

Effectiveness of Laparoscopic Totally Extra-Peritoneal Repair versus Lichtenstein Repair in Patients of Inguinal Hernia: A Non-Randomized Comparative Study

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Abstract: ***Background:** Inguinal hernia repair is one of the most common surgical procedures. The Lichtenstein tension-free mesh repair (LMR) remains the gold standard but is associated with postoperative pain and delayed recovery. Laparoscopic totally extraperitoneal (TEP) repair offers a minimally invasive alternative with faster rehabilitation. This study compares outcomes of LMR and TEP in terms of operative time, pain, complications, hospital stay, and recurrence. **Methods:** A non-randomized comparative study was conducted on 70 patients (>18 years) with primary, uncomplicated inguinal hernia. Thirty-five patients each underwent LMR or TEP. Operative time, postoperative pain (VAS days 1 and 3), complications, hospital stay, and recurrence were analyzed using SPSS 23. **Results:** Mean age was 44.7 years in the LMR group and 51.4 years in the TEP group; all patients were male. Operative time was shorter in LMR (30–60 min) than TEP (>60 min). By day 3, pain persisted in 62.8% of LMR versus 45.7% of TEP cases. Early complications (seroma, hematoma) and chronic pain were more frequent in LMR, while no recurrences were reported. **Conclusion:** TEP offers reduced pain, fewer complications, and faster recovery than LMR, though it requires greater expertise and time. Technique selection should be individualized.*

Keywords: Inguinal hernia, Lichtenstein repair, Laparoscopic TEP repair, Totally extraperitoneal repair, Postoperative pain, Chronic neuralgia, Operative time, Surgical complications, Hospital stay, Recurrence, Comparative study, Minimally invasive surgery

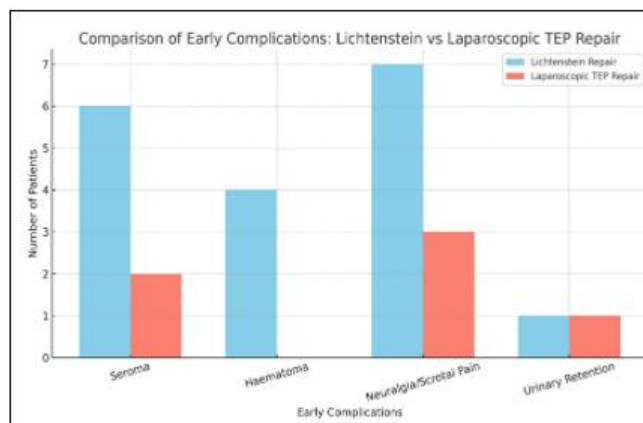
1. Introduction

Inguinal hernia repair is one of the most common surgical procedures globally, especially among men. The Lichtenstein tension-free mesh repair (LMR) revolutionized open hernia surgery with its low recurrence rate and simplicity but is often associated with postoperative pain and chronic neuralgia. Laparoscopic totally extra-peritoneal (TEP) repair offers a minimally invasive alternative with less postoperative pain and quicker recovery, though it demands greater surgical expertise and incurs higher costs. This study compares the two techniques regarding operative time, postoperative pain, complications, hospital stay, and recurrence.

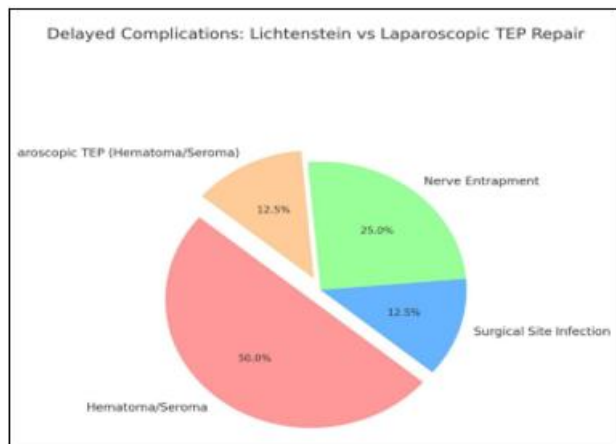
2. Materials and Methods

A non-randomized comparative study was conducted in the Department of General Surgery at a tertiary care hospital over two years. Seventy patients aged >18 years with uncomplicated inguinal hernia were enrolled. Patients were divided into two groups: Group A (Lichtenstein repair) and Group B (Laparoscopic TEP). Exclusion criteria included obstructed or strangulated hernias and those unwilling to participate. Data collected included operative time, postoperative pain (VAS on days 1 and 3), complications, hospital stay, and recurrence. Statistical analysis was performed using SPSS v23, with $p < 0.05$ considered significant.

3. Results



The mean age in the Lichtenstein group was 44.7 years versus 51.4 years in the TEP group. All patients were male. Unilateral hernias predominated, though bilateral cases were more often treated laparoscopically. Operative time was shorter for Lichtenstein (30–60 minutes) than for TEP (>60 minutes). Postoperative pain scores declined more rapidly after TEP; by day 3, 62.8% of Lichtenstein patients versus 45.7% of TEP patients reported pain. Complications such as seroma and hematoma were higher after Lichtenstein repair. Chronic pain occurred in 20% of Lichtenstein and 8.5% of TEP patients. Hospital stay was shorter for TEP (mean 1.7 days vs. 3.1 days). No recurrences were recorded during follow-up.



4. Discussion

Laparoscopic TEP repair demonstrates superior short-term outcomes compared to open Lichtenstein repair. Despite longer operative time, TEP offers reduced postoperative pain, fewer complications, and quicker recovery. These findings align with those of Varshney et al. (2024), Pereira et al. (2021), and Haladu et al. (2022), which also favor laparoscopic repair for better postoperative outcomes. Lichtenstein repair, though effective, carries higher risks of neuralgia and seroma formation. TEP's advantages make it ideal for bilateral or recurrent cases, while Lichtenstein remains practical in low-resource settings.

5. Conclusion

Laparoscopic TEP repair provides less postoperative pain, fewer complications, shorter hospital stays, and faster recovery compared to Lichtenstein repair. Although it requires longer operative time and greater technical skill, its benefits justify its wider adoption where feasible. Lichtenstein repair remains a dependable, cost-effective option, especially in resource-limited environments.

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