantages of two prominent techniques – minimal access laparoscopic hernia surgery (Total Extraperitoneal Repair – TEP) and open Lichtenstein's repair. Key parameters for evaluation encompass the duration of operation (in minutes), postoperative pain (in days), length of hospital stay (in days), postoperative complications such as hematoma and seroma, time to return to usual activities, and a comprehensive cost analysis.

AIMS AND OBJECTIVES:

- To discern the comparative advantages between Total Extraperitoneal Repair (TEP) and open Lichtenstein's repair through the assessment of:
 - Duration of operation (in minutes)
 - Postoperative pain duration (in days)
 - Length of hospital stay (in days)
 - Incidence of postoperative complications, including hematoma and seroma
 - Time taken for patients to resume usual activities
 - Comprehensive cost comparison
- To determine the frequency of conversions, defined as procedures initiated as laparoscopic but subsequently converted to open surgery.

MATERIALS AND METHODS:

Source of Data: ESIC Medical College, Kalaburagi.

Study Design: Prospective & Comparative Study

Study Period: November 2021 to November 2022

Sample Size: N=50

Inclusion Criteria:

Adults (>15 years) consenting for randomized trials with

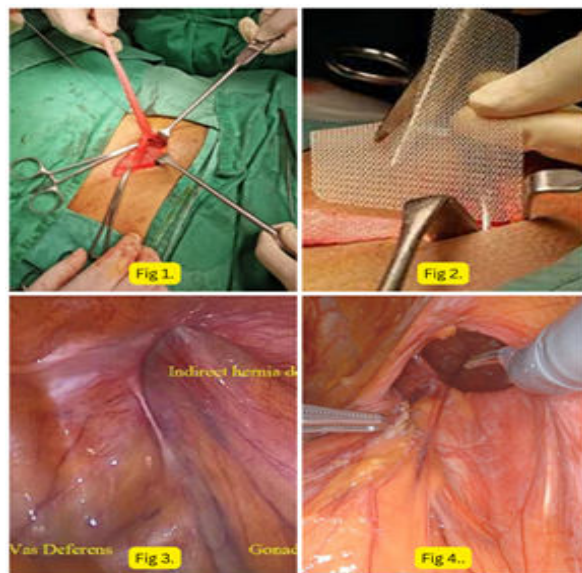
unilateral direct or indirect inguinal hernias.

Exclusion Criteria:

- Congenital hernias
- Recurrent hernias
- Bilateral inguinal hernias
- Obstructed hernias
- Large hernias
- Individuals with connective tissue disorders
- Patients with a history of lower abdominal surgery

METHODOLOGY:

- A total of 50 cases were selected using a convenience sampling method, encompassing both direct and indirect unilateral inguinal hernias. Following pre-operative preparation, patients were randomly assigned to undergo either open Lichtenstein's repair or laparoscopic (TEP) repair.



**Fig 1 and Fig 2: Open Lichtenstein's repair
Fig 3 and Fig 4: Total Extraperitoneal Repair**

Postoperative Care and Complications:

- After surgery, a vigilant postoperative care regimen was implemented, focusing on pain, bleeding, urinary retention, and wound infection. Pain assessment utilized

the Wong-Baker Facial Grimace Scale, starting 12 hours post-surgery, after the subsiding effects of spinal or general anaesthesia.

- Wound infection criteria included pus discharge, abnormal tenderness at the operative site, and constitutional symptoms such as fever. Additionally, seroma in the inguinal region was closely monitored.

Statistical Analysis:

- The results of both hernia repair types were analysed against specified outcome measures using descriptive statistics, crosstabs, chi-square, and independent sample t-test.

RESULTS:

1. Mean Age and Standard Deviation (comparing cases who underwent Lichtenstein's Repair and TEP repair)

	Lichtenstein's Repair	TEP Repair
Mean Age(years)	47.12	53.04
SD	13.0809	13.6182

2. Type of Hernia

Valid	Frequency	Percent
Direct Inguinal Hernia	27	54
Indirect Inguinal Hernia	23	46
Total	50	100

3. Duration of surgery in minutes

Type of Surgery	N	Mean(min)	SD
Lichtenstein's Repair	25	62.2	13.9254
TEP repair	25	72.4	10.3199
Total	50		

4. Duration of postoperative pain in days

Surgery	N	Mean Days	SD
Lichtenstein's Repair	25	2.8	1.4434
TEP repair	25	1.48	0.6532
Total	50		

5. Duration of postoperative hospital stay (in days)

Surgery	N	Mean Days	SD
Lichtenstein's Repair	25	5.12	2.242
TEP repair	25	2.6	0.866
Total	50		

6. Mesh rejection between study groups

Surgery	N	Mean Cost in Rupees	SD
Lichtenstein's Repair	25	3500	640.31
TEP repair	25	8068	1074.99
Total	50		

7. Complications

Surgery	Hematoma	Seroma	Total
Lichtenstein's Repair	-	-	-
TEP repair	-	2	2
Total	-	2	2

8. Time interval of returning to normal work (in days)

Surgery	N	Mean time interval in Days	SD
Lichtenstein's Repair	25	43.72	13.8
TEP repair	25	25.6	12.1
Total	50		

DISCUSSION:

Out of the two types of laparoscopic hernia repair followed most commonly, TAPP and TEP, we have exclusively performed TEP repairs in our patients. In TAPP the surgeon goes into the peritoneal cavity and places a mesh through a peritoneal incision over possible hernia sites. TEP is different as the peritoneal cavity is not entered and mesh is used to seal the hernia from outside the thin membrane covering the organs in the abdomen (the peritoneum).

CONCLUSION:

Our study yields the following conclusions:

- Reduced Postoperative Pain:** Laparoscopic hernia repair exhibits a significant reduction in postoperative pain compared to hernioplasty.
- Shorter Postoperative Stay:** TEP repair is associated with a shorter postoperative hospital stay compared to Lichtenstein's repair.
- Earlier Return to Work:** Patients undergoing TEP repair experience an earlier return to work compared to those undergoing Lichtenstein's repair.
- Higher Cost of Laparoscopic Repair:** Laparoscopic hernia repair proves to be more expensive compared to open hernioplasty.

Limitations:

- Subjectivity of Pain Assessment:** The Wong-Baker scale used for pain assessment is subjective and may not account for varying pain tolerances among different patients.
- Limited Long-Term Follow-Up:** Due to constraints, long-term follow-up of all patients was not feasible, limiting the scope of assessing sustained outcomes.

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