

Chapter 24

The Desarda Inguinal Hernia Repair: A Review

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Abstract

Inguinal hernia repair ranks among the most frequently performed surgical procedures globally. While mesh-based techniques, such as the Lichtenstein repair, have become the standard treatment due to their low recurrence rates, concerns about mesh-related complications, including chronic groin pain, infection, foreign body sensation, and cost, have prompted interest in non-mesh alternatives. The Desarda technique, introduced by Mohan P. Desarda in 2001, is a tissue-based, tension-free repair that employs an undetached strip of the external oblique aponeurosis to reinforce the posterior wall of the inguinal canal. This approach aims to integrate the benefits of a tension-free repair while avoiding the use of prosthetic materials. Current evidence indicates that the Desarda repair offers recurrence rates, postoperative pain outcomes, and recovery profiles comparable to those of mesh-based repairs in selected patients. This chapter evaluates the clinical outcomes, advantages, limitations, and contemporary role of the Desarda repair in inguinal hernia surgery.

Keywords: Desarda, Open hernia repair, Tension free repair, Non-mesh, Inguinal hernia, Chronic pain, and Recurrence.

Introduction

The open inguinal hernia repair method, introduced by Mohan P. Desarda, utilizes a segment of the external oblique aponeurosis to fortify the posterior wall of the inguinal canal. This technique involves partially detaching a strip of the external oblique aponeurosis from its medial leaf while maintaining its continuity at both ends. The detached strip is then sutured to the inguinal ligament below and the arch of muscles (internal oblique and transversus abdominus) above, thereby reinforcing the posterior wall of the inguinal canal. Desarda performed a total of 400 repairs, reporting no postoperative complications and only one recurrence over an 8-year follow-up period (Desarda, 2001). Subsequently, Desarda conducted a prospective study involving 229 patients who underwent this repair, observing minimal complications and no recurrence after a 24-month follow-up (Desarda, 2008). In his subsequent series, Desarda applied this repair to 860 patients with inguinal hernia, resulting in a total of 920 repairs. Of these, 851 patients underwent the procedure under local anesthesia, with a wound hematoma occurring in one patient. After a 7-year follow-up, no recurrence was reported (Desarda, 2001).

The HerniaSurge guidelines, as outlined by the Australasian Hernia Society, indicate that the Desarda repair is a novel approach in the management of inguinal hernia. Nevertheless, the recurrence rate associated with this method is reported to be 1.9%, a figure derived from non-randomized studies. Consequently, formal recommendations regarding its application in inguinal hernia management cannot be established. Further research into the Desarda repair is warranted (Tran, 2018).

This chapter seeks to evaluate the Desarda repair method in the surgical treatment of inguinal hernias in adults. The Desarda hernia repair is compared with other mesh-based techniques, such as the Lichtenstein method, with a focus on complications, chronic pain, and recurrence rates. A thorough literature review was performed using databases including PubMed, Google Scholar, Semantic Scholar, and Cochrane to identify original research studies, observational studies, clinical trials, clinical reviews, review articles, systematic reviews, and meta-analyses published between 2000 and 2026. The search utilized the following keywords: “Desarda,” “Open hernia repair,” “tension-free repair,” “Non-mesh,” “Inguinal hernia,” “chronic pain,” and “recurrence.” All articles were in English, and additional articles were identified through manual cross-checking. Case reports, commentaries, and editorials were excluded, while all articles involving adult patients were included in this review.

Discussion

The Desarda Repair for Inguinal Hernia in Adults

Gurgenidze et al. conducted the Desarda repair on 118 patients with inguinal hernia, of whom 88 had an indirect inguinal hernia, and 26 had a direct inguinal hernia. The study reported no severe complications, with wound hematoma occurring in 3.4% of cases and seroma in 4.2%. Notably, there were no recurrences after a 5-year follow-up period (Gurgenidze, 2018). Bashir et al. prospectively evaluated the Desarda repair for inguinal hernia in adults, involving 50 patients. In this cohort, 14% experienced postoperative wound infection, and 8% reported chronic pain. Importantly, no recurrences were observed among the patients who underwent the Desarda repair (Bashir et al., 2015). Mitura et al. performed a retrospective study on the Desarda repair for inguinal hernia in adults, focusing on long-term outcomes over 15 years. The study included 341 patients, with successful follow-up in 251 cases. Postoperative complications were observed in 5.6% of the cases, and the recurrence rate was 1.5% (Mitura et al., 2021).

Mohamed et al. investigated the long-term outcomes of patients who underwent the Desarda inguinal hernia repair. This retrospective study included 179 patients, with a surgical site infection rate of 3.9%, a hematoma rate of 3.9%, and a seroma rate of 5%. The recurrence rate was observed to be 1.7% after a follow-up period of five years (Mohamed et al., 2024). Rashid et al. examined the outcomes of the Desarda repair for inguinal hernia in adults. The study comprised 150 patients, with the mean operative time for the Desarda procedure recorded at 34.86 minutes. Severe postoperative pain was reported in 10.67% of cases on the first postoperative day (Rashid et al., 2022).

Comparison of the Desarda repair with the open mesh-based inguinal hernia repairs

Ge et al. conducted a systematic review to compare the Desarda repair with the Lichtenstein repair for treating inguinal hernia in adults. This review included eight studies encompassing 1,014 patients, with 500 undergoing the Desarda repair and 514 undergoing the Lichtenstein repair. The analysis revealed no significant differences between the procedures in terms of operative time, postoperative complications, seroma formation, chronic pain, and recurrence (Ge et al., 2018). Similarly, Moghazy et al. performed a prospective comparative study involving 50 patients, equally divided between the Desarda and Lichtenstein repairs. This study also found no significant differences in postoperative complications, seroma formation, chronic pain, and recurrence rates between the two procedures (Moghazy et al., 2022).

Pereira et al. conducted a systematic review and meta-analysis comparing the Desarda repair with the Lichtenstein repair for managing inguinal hernia in adults. This study encompassed five studies involving 536 patients, with 310 undergoing the Desarda repair and 226 undergoing the Lichtenstein repair. The analysis revealed no significant differences in postoperative complications between the two procedures (RR = 0.62, 95% CI, 0.47–0.81). Similarly, no differences were observed in recurrence rates (RR = 1.24, 95% CI, 0.34–4.56) (Pereira & Varghese, 2022). Szopinski et al. conducted a randomized clinical trial comparing these two repair methods for adult inguinal hernia treatment. This study included 208 patients, with 105 undergoing the Desarda repair and 103 undergoing the Lichtenstein repair. The findings indicated no significant differences in postoperative complications, chronic pain (4.8% vs. 2.2%), or recurrence rates between the procedures (Szopinski et al., 2012). Additionally, Mohamedahmed et al. performed another systematic review and meta-analysis comparing the Desarda and Lichtenstein repairs for inguinal hernia. This analysis included eight studies with 3,177 patients, comprising 1,551 patients undergoing the Desarda repair and 1,626 the Lichtenstein repair. The results showed no significant differences in postoperative complications, seroma, chronic pain, or recurrence rates between the two procedures (Mohamedahmed et al., 2020).

Emile et al. conducted a systematic review and meta-analysis of randomized controlled trials comparing the Desarda repair with the Lichtenstein repair for primary inguinal hernia. This study included six trials with a total of 2,159 patients, of whom 1,099 underwent the Desarda repair, and 1,155 underwent the Lichtenstein repair. The overall complication rate was higher in the Lichtenstein repair group (12% vs. 7.2%, OR: 1.86, 95% CI, 1.36–2.55), although no significant differences were observed in recurrence rates between the two procedures (OR: 0.946, 95% CI, 0.35–2.55) (Emile & Elfeki, 2018). Saeed et al. conducted a systematic review and meta-analysis on the postoperative outcomes of the Desarda and Lichtenstein repairs for inguinal hernia. This study incorporated 23 studies with 2,425 patients, revealing that the Desarda repair was associated with reduced scrotal oedema (RR=0.52, 95% CI, 0.34–0.78), decreased seroma formation (RR=0.68, 95% CI, 0.47–0.99), and diminished chronic pain (RR=0.26, 95% CI, 0.15–0.45) (Saeed et al., 2025). Pompeu et al. performed a meta-analysis of randomized controlled trials comparing the Desarda and Lichtenstein repairs for inguinal hernia. This analysis included 18 studies with 1,756 patients, with 861 undergoing the Desarda repair and 895 the Lichtenstein repair. The Desarda repair was linked to lower seroma rates (OR=0.55, 95% CI, 0.35–0.89), reduced chronic pain (OR=0.32, 95% CI, 0.12–0.88), and shorter operative time (MD=-8.6 min, 95% CI, -14.5 to -2.8). Recurrence rates were 1.4% for the Desarda repair and 2.1% for the Lichtenstein repair (Pompeu, 2024).

Zulu et al. conducted a retrospective study to compare the Desarda and Lichtenstein techniques for inguinal hernia repair. The study involved 35 patients, with 23 undergoing the Lichtenstein repair and 12 undergoing the Desarda repair. The findings indicated no significant differences in postoperative complications, chronic pain, or recurrence rates between the two procedures. However, the Desarda repair was associated with a shorter operative time compared to the Lichtenstein repair (Zulu et al., 2016). Gedam et al. conducted a prospective cohort study comparing these two techniques for inguinal hernia treatment. This study included 187 patients, with 92 receiving the Desarda repair and 95 receiving the Lichtenstein repair. The results showed no significant differences in postoperative pain or recurrence rates between the procedures (Gedam et al., 2017). Additionally, comparative studies by Moghe et al., Kumar et al., and Ibrahim et al. also concluded that the outcomes of the Desarda and Lichtenstein repairs were similar (Ibrahim et al., 2024; Kumar et al., 2025; Moghe et al., 2022).

Jain et al. conducted a randomized controlled trial to compare the Desarda repair with the Lichtenstein repair for managing inguinal hernia. The study comprised 77 patients, with 39 undergoing the Desarda repair and 38 undergoing the Lichtenstein repair. The incidence of chronic pain was found to be higher in the Lichtenstein repair group, although the recurrence rate was similar between the two groups (Jain et al., 2021). In another randomized trial by Rodriguez et al., the Desarda and Lichtenstein repairs for inguinal hernia were compared. This study involved 1382 patients, with 678 receiving the Desarda repair and 704 receiving the Lichtenstein repair. The Lichtenstein repair was associated with increased morbidity (7.5% vs. 3.4%); however, there were no differences in chronic pain, and the recurrence rate after six years of follow-up was similar between the groups (Rodríguez et al., 2013).

Pathak et al. examined the long-term outcomes of the Desarda repair in the management of inguinal hernia. This retrospective cohort study involved 624 patients, with 240 undergoing the Desarda repair and 384 undergoing the Lichtenstein repair. The study found no

significant differences in postoperative complications between the two procedures, and the incidence of chronic pain was comparable. Additionally, there were no differences in recurrence rates between the procedures after a follow-up period of three years (Pathak et al., 2024). Youssef et al. conducted a randomized clinical trial comparing the Desarda repair with the Lichtenstein repair for primary inguinal hernia treatment. In this study, 168 patients were randomized, with 85 undergoing the Desarda repair and 83 undergoing the Lichtenstein repair. The results indicated no differences in chronic pain and recurrence rates between the procedures; however, the Desarda repair was associated with a shorter operative time (Youssef et al., 2015). Manyillirah et al. performed a double-blind randomized controlled trial comparing the Desarda repair with the Lichtenstein repair among African patients with inguinal hernia. A total of 101 patients were randomized, with 50 undergoing the Desarda repair and 51 undergoing the Lichtenstein repair. The study found no differences in postoperative complications and recurrence rates between the procedures, but the Desarda repair was associated with a shorter operative time (Manyilirah et al., 2012).

Philip et al. conducted a retrospective study to evaluate the quality of life following the Desarda repair for inguinal hernia. The study included 366 patients, with 120 undergoing the Desarda repair and 246 undergoing the transabdominal preperitoneal (TAPP) repair. For those who underwent the Desarda repair, the mean operative duration was 50 minutes, and the average length of hospital stay was 2 days. After an 18-month follow-up period, the recurrence rate was observed to be 0.8% (Philipp et al., 2023).

Table 1: Comparison of Complication Rates, Chronic Pain, and Recurrence Rates Between Desarda and Lichtenstein Repairs

Study	Study Type	Postoperative Complications	Chronic Pain	Recurrence
Ge et al., 2018	Systematic review	No significant difference in overall postoperative complications between Desarda and Lichtenstein repairs. Desarda showed favorable early recovery.	Lower early postoperative pain with Desarda; no significant difference in long-term pain outcomes.	No significant difference between groups
Emile, 2018	Systematic review and meta-analysis	Overall complications significantly higher with Lichtenstein (OR 1.86, $p < 0.001$). Seroma and surgical site infection were significantly more frequent after Lichtenstein repair.	Postoperative pain was comparable between techniques.	No significant difference in recurrence (OR 0.946, $p = 0.91$).
Pereira, 2022	Systematic review and meta-analysis	Postoperative complications were significantly more frequent with Lichtenstein repair; seroma rate was significantly lower following Desarda repair ($p = 0.02$).	Chronic pain was not identified as significantly different between techniques in the included studies.	No significant difference in recurrence ($p = 0.74$).
Saeed et al., 2025	Systematic review and meta-analysis	Desarda was associated with significantly lower rates of seroma (RR 0.68), scrotal edema (RR 0.52), and foreign-body sensation (RR 0.61).	Chronic postoperative pain was significantly lower with Desarda (RR 0.26; 95% CI 0.15-0.45; $p < 0.00001$).	Recurrence rates were lower than with Desarda, but the difference was not statistically significant.

Conclusion

The Desarda technique constitutes an innovative tissue-based method for inguinal hernia repair, aiming to deliver the advantages of tension-free surgery without the use of prosthetic materials. Current evidence indicates that recurrence rates, postoperative pain outcomes, and overall complication profiles are comparable to those observed with the Lichtenstein repair in selected patients. This technique is particularly advantageous in resource-limited settings, for patients who prefer to avoid mesh implantation, and in cases where prosthetic materials may be contraindicated. Despite the promising results, further high-quality multicenter studies with long-term follow-up are necessary to better define its role in contemporary hernia surgery. Currently, the Desarda repair should be regarded as a valuable option within the repertoire of inguinal hernia surgeons, rather than a complete replacement for established mesh-based techniques.

Declaration

Conflict of interest: There is no conflict of interest

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