

Desarda versus Lichtenstein Methods of Hernioplasty: A Comparative Study in a Tertiary Care Hospital**P. Mathusoothanan¹, V. Bharathi², Sambath S.³**¹Associate Professor, Department of General Surgery, Government Medical College, Thiruvallur.²Assistant Professor, Department of General Surgery, Government Medical College, Thiruvallur.³Assistant Professor, Department of General Surgery, Govt. Thiruvallur Medical College, Thiruvallur.

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Abstract:**Background:** Mesh-based Lichtenstein repair is the benchmark for open inguinal hernioplasty, yet mesh costs, chronic groin pain and foreign-body sensations remain problematic. The Desarda repair, which reinforces the posterior wall with an undetached strip of external-oblique aponeurosis, offers a physiologic, no-mesh alternative, but comparative evidence from tertiary centres is limited.**Objective:** To evaluate clinical efficacy, recovery profile, complication rates and cost of Desarda versus Lichtenstein repair for primary inguinal hernia.**Methods:** In a prospective, randomized controlled trial (July 2023 – July 2024) at Government Medical College & Hospital, Thiruvallur, 120 adults (18–70 years) with primary, uncomplicated inguinal hernia were allocated 1:1 to Desarda (n = 60) or Lichtenstein (n = 60). Primary outcomes were recurrence at 6 and 12 months, postoperative complications, and pain scores (Visual Analog Scale, VAS). Secondary measures included operative time, length of stay, time to ambulation, return to activities/work and total hospital cost. Analyses used intention-to-treat principles; p < 0.05 was significant.**Results:** Recurrence at 12 months was identical (1.7% each). Desarda yielded lower mean VAS pain at 1 week (2.1 ± 1.2 vs 2.8 ± 1.4) and 1 month (0.8 ± 0.9 vs 1.4 ± 1.1), and fewer cases of chronic groin pain (1.7% vs 6.7%), numbness/altered sensation (1.7% vs 13.3%) and foreign-body sensation (0% vs 10%). Operative time was shorter (48.5 ± 8.2 min vs 52.8 ± 9.6 min). Patients in the Desarda group mobilised earlier, left hospital sooner (1.8 ± 0.6 days vs 2.2 ± 0.8 days), and returned faster to daily activities (8.5 ± 2.2 days vs 11.2 ± 3.1 days) and work (12.8 ± 3.5 days vs 16.4 ± 4.2 days). Mean total hospital cost was ₹12,500 ± 1,800 for Desarda versus ₹16,200 ± 2,200 for Lichtenstein, a saving of about ₹3,700 driven by mesh elimination.**Conclusions:** Desarda repair matches Lichtenstein's durability while providing superior postoperative comfort, faster functional recovery and meaningful cost savings without mesh-related complications. It should be considered a first-line option for primary inguinal hernia repair, particularly in young or cost-sensitive patients and resource-limited settings. Multicentre studies with longer follow-up are warranted to confirm long-term equivalence.**Keywords:** Inguinal Hernia, Desarda Repair, Lichtenstein Repair, Randomized Controlled Trial, Postoperative Pain, Cost-Effectiveness, Mesh-Free Hernioplasty.

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Introduction

Inguinal hernia is one of the most common surgical conditions encountered in clinical practice, affecting approximately 27-43% of men and 3-6% of women during their lifetime [1]. The repair of inguinal hernia has evolved considerably over the past century, with the primary goal being to achieve a tension-free, durable repair with minimal complications and low recurrence rates. [1][2]

Historically, hernia repair involved tissue-based techniques such as the Bassini and Shouldice methods. However, these approaches were associated with higher recurrence rates due to the use of weakened tissues under tension for repair [2]. The introduction of prosthetic mesh in the 1990s revolutionized hernia surgery, leading to the widespread adoption of tension-free repairs. [1][2]

The Lichtenstein technique, introduced in 1984 by Dr. Irving Lichtenstein, represents the gold standard for open inguinal hernia repair.[1][2] This technique involves placing a polypropylene mesh between the floor of the inguinal canal and the aponeurosis of the external oblique muscle, effectively utilizing intra-abdominal pressure for repair while eliminating tension on suture lines [1].

The Lichtenstein repair has demonstrated excellent outcomes with recurrence rates of less than 1% [1][3]. However, mesh-based repairs are not without complications. Chronic groin pain, mesh-related infections, foreign body sensation, and potential complications such as mesh erosion or migration have been reported [4][5][6][8]. These concerns, combined with the cost of synthetic materials, have renewed interest in tissue-based repair techniques [4][5]. In 2001, Dr. M.P. Desarda introduced a novel tissue-based technique for inguinal hernia repair [4][5]. The Desarda technique utilizes an undetached strip of external oblique aponeurosis to create a dynamic, physiologically active posterior wall reinforcement [8][9][10]. This method is based on the principle that the aging process is minimal in tendons and aponeurosis, making them suitable alternatives to synthetic materials [4]. The technique creates a tension-free repair without the use of foreign materials, potentially avoiding mesh-related complications while maintaining low recurrence rates. [4][8][9][10] Despite growing interest in the Desarda technique, there remains limited comparative data between this tissue-based approach and the established Lichtenstein mesh repair, particularly in tertiary care settings. Understanding the relative merits of these two techniques is crucial for surgical decision-making and optimal patient outcomes.

Aim and Objectives

Primary Aim: To compare the surgical outcomes of Desarda technique versus Lichtenstein mesh repair for primary inguinal hernia in patients treated at a tertiary care hospital.

Primary Objectives

1. To compare the recurrence rates between Desarda and Lichtenstein techniques at 6-month and 12-month follow-up
2. To evaluate and compare postoperative complications including surgical site infection, seroma formation, hematoma, and chronic groin pain between both groups
3. To assess and compare postoperative pain scores using Visual Analog Scale (VAS) at 24 hours, 1 week, and 1 month postoperatively

Secondary Objectives

1. To compare operative time between Desarda and Lichtenstein repair techniques
2. To evaluate hospital length of stay in both groups
3. To compare time to return to normal daily activities and work
4. To assess patient satisfaction and quality of life outcomes at 3-month follow-up
5. To analyze cost-effectiveness between both techniques
6. To identify patient factors that may influence outcomes in each technique

Materials and Methods

This prospective, randomized controlled study was conducted to compare the outcomes of Desarda technique versus Lichtenstein mesh repair for primary inguinal hernia in a tertiary care hospital setting. The study was conducted at Government Medical College and Hospital, Thiruvallur, Department of General Surgery, over a period of 18 months from July 2023 to July 2024. Adult patients (18-70 years) presenting with primary uncomplicated inguinal hernia requiring elective surgical repair were included in the study.

Sample Size Calculation: Based on previous studies comparing Desarda and Lichtenstein techniques, with expected recurrence rates of 2% and 5% respectively, the sample size was calculated using the formula for comparing two proportions:

$$n = \frac{[Z_{\alpha/2}\sqrt{2\bar{p}(1-\bar{p})} + Z_{\beta}\sqrt{p_1(1-p_1) + p_2(1-p_2)}]^2}{(p_1 - p_2)^2}$$

Where $p_1 = 0.02$, $p_2 = 0.05$, $\bar{p} = (p_1 + p_2)/2$, $Z_{\alpha/2} = 1.96$ (for 5% significance), and $Z_{\beta} = 0.842$ (for 80% power).

Calculations yielded a required sample size of approximately 47-50 patients per group. To accommodate an estimated 20% dropout rate, the final sample size was increased to 60 patients per group, totaling 120 patients for the study

Inclusion Criteria

1. Adult patients aged 18-70 years
2. Primary unilateral or bilateral inguinal hernia
3. Patients fit for general or regional anesthesia (ASA Grade I-III)
4. Written informed consent for participation
5. Ability to attend regular follow-up visits

Exclusion Criteria

1. Recurrent inguinal hernia
2. Complicated hernias (irreducible, obstructed, or strangulated)
3. Previous lower abdominal surgery

4. Patients with bleeding disorders or on anticoagulant therapy
5. Immunocompromised patients
6. Patients with severe systemic diseases (ASA Grade IV-V)
7. Pregnant women
8. Patients unable to provide informed consent
9. Emergency hernia repairs

Randomization and Allocation: Patients were randomly allocated to either Desarda repair (Group A) or Lichtenstein repair (Group B) using computer-generated random numbers in sealed envelopes. Randomization was performed by an independent researcher not involved in patient care to ensure allocation concealment.

Surgical Techniques

Desarda Technique (Group A): All procedures were performed under spinal or general anesthesia. A 6-8 cm incision was made parallel to the inguinal ligament. After opening the external oblique aponeurosis and identifying the inguinal canal contents, the hernia sac was dissected and reduced. A 2 cm wide undetached strip of external oblique aponeurosis was created, keeping it attached medially and laterally. The strip was sutured to the conjoint tendon above and the inguinal ligament below using continuous absorbable sutures (PDS 2/0), creating a new dynamic posterior wall. [8][9]

Lichtenstein Technique (Group B): Following similar exposure, a 6x11 cm polypropylene mesh was positioned to cover the entire myopectineal orifice. The mesh was secured with non-absorbable sutures (prolene 2/0) to the inguinal ligament below, conjoint tendon above, and laterally beyond the anterior superior iliac spine. A slit was created in the mesh to accommodate the spermatic cord. [1][2][11]

Outcome Measures

Primary Outcomes

1. **Recurrence Rate:** Clinical and/or radiological evidence of hernia recurrence at 6 and 12 months

2. **Postoperative Complications:** Including surgical site infection, seroma, hematoma, chronic pain (>3 months)
3. **Pain Assessment:** VAS scores (0-10) at 24 hours, 1 week, and 1 month postoperatively

Secondary Outcomes

1. **Operative Time:** From skin incision to skin closure
2. **Hospital Stay:** Duration from admission to discharge
3. **Return to Activities:** Time to resume normal daily activities and work
4. **Patient Satisfaction:** Using standardized questionnaire at 3 months
5. **Cost Analysis:** Total treatment cost including materials and hospital charges

Data Collection: Standardized case record forms were used to collect demographic data, clinical findings, operative details, and follow-up information. Patients were followed up at 1 week, 1 month, 3 months, 6 months, and 12 months postoperatively.

Statistical Analysis: Data analysis was performed using SPSS version 30.0. Continuous variables were expressed as mean ± standard deviation and compared using Student's t-test. Categorical variables were presented as frequencies and percentages and compared using Chi-square test or Fisher's exact test as appropriate. P-value <0.05 was considered statistically significant. Kaplan-Meier survival analysis was used for recurrence-free survival comparison.

Ethical Considerations: The study protocol was approved by the Institutional Ethics Committee (No.128/IEC/2022). Written informed consent was obtained from all participants. The study was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines.

Results

Demographic Characteristics: A total of 120 patients were enrolled in the study, with 60 patients in each group. The demographic characteristics were well-matched between both groups (Table 1).

Table 1. Demographic Characteristics of Study Participants

Parameter	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
Age (years), mean ± SD	44.2 ± 12.8	46.1 ± 14.2	0.412
Gender (Male/Female)	54/6	52/8	0.564
BMI (kg/m ²), mean ± SD	24.8 ± 3.2	25.2 ± 3.6	0.523
ASA Grade I/II/III	32/24/4	30/26/4	0.789
Right/Left hernia	38/22	36/24	0.684
Direct/Indirect hernia	22/38	24/36	0.678

Table 1 presents the demographic characteristics of patients in both the Desarda and Lichtenstein groups. The data indicate that the groups were well

matched with no significant differences in age, gender distribution, body mass index (BMI), American Society of Anesthesiologists (ASA)

physical status classification, side of hernia, or hernia type (direct vs indirect). Values are expressed as mean \pm standard deviation or number (percentage) where appropriate. A p-value of less than 0.05 was considered statistically significant, but no variables showed significant differences,

which supports the comparability of the two groups at baseline.

Operative Outcomes: The operative parameters showed significant differences between the two groups (Table 2).

Table 2. Operative Outcomes Comparing Desarda and Lichtenstein Techniques

Parameter	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
Operative time (minutes), mean \pm SD	48.5 \pm 8.2	52.8 \pm 9.6	0.007*
Intraoperative complications	1 (1.7%)	2 (3.3%)	0.558
Conversion to other technique	0 (0%)	0 (0%)	-

Table 2 summarizes the operative outcomes between the two groups. The Desarda technique was associated with a significantly shorter operative time compared to the Lichtenstein repair.

Intraoperative complications were minimal and did not differ significantly between groups. Operative time is given as mean \pm standard deviation, and complications are reported as numbers and percentages. Statistical significance was set at $p <$

0.05, with significant differences marked accordingly.

The Desarda technique demonstrated significantly shorter operative time compared to the Lichtenstein repair ($p=0.007$) [4][12][13]

Postoperative Pain Assessment: Pain scores using Visual Analog Scale showed interesting patterns (Table 3).

Table 3: Postoperative Pain Assessment Using Visual Analog Scale (VAS)

Time Point	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
24 hours, mean \pm SD	4.2 \pm 1.8	3.8 \pm 1.6	0.189
1 week, mean \pm SD	2.1 \pm 1.2	2.8 \pm 1.4	0.003*
1 month, mean \pm SD	0.8 \pm 0.9	1.4 \pm 1.1 [†]	0.001*
Chronic pain (>3 months)	1 (1.7%)	4 (6.7%)	0.170

Table 3 reports postoperative pain assessed by the Visual Analog Scale (VAS) at 24 hours, 1 week, and 1 month post-surgery. Initial pain scores at 24 hours were comparable between groups; however, at 1 week and 1 month, the Desarda group experienced significantly lower pain scores. Incidence of chronic pain beyond three months was also lower in the Desarda group, though not statistically significant. Pain scores are presented as mean \pm standard deviation and chronic pain as

number (percentage). A p -value $<$ 0.05 was considered significant, with significant results denoted by an asterisk. Initially, pain scores were comparable at 24 hours, but the Desarda group showed significantly lower pain scores at 1 week and 1 month follow-up. [4][13]

Postoperative Complications

The complication profile differed between the two groups (Table 4).

Table 4: Postoperative Complications Observed in Desarda and Lichtenstein Groups

Complication	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
Surgical site infection (n,%)	2 (3.3%)	3 (5.0%)	0.647
Seroma formation (n,%)	3 (5.0%)	8 (13.3%)	0.107
Hematoma (n,%)	1 (1.7%)	4 (6.7%)	0.170
Scrotal swelling (n,%)	2 (3.3%)	5 (8.3%)	0.239
Numbness/altered sensation (n,%)	1 (1.7%)	8 (13.3%)	0.015*
Foreign body sensation (n,%)	0 (0%)	6 (10.0%)	0.012*

Table 4 describes the postoperative complications observed in both groups. The Lichtenstein group showed higher rates of numbness, altered sensation, and foreign body sensation compared to the Desarda group. Other complications such as surgical site infections, seroma, hematoma, and scrotal swelling were reported with no statistically significant differences. All complications are

expressed as number (percentage), with significance determined by $p <$ 0.05. Significant differences are indicated by an asterisk. The Lichtenstein group had significantly higher rates of numbness/altered sensation and foreign body sensation [4].

Hospital Stay and Recovery: Recovery parameters favored the Desarda technique (Table 5).

Table 5: Recovery Parameters after Hernia Repair

Parameter	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
Hospital stay (days), mean \pm SD	1.8 \pm 0.6	2.2 \pm 0.8	0.002*
Time to ambulation (hours), mean \pm SD	6.2 \pm 2.1	8.1 \pm 2.8	0.005*
Return to daily activities (days), mean \pm SD	8.5 \pm 2.2	11.2 \pm 3.1	0.003*
Return to work (days), mean \pm SD	12.8 \pm 3.5	16.4 \pm 4.2	0.021*

Table 5 details the recovery parameters including hospital stay duration, time to ambulation, return to daily activities, and return to work.

Patients in the Desarda group demonstrated faster recovery across all these metrics, with statistically significant differences compared to the Lichtenstein group. Values are expressed as mean \pm

standard deviation. A significance level of $p < 0.05$ was applied to determine statistical differences. All recovery parameters showed statistically significant advantages for the Desarda technique [4][12][13]

Recurrence Rates: At 12-month follow-up, recurrence rates were comparable between both groups.

Follow-up Period	Desarda Group (n=60)	Lichtenstein Group (n=60)	P-value
6 months (n,%)	0 (0%)	1 (1.7%)	0.315
12 months (n,%)	1 (1.7%)	1 (1.7%)	1.000

No significant difference in recurrence rates was observed between the two techniques. [4][5]

Cost Analysis: The economic evaluation showed significant cost differences (Table 6).

Table 6: Economic Analysis of Hernia Repair Techniques

Cost Component	Desarda Group (₹)	Lichtenstein Group (₹)	P-value
Surgical materials	2,800 \pm 200	4,500 \pm 300	0.004*
Total hospital cost	12,500 \pm 1,800	16,200 \pm 2,200	0.023*

Table 6 presents the cost analysis comparing the two techniques in Indian Rupees (INR). The Desarda technique incurred significantly lower surgical material and total hospital costs due to the absence of mesh-related expenses. Costs are reported as mean \pm standard deviation. Differences reaching a p-value less than 0.05 were considered statistically significant and highlighted accordingly. The Desarda technique demonstrated significant cost savings primarily due to the absence of mesh costs [12][13].

Patient Satisfaction

At 3-month follow-up, patient satisfaction scores (scale 1-10) were:

- Desarda Group: 8.6 \pm 1.2
- Lichtenstein Group: 8.2 \pm 1.4 (p = 0.087)

Both techniques showed high patient satisfaction with no statistically significant difference.

Discussion

This prospective randomized controlled study comparing Desarda and Lichtenstein techniques for inguinal hernia repair provides valuable insights

into the relative merits of tissue-based versus mesh-based approaches in a tertiary care setting.

Operative Efficiency: The Desarda technique demonstrated superior operative efficiency with significantly shorter operative time (48.5 vs 52.8 minutes, $p=0.007$). This finding is consistent with several previous studies [4][12][13]. The reduced operative time can be attributed to the simplicity of the Desarda technique, which eliminates the need for precise mesh positioning and multiple fixation points required in Lichtenstein repair [8][9]. The shorter operative time translates to reduced anesthesia exposure, lower operative costs, and improved operating room efficiency.

Pain and Comfort: One of the most significant findings was the pain profile difference between the two techniques. While immediate postoperative pain was comparable, the Desarda group experienced significantly less pain at 1 week (2.1 vs 2.8, $p=0.003$) and 1 month (0.8 vs 1.4, $p=0.001$) follow-up^{[4][13]}. This finding aligns with the physiological principle underlying the Desarda technique, which creates a dynamic repair that moves with muscle contractions rather than a static

mesh that may cause tissue irritation [8][10]. The reduced incidence of chronic pain in the Desarda group (1.7% vs 6.7%) is particularly noteworthy, as chronic groin pain is a significant cause of patient dissatisfaction and reduced quality of life after hernia repair [7][14]. The absence of foreign material in the Desarda technique eliminates the risk of mesh-related chronic pain, which can result from nerve entrapment, mesh shrinkage, or inflammatory responses [6][7].

Complications Profile: The complication analysis revealed important differences between the techniques. The Lichtenstein group had significantly higher rates of numbness/altered sensation (13.3% vs 1.7%, $p=0.015$) and foreign body sensation (10.0% vs 0%, $p=0.012$) [4]. These complications are inherent to mesh-based repairs and result from the inflammatory response to foreign material and potential nerve involvement during mesh fixation [1][6].

The trend toward higher seroma formation in the Lichtenstein group (13.3% vs 5.0%) may be related to the inflammatory reaction around the mesh, although this difference did not reach statistical significance [4]. These findings support the growing concern about mesh-related complications and the potential advantages of tissue-based repairs in selected patients [15][16].

Recovery and Functional Outcomes: The Desarda technique demonstrated superior recovery parameters across all measured endpoints. Patients in the Desarda group had shorter hospital stays (1.8 vs 2.2 days, $p < 0.05$), faster ambulation (6.2 vs 8.1 hours, $p < 0.05$), and quicker return to daily activities (8.5 vs 11.2 days, $p < 0.05$) and work (12.8 vs 16.4 days, $p < 0.05$) [4][12][13].

These findings have significant implications for patient quality of life and healthcare economics. Faster recovery translates to reduced healthcare utilization, lower indirect costs from work absence, and improved patient satisfaction [4][12]. The dynamic nature of the Desarda repair, which moves physiologically with muscle contractions, may contribute to this enhanced functional recovery [8][10].

Recurrence Rates: The 12-month recurrence rates were comparable between both groups (1.7% each), confirming that the Desarda technique provides durability equivalent to mesh repair [4][5]. This finding is crucial as it demonstrates that avoiding mesh does not compromise the fundamental goal of hernia repair – preventing recurrence. The low recurrence rates in both groups reflect proper patient selection, adequate surgical technique, and comprehensive follow-up. [4][5]

Longer-term follow-up studies have shown that Desarda repair maintains its efficacy over time,

with some series reporting recurrence rates comparable to mesh repairs at 5-year follow-up. [10][17] This durability supports the physiological basis of the technique, utilizing the strength and longevity of aponeurotic tissue.

Economic Considerations

The cost analysis revealed significant economic advantages for the Desarda technique. The total cost difference of ₹3,700 per case primarily stems from mesh cost savings. In resource-limited settings, this cost difference can be substantial and may influence treatment accessibility [12][13]. When scaled to the volume of hernia repairs performed annually, the cost savings can be considerable without compromising clinical outcomes.

The economic advantage extends beyond material costs to include shorter operative times, reduced hospital stays, and faster return to productivity. From a healthcare system perspective, these factors contribute to improved resource utilization and cost-effectiveness [12][13].

Patient Selection and Technique Considerations

The results suggest that the Desarda technique may be particularly suitable for:

1. Young and middle-aged patients who prioritize minimal foreign material implantation
2. Patients in resource-limited settings where mesh availability or cost is a concern
3. Cases where mesh-related complications are a significant concern
4. Patients requiring bilateral repairs where cost considerations are magnified

However, the Lichtenstein technique remains appropriate for:

1. Large or complex defects where tissue-based repair may be inadequate
2. Elderly patients where operative time minimization is crucial
3. Surgeons with extensive mesh repair experience
4. Cases where the risk of recurrence outweighs mesh-related complications

Limitations and Future Directions: This study has several limitations that should be acknowledged. The 12-month follow-up period, while adequate for detecting early recurrences and complications, may not capture long-term outcomes. Longer follow-up studies are needed to establish the durability of both techniques over 5-10 years. The single-center design, while ensuring standardized techniques and protocols, may limit generalizability to other settings. Multi-center trials would provide broader validation of these findings across different patient populations and surgical

expertise levels. The study focused on primary inguinal hernias and excluded complex cases. Future research should evaluate the comparative effectiveness of these techniques in recurrent hernias, large defects, and complicated presentations. Quality of life assessment using validated instruments such as the Short Form-36 (SF-36) or Carolinas Comfort Scale would provide more comprehensive functional outcome evaluation. Long-term studies incorporating these measures would enhance understanding of patient-reported outcomes.

Clinical Implications

The findings of this study have several important clinical implications:

1. **Surgical Decision Making:** The comparable recurrence rates between techniques provide surgeons and patients with genuine choice based on individual preferences, risk profiles, and economic considerations.
2. **Patient Counseling:** Patients should be informed about the different complication profiles, with mesh repairs carrying risks of chronic pain and foreign body sensation, while tissue repairs may have marginally longer learning curves.
3. **Training Programs:** Surgical training programs should include both techniques to provide comprehensive hernia surgery education and enable surgeons to select the most appropriate technique for each patient.
4. **Healthcare Policy:** In resource-limited settings, the Desarda technique may be a cost-effective alternative that maintains clinical efficacy while reducing healthcare costs.

Comparison with Literature: Our findings are consistent with several recent comparative studies. Moghe et al. reported similar outcomes with comparable recurrence rates and superior pain profiles for Desarda repair [4].

A systematic review by several authors has confirmed the non-inferiority of tissue-based repairs in terms of recurrence while highlighting the reduced mesh-related complications.[5][18]

However, some studies have reported conflicting results, with higher recurrence rates for tissue-based repairs in certain populations [19]. These discrepancies likely reflect differences in patient selection, surgical technique, and follow-up protocols, emphasizing the importance of proper training and case selection. The European Hernia Society guidelines acknowledge both techniques as acceptable options for primary inguinal hernia repair, with the choice depending on surgeon expertise, patient factors, and institutional resources [1]. Our study contributes to this

evidence base by providing comprehensive comparative data from a tertiary care setting.

Conclusion

This prospective randomized controlled study demonstrates that the Desarda technique offers comparable efficacy to the Lichtenstein repair in primary inguinal hernia repair, with both methods showing similarly low recurrence rates at 12 months. Additionally, the Desarda technique provides superior patient comfort, with significantly less postoperative pain, reduced chronic groin pain, numbness, and foreign body sensation. Patients undergoing Desarda repair also experience faster recovery, including shorter hospital stays, earlier ambulation, and quicker return to daily activities and work. Moreover, the absence of mesh in the Desarda technique offers a significant economic advantage and eliminates mesh-related complications such as chronic inflammatory responses and foreign body reactions.

Based on these findings, the Desarda technique should be considered a viable and cost-effective first-line option for primary inguinal hernia repair, especially for young and middle-aged patients, those concerned about foreign material implantation, and in resource-limited settings where rapid recovery is a priority. The choice between Desarda and Lichtenstein techniques should be tailored to individual patient factors, surgeon expertise, and institutional resources. Both techniques can achieve excellent outcomes with appropriate patient selection. Future research should focus on long-term outcomes, quality of life assessments, and cost-effectiveness in multicenter trials to further validate these findings and support the expanding role of tissue-based repairs in modern hernia surgery.

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