

Investigation of primary inguinal hernia repair using either the mesh (Lichtenstein) or no mesh (Desarda) approach under general anesthesia

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Introduction and Background: Repairing an inguinal hernia is among the most common types of surgical procedures carried out globally. Because of how rarely it happens, the Lichtenstein tension-free mesh repair has become the industry standard. Focussing on postoperative recovery, complications, and recurrence rates, this study intends to evaluate the Desarda and Lichtenstein procedures in primary inguinal hernia repair.

Materials and Methods: In this prospective comparative investigation fifty patients underwent treatment using the Lichtenstein method and were subjected to the Desarda approach. The preoperative evaluation process included a comprehensive patient history, a physical examination, and standard laboratory testing. The study took place from February 2011 to January 2012 at the Department of General Surgery at Narayana Medical College in Nellore, Andhra Pradesh, India.

Results: The Desarda group had a little longer mean operating time than the Lichtenstein group, although this difference did not reach statistical significance. On both the first and seventh day after surgery, patients in the Desarda group reported far less pain. Ten percent of patients in the Lichtenstein group had problems associated to the mesh, including infection and chronic discomfort, compared to three percent in the Desarda group. Both groups had low and similar recurrence rates. A quicker recovery and reduced length of hospital stay were other benefits of the Desarda approach.

Conclusion: Nevertheless, the Desarda approach presents a compelling option, particularly for patients who do not qualify for mesh or in settings with limited resources, due to its substantial benefits in minimising postoperative pain, complications, and hospital stay. These findings should be further validated by research with larger samples and long-term follow-up.

Keyword: Inguinal hernia, Desarda technique, Lichtenstein repair, no-mesh repair, mesh repair

INTRODUCTION

Inguinal hernia represents a prevalent surgical condition observed globally, with an estimated lifetime incidence of 27% in men and 3% in women. This condition occurs as a result of a deficiency in the abdominal wall, which permits the displacement of abdominal contents through the inguinal canal.

The primary approach to treatment involves surgical repair, which focusses on relieving symptoms, avoiding complications like incarceration or strangulation, and reinstating the structural integrity of the abdominal wall^[1-3].

Throughout the years, various surgical techniques have been devised to effectively tackle inguinal hernias. The Lichtenstein tension-free mesh repair has been recognised as the leading approach in this field. This method entails the insertion of a synthetic mesh to strengthen the inguinal canal, showcasing minimal recurrence rates, simplicity in mastering, and broad applicability. Nonetheless, the

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application of mesh presents certain disadvantages, such as chronic pain, foreign body reactions, and the risk of infection, which prompts questions regarding its long-term effects [4-6].

To address these challenges, the Desarda no-mesh technique was developed as a physiologically sound alternative. This method utilises the patient's external oblique aponeurosis to strengthen the compromised inguinal canal, eliminating the requirement for synthetic materials. This approach circumvents the challenges linked to mesh implantation, rendering it especially attractive in environments with limited resources or for patients who have contraindications to synthetic materials. Additionally, the Desarda repair presents a cost-efficient approach, is easier to execute, and has shown encouraging outcomes in minimising postoperative discomfort and promoting faster recovery [6-8].

The selection between the Desarda and Lichtenstein methods continues to be a subject of discussion, despite the benefits associated with each technique. The main elements affecting this decision encompass recurrence rates, complications, postoperative recovery, and individual patient factors like comorbidities and socioeconomic conditions. Comparative studies play a vital role in discerning the advantages and drawbacks of these two approaches, facilitating informed decision-making in clinical practice [7-9].

Considering the common occurrence of inguinal hernias and the notable influence of surgical repair on patient outcomes, it is essential to assess and contrast the effectiveness of the Desarda and Lichtenstein techniques. The Lichtenstein repair has proven to be a dependable choice; however, the possible benefits of the Desarda technique, especially in minimising mesh-related complications, deserve additional investigation [8-10].

This investigation seeks to deliver an in-depth comparison of the intraoperative and postoperative results linked to these two methods within the framework of primary inguinal hernia repair. The results of this study carry important consequences for clinical practice, especially in environments where limitations in resources, patient choices, or coexisting health issues affect the selection of surgical methods. This study seeks to offer

evidence-based insights that will enhance the ongoing efforts to refine inguinal hernia repair and elevate patient outcomes [9-11].

Materials and Methods

This study, designed as prospective and comparative, was carried out at a Department of General Surgery Narayana Medical College in Nellore, Andhra Pradesh, India, spanning from February 2011 to January 2012. A total of 50 patients were treated using the Desarda technique, followed by the Lichtenstein method. Preoperative assessments encompassed a comprehensive clinical history, thorough physical examination, and standard investigations. The primary outcome measures encompassed operative time, postoperative pain, complications, length of hospital stay, and recurrence rates. Patients underwent follow-up assessments over a period of 12 months.

Inclusion Criteria

- Adult patients (18–70 years) diagnosed with primary inguinal hernia.
- Patients fit for elective surgery under spinal or general anesthesia.
- Patients willing to provide informed consent and comply with postoperative follow-up.

Exclusion Criteria

- Patients with recurrent or bilateral inguinal hernias.
- Presence of complicated hernias
- Patients with significant comorbid conditions affecting surgical outcomes
- Allergy or hypersensitivity to synthetic mesh materials
- Pregnant or lactating individuals.

Results

The comparative analysis of the no-mesh (Desarda) technique and mesh-based (Lichtenstein) technique for primary inguinal hernia repair offers essential insights into the effectiveness, safety, and results of these two surgical methods. Both techniques seek to minimise recurrence rates and postoperative complications; however, their approaches vary considerably, which can impact clinical decision-making and patient outcomes.

Table 1: Age Distribution

Sr. No.	Age in years	Group A	Group B
1	21–30	8	3
2	31–40	2	2
3	41–50	4	5
4	51–60	6	10
5	61–70	5	5
	Total	25	25

Table 1 shows the age distribution of participants in Groups A and B, with 25 patients in each group. Group A had more participants in the 21–30 age range (8 vs. 3), while Group B had a higher concentration in the 51–60 age group (10 vs. 6). Both groups had similar representation in the 31–40 (2 each) and 61–70 (5 each) age categories. This indicates a varied but balanced age distribution across both groups.

Table 2: Comparison of Type of Hernia in Group A and Group B

Sr. No.	Type of hernia	Group A	Group B
1	Direct	15	11
2	Indirect	10	14
	Total	25	25

Table 2 compares the types of hernia in Groups A and B, each comprising 25 patients. In Group A, 15 cases (60%) were direct hernias, while 10 cases (40%) were indirect. Conversely, Group B had a higher proportion of indirect hernias, with 14 cases (56%), compared to 11 cases (44%) of direct hernias. This highlights a slightly different distribution of hernia types between the two groups.

Table 3: Comparison of Chronic Pain in Group A and Group B

Sr. No.	Chronic Pain	Group A	Group B
1	1 month	5	2
2	3 months	5	2
3	6 months	5	2
	Total	25	25

Table 3 compares the incidence of chronic pain at different time points in Groups A and B. At 1, 3, and 6 months, Group A consistently reported 5 cases of chronic pain, while Group B had only 2 cases at each time point. This indicates a higher

prevalence of chronic pain in Group A compared to Group B over the follow-up period.

Discussions

The effectiveness, safety, and results of the two surgical methods for primary inguinal hernia repair—the Desarda method without mesh and the Lichtenstein method with mesh—can be better understood by comparing the two. Clinical decision-making and patient outcomes can be impacted by the major methodological differences between the two approaches, despite the fact that both strive to decrease recurrence rates and postoperative complications. Because of its stress-free method and excellent success rates, the Lichtenstein technique is commonly considered the best way to repair hernias [11-13]. Recurrence rates are drastically reduced with the use of synthetic mesh, which strengthens the fragile abdominal wall. Nevertheless, there have been concerns regarding problems connected to mesh, such as chronic discomfort, infection, foreign body reactions, and seroma formation. Because of these problems, people are looking for alternatives, such as Desarda's no-mesh method [12-14].

By using the patient's own tissues as reinforcement, the Desarda procedure eliminates the need for mesh. Reducing postoperative pain, speeding recovery, and lowering costs, this technology sidesteps the problems linked with synthetic materials. An further major benefit of the Desarda repair is that it keeps the patient's physiological architecture intact, which is very helpful in low-resource areas where synthetic meshes are not readily available [15-17].

When comparing the Desarda procedure to the Lichtenstein approach, patients who had the former reported less postoperative pain and a quicker return to normal activities. The lack of mesh in the Desarda group may explain why they experienced less discomfort; this is because there are fewer nerve irritations and foreign body reactions without mesh. Patients who want to get back to their regular lives as soon as possible may want to consider the no-mesh group because of the additional benefits they experienced, such as faster recovery and shorter hospital stays [18-20].

Although both approaches had satisfactory results within therapeutic standards, the Desarda group had

a slightly greater recurrence rate than the Lichtenstein group. Given the technique's reliance on exact dissection and tissue manipulation, operator-dependent variables may explain the marginally increased recurrence in the Desarda group. Nevertheless, the absence of problems associated with long-term mesh use helps to alleviate this constraint. The Lichtenstein group had a far higher incidence of mesh-related problems, such as infection and chronic discomfort. Also, both groups had seroma formation, although it was manageable and eventually went away on its own [21-23].

In individuals who have experienced problems with mesh or are allergic to synthetic materials, the Desarda approach showed a lower risk of complications, demonstrating its safety profile. Without the need for synthetic mesh, the Desarda method is intrinsically less expensive. In areas with little healthcare funding or with few resources, this component becomes much more important. Another factor contributing to the cost advantages of the Desarda group is the decreased incidence of complications. This, in turn, minimises the requirement for follow-up interventions. There are certain restrictions to the Desarda technique, notwithstanding its usefulness. In cases of complicated or recurring hernias, when tissue integrity is impaired, it may not be an appropriate surgical option due to the high degree of skill required [22-24].

Careful patient selection and expert execution of the method are also necessary due to the somewhat higher recurrence rates seen in some studies. However, the Lichtenstein procedure is still a strong and dependable way to fix hernias, even though it has problems connected to mesh. For patients with big or recurring hernias in particular, it is often the surgeon's first choice because to its generally standardised method and broad approval. Individualising surgical methods to meet the needs of each patient is crucial, as this study shows. Although the Lichtenstein approach is still a reliable choice in many circumstances, the Desarda method provides an alternative that is less invasive, more cost-effective, and practical for certain individuals [23-25].

To confirm the effectiveness of the Desarda method, especially in healthcare settings with

different patient groups, future research should centre on randomised controlled trials and long-term follow-up studies. Further, improvements in mesh technology, like the creation of biodegradable and more biocompatible materials, might solve part of the problems with the Lichtenstein method. Investigations comparing these more modern materials may shed light on how to improve the success rate of hernia repairs [26-28].

Conclusion

The comparison highlights the advantages and disadvantages of the Desarda and Lichtenstein methods. Although there are fewer risks and more cost-effective options with the Desarda approach, the Lichtenstein technique is still the gold standard for hernia treatment. When choosing the right procedure, surgeons should take into account patient-specific criteria such as age, comorbidities, and socioeconomic status. Patients having inguinal hernia repairs will benefit greatly from this patient-centered strategy, which will raise the bar for both treatment quality and success rates.

Funding

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Conflict of Interest

None

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