

## A Comparative Study of Desarda's Technique of Inguinal Hernia Repair and Liechtenstein's Mesh Hernioplasty for Inguinal Hernia Repair

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### Abstract:

Using 100 patients over 24 months, this study compared the no-mesh approach used by Desarda with the mesh hernioplasty used by Liechtenstein for the repair of inguinal hernias at Darbhanga Medical College & Hospital. The comparison was prospective and randomized. Postoperative discomfort, recurrence rates, and other problems were the main subjects of our analysis. Comparing Desarda's technique to the mesh-based method, the results showed that there were fewer cases of persistent inguinal discomfort and much less postoperative pain by day 7. The mesh group had a slightly higher recurrence rate, but the distinction was not statistically significant. While both approaches worked well, Desarda's approach showed promise for improving patient comfort and healing, which made it a better choice—especially for those who might experience mesh-related problems. These results highlight the significance of a nuanced approach to hernia repair by indicating that surgical decisions should be based on the unique profiles of individual patients.

**Keywords:** Desarda's technique, Liechtenstein's Hernioplasty, Inguinal Hernia Repair, Postoperative Pain.

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### Introduction

One of the most common surgical operations done globally is inguinal hernia repair, and over time, many methods have been developed to enhance patient outcomes and lower the incidence of recurrence [1]. Desarda's procedure and Liechtenstein's mesh hernioplasty are two well-known ways among the many that are available; each has its supporters and unique techniques [2]. With a focus on clinical outcomes and surgical innovation, this comparative study intends to clarify the disparities between the mesh-based hernioplasty used in Liechtenstein and the no-mesh procedure used by Desarda in terms of effectiveness, security, and patient satisfaction [3].

Dr. Mohan P. Desarda developed a novel method called Desarda's methodology, which does not make use of synthetic mesh. Rather, it reinforces the inguinal canal's posterior wall using a strip of the external oblique aponeurosis [4]. This approach is well-liked for its ease of use, affordability, and lower risk of mesh-related complications, which makes it a good choice, especially for patients who are more likely to experience mesh-related problems or in environments with limited resources [5].

However, during the past few decades, Liechtenstein's mesh hernioplasty—created by Irving L. Lichtenstein—has emerged as the gold standard for hernia treatment. By covering the inguinal canal defect with a synthetic mesh, the area is successfully reinforced and the likelihood of recurrence is greatly decreased [6,7]. A substantial body of research demonstrating its longevity, efficacy, and comparatively low complication rates across a wide spectrum of patient demographics has led to its widespread use [8].

Through a thorough assessment of postoperative results, recurrence rates, complications, patient satisfaction, and total cost-effectiveness, this study aims to compare these two approaches. In doing so, it hopes to offer insightful information that may impact surgical technique and patient decision-making about the treatment of inguinal hernias. The results may direct future surgical choices and add to the continuing discussion about the best method for fixing inguinal hernias.

### Methodology

**Study Design:** A prospective, randomised comparative experiment at Darbhanga Medical College & Hospital included 100 patients with inguinal swelling or groin hernias. Desarda's

approach and Liechtenstein's mesh hernioplasty for inguinal hernia repair were compared over 24 months.

**Participants:** Patients eligible for inclusion were those diagnosed with reducible inguinal hernias. Exclusion criteria included patients presenting with irreducible, incarcerated, or strangulated hernias. A total of 100 patients were randomized into two groups:

- Group A: 50 patients undergoing Desarda's repair.
- Group B: 50 patients undergoing Liechtenstein's mesh hernioplasty.

**Randomization and Blinding:** Patients were randomly assigned to Group A or Group B using a computer-generated random numbers table. The surgical methods prevented surgeon blinding, but postoperative assessors were blinded to group allocation to reduce bias.

**Surgical Procedure:** A team of skilled surgeons performed all surgeries under similar anaesthesia techniques. Each group utilised these methods: A strip of the external oblique aponeurosis reinforced the posterior wall of the inguinal canal without synthetic mesh in Group A (Desarda's Technique).

Group B (Liechtenstein's Mesh Hernioplasty): A synthetic mesh covered the hernia defect and reinforced the inguinal canal.

#### Outcome Measures

The main objectives were postoperative pain (VAS on days 1, 3, and 7), recurrence rates, and complications like wound infection, seroma or hematoma formation, chronic inguinal discomfort, and testicular atrophy. The outcomes were assessed 1 month, 3 months, and 1 year after surgery.

#### Data Collection

Demographics, hernia type, intraoperative findings, and postoperative results were gathered on standardized forms. Following up at regular intervals and monitored for late problems or recurrence.

#### Statistical Analysis

Statistics were done with SPSS. Demographic and clinical data were summarised using descriptive statistics. The Chi-square test for categorical variables and Student's t-test for continuous variables compared the two groups. A p-value under 0.05 was significant.

#### Ethical Considerations

The Darbhanga Medical College & Hospital IRB accepted the study protocol. All subjects gave informed consent before the trial.

#### Results

A total of 100 patients were enrolled in the trial, split equally between Group B (Liechtenstein's mesh hernioplasty) and Group A (Desarda's repair). In Group A, the average age was 45 years, whereas in Group B, it was 47 years. In both groups, the bulk of patients (Group A: 96%, Group B: 98%) were male. Between the groups, there were similarities in the distribution of comorbidities and other demographic traits as body mass index (BMI) and smoking habits.

**Intraoperative Findings:** The duration of surgery was slightly longer in Group A, averaging 30 minutes, compared to 28.7 minutes in Group B. The types of hernias treated (right inguinal, left inguinal, indirect, direct, and pantaloon) were similarly distributed between the two groups. No intraoperative complications were reported in either group.

**Postoperative Outcomes:** On day 1, the Visual Analogue Scale (VAS) demonstrated no significant difference in postoperative discomfort (Group A: 3, Group B: 3.56). Day 7 pain scores were lower for Group A (1.3) than Group B (2). Inguinal hematoma/seroma was somewhat more common in Group B (8 instances) than Group A (6 cases). One patient in Group A and two in Group B had wound infections.

**Hospital Stay and Recovery:** Group A averaged 3 days and Group B 3.5 days. Group A patients returned to normal physical activity sooner (12.3 days) than Group B (14.26 days). **Chronic inguinal pain and recurrence:** Group A (1 case) had less chronic inguinal discomfort after 1 month than Group B (4 cases). Group A had no recurrences during the 1-year follow-up, while Group B had one (2%).

#### Statistical Analysis

Significant variations in pain assessments were observed from day 3 onward ( $p < 0.05$ ). However, complications and recovery times did not achieve statistical significance ( $p > 0.05$ ), demonstrating that while Desarda's repair improved pain outcomes, both procedures were equally effective in other areas.

Table 1: Demographic and Clinical Characteristics of Participants

Characteristic	Group A (Desarda's Repair)	Group B (Lichtenstein's Mesh)
Number of Patients	50	50
Average Age (years)	45	47
Gender (Male/Female)	48/2	49/1
Comorbidities:		
Hypertension	11	10
Diabetes Mellitus	2	3
COPD	3	2
Smoking	5	6
Chronic Renal Failure	1	0
Alcohol Consumption	6	5
BMI >30 kg/m <sup>2</sup>	5	6

Table 2: Perioperative Findings

Type of Hernia	Group A (Desarda's Repair)	Group B (Lichtenstein's Mesh)
Right Inguinal Hernia	31	29
Left Inguinal Hernia	19	21
Indirect Inguinal Hernia	24	31
Direct Inguinal Hernia	-	-
Pantaloon's Hernia	1	1
Duration of Surgery (min)	30	28.7

Table 3: Postoperative Outcomes

Outcome	Group A (Desarda's Repair)	Group B (Lichtenstein's Mesh)
Pain by VAS (Day 1)	3	3.56
Pain by VAS (Day 3)	2.8	3.2
Pain by VAS (Day 7)	1.3	2
Inguinal Hematoma/Seroma	6	8
Wound Infection	1	2
Hospital Stay (days)	3	3.5
Return to Physical Activity (days)	12.3	14.26
Chronic Inguinal Pain (>1 month)	1	4
Recurrence at 1 Year	0	1

## Discussion

This study assessed the efficacy and safety of Desarda's no-mesh approach compared to Lichtenstein's mesh hernioplasty for treating inguinal hernias. The results of our study indicate that Desarda's repair is linked to considerably lower pain levels by day 7 after surgery and a decreased occurrence of persistent inguinal discomfort when compared to Lichtenstein's mesh repair [9]. These

results are consistent with the inherent benefits of not using mesh, including decreased foreign body reaction and perhaps decreased chronic pain, as previously demonstrated in Desarda's study (2003) [10,11].

Furthermore, the lack of mesh use in Desarda's approach may partly explain the slightly faster resumption of regular physical activities noticed in our study. This discovery aligns with earlier results

indicating a quicker recovery as a result of the less intrusive nature of non-mesh repairs (Amid et al., 1996) [12]. Nevertheless, it is crucial to acknowledge that the frequency of recurrence in the mesh repair group was somewhat greater, although it did not show a significant statistical difference. This discovery contradicts previous comprehensive meta-analyses that have shown decreased risks of recurrence with mesh repairs (Simons et al., 2009) [13].

Extensive studies have conducted a comparative analysis of mesh and non-mesh approaches. McCormack et al. (2003) [14] conducted a meta-analysis that revealed that mesh repairs generally have a reduced risk of hernia recurrence in comparison to non-mesh repairs. In contrast, a comprehensive study conducted by Sajid et al. (2009) [15] found that non-mesh repairs are linked to shorter durations of surgery and decreased incidence of chronic pain. The conflicting results highlight the ongoing discussion among surgeons about finding the right balance between the risk of recurrence and the quality of life after surgery [16]. Our study contributes to this ongoing discussion by showing that Desarda's method can achieve similar surgical results while potentially providing improved postoperative comfort and less chronic pain [17]. Nevertheless, the limited sample size and period of follow-up may restrict the applicability of our findings. Conducting larger trials involving multiple centers could yield more conclusive findings [18].

The selection of the hernia repair approach should be customized based on the specific patient's risk profile, the surgeon's proficiency, and the resources that are accessible. Desarda's approach provides a feasible alternative for patients who have a higher risk of problems from mesh, such as those who have had past mesh infections or who have a weakened immune system [19]. Our study indicates that non-mesh repairs can achieve equivalent outcomes to mesh repairs, especially in terms of minimizing postoperative pain and recovery time, as long as the surgeon has sufficient surgical expertise.

Additional investigation should prioritise doing extended follow-up studies to more accurately evaluate the rates of recurrence and persistent pain linked to both methods. In addition, researching patient-centered outcomes, such as post-repair quality of life and cost-effectiveness, could provide valuable information for making better-informed therapeutic decisions [20].

### Conclusion

At Darbhanga Medical College & Hospital, Desarda's no-mesh technique and Lichtenstein's mesh hernioplasty for inguinal hernia repair were compared to determine their efficacy and safety.

Both methods are effective, but Desarda's repair reduces postoperative discomfort and chronic inguinal pain, which may improve patient recovery and comfort. The mesh repair group had a slightly higher recurrence rate, but the variance was not statistically significant, suggesting that non-mesh repairs may be an option for some patients. These findings emphasize the necessity of individualized patient care and the need for surgeons to weigh the pros and downsides of each hernia repair procedure. More study with larger samples and longer follow-ups is needed to verify these findings and improve surgical techniques.

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