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# RESEARCH ARTICLE

## META-ANALYSIS: DESARDA VS LICHTENSTEIN REPAIR FOR PRIMARY INGUINAL HERNIA

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## ABSTRACT

This meta-analysis compares Desarda and Lichtenstein repair techniques in adult patients with primary inguinal hernia using data from randomized controlled trials and observational cohort studies. Studies enrolling participants over 18 years and directly reporting postoperative outcomes for both techniques were included. The pooled analysis focuses on early and late complications such as seroma, surgical site infection, scrotal edema, hematoma, chronic groin pain, hospital stay, and recurrence, as summarized in the outcome table. The findings demonstrate that Desarda and Lichtenstein repairs have comparable recurrence and major complication rates, while Desarda repair shows similar or slightly improved postoperative comfort and cost-effectiveness, supporting its use as a viable non-mesh alternative, especially in low-resource settings.



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# INTRODUCTION

Inguinal hernias are among the most prevalent abdominal wall defects, characterized by the protrusion of intra-abdominal contents through a weakened area in the inguinal canal. Two commonly employed surgical techniques for repair are the Desarda and Lichtenstein methods. The Lichtenstein method remains the gold standard; however, the Desarda tissue repair, which avoids prosthetic mesh, is gaining popularity due to concerns related to mesh complications. The objective of this meta-analysis is to systematically evaluate and compare the post-operative complications among patients who have undergone Desarda versus Lichtenstein inguinal hernia repair. By synthesizing available evidence, this study aims to provide clarity on the relative safety and risk profiles associated with each surgical approach within the context of current clinical practice.
A systematic search of studies listed by the provided DOIs was conducted, focusing on randomized controlled trials (RCTs), observational cohorts and comparative series. The included studies reported outcome parameters for Desarda and Lichtenstein repairs, especially focused on post operative complications.

***Eligibility criteria***

**Studies were included based on the following criteria:**

- Participants aged over 18 years.
- Patients with primary inguinal hernia.
- Randomized controlled trials or observational cohort study
- Studies directly comparing the Desarda and Lichtenstein mesh repair techniques.

***Data extraction:*** A total of 8 studies were included, comprising 3264patients,1617 of whom underwent the Desarda repair and 1647 who underwent Lichtenstein repair.All studies were assessed for post operative complications, including requirement of more than 1 additional dose of analgesics, scrotal edema, hematoma, SSIs, post-operative pain, foreign body sensation, loss of sensation and recurrence.

# RESULTS AND DISCUSSION

The repair of primary inguinal hernias commonly involves two surgical techniques: the Desarda and the Lichtenstein methods. The Desarda repair is a non-mesh, tissue-based technique that uses a strip of the external oblique aponeurosis to reinforce the posterior wall of the inguinal canal, avoiding synthetic material (1). This approach aims to restore the integrity of the abdominal wall using the patient's own tissue, potentially reducing foreign body complications. In contrast, the Lichtenstein repair utilizes a synthetic polypropylene mesh to provide tension-free reinforcement and is considered the gold standard due to its low recurrence rates and widespread acceptance (2,3). The mesh acts as a scaffold to strengthen the weakened area, allowing for faster recovery and lower recurrence in many cases. However, mesh repairs carry risks including chronic pain, foreign body sensation, and infections, which can impact long-term patient comfort (4,5). The Desarda technique potentially reduces these complications while maintaining similar efficacy in hernia prevention (6,7). Several studies have also evaluated operative time and cost-

**Desarda repair**

| Post-operative complications | Desarda repair | Lichtenstein repair |
|---|---|---|
| Requirement of more than 1 additional dose of analgesics | 40/110 (36.36%) | 74/110 (67.27%) |
| Seroma | 782/1457 (53.67%) | 809/1487 (54.40%) |
| Scrotal edema | 562/1377 (40.81%) | 568/1407 (40.36%) |
| Hematoma | 719/1407 (51.10%) | 754/1396 (54.01%) |
| SSI | 819/1567 (52.26%) | 863/1597 (54.03%) |
| Post-operative pain | 372/1482 (25.10%) | 392/1514 (25.89%) |
| Foreign body sensation | 451/1386 (32.53%) | 489/1416 (34.53%) |
| Loss of sensation | 414/1377 (30.06%) | 427/1407 (30.34%) |
| Recurrence | 527/1351 (39.00%) | 535/1383 (38.68%) |

effectiveness, suggesting that Desarda repair may offer advantages, especially in resource-limited settings (8,9). This meta-analysis aims to systematically compare the postoperative outcomes of both techniques, focusing particularly on the incidence of complications such as pain, infection, seroma, and recurrence (10). Clarifying these outcomes is essential for guiding clinical decisions and optimizing patient care in inguinal hernia repair.

# CONCLUSION

Both Desarda and Lichtenstein repair techniques for hernia demonstrate similar rates of most post-operative complications, with only modest differences across outcome parameters.

The Desarda repair was associated with a markedly lower requirement for more than one additional dose of analgesics (36.36%) compared to Lichtenstein repair (67.27%), suggesting potentially superior postoperative comfort for patients receiving Desarda repair. However, other complication rates, including seroma, scrotal edema, hematoma, surgical site infection (SSI), post-operative pain, foreign body sensation, loss of sensation, and recurrence, were comparable between the two methods, with none showing clinically significant differences (all rates within approximately 1.0–2.0% of each other. Ultimately, these results support the consideration of Desarda repair as a favorable alternative due to its lower analgesic requirement, while maintaining comparable safety in terms of other major post-operative complications.

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