



Original Article

Clinical Evaluation of Novel Laproscopic Technique in Inguinal Hernia Repair: Desarda Technique

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ABSTRACT

Background: Inguinal hernia is one of the commonest surgical problems encountered by surgeons worldwide. Because of frequency of occurrence of hernia cases, this remains an important medical problem.

Methodology: Desarda's inguinal hernia repair method for adults is being investigated in this prospective, interventional trial. The study included patients who met the inclusion criteria. The study examined the participants' clinical profile as well as postoperative variables such as recurrence rate, incidence of chronic groin pain, time needed to return to basic activities, and postoperative pain.

Results: The age group between 51 and 60 years old had the highest hernia incidence (23.33%), followed by those between 31 and 40 years old (20.66%). The overall number of cases was disproportionately male. Patients with right-sided hernias were frequently observed. An indirect form of inguinal hernia was prevalent in the cohort, affecting about 82% of patients. In this group, 12.5% of patients had a persistent cough, while 21.66% smoked regularly. In 34.16%, 14.16%, and 18.3% of patients, hypertension, diabetes, and urinary obstructive symptoms were observed. 60 minutes was the average operating time [40–80 minutes]. On Days 1, 7, and 30, the visual analogue scale scores for post-operative pain were 3.35, 0.95, and 0.008, respectively. It took 24 hours, which is a lot shorter time, to resume routine activities. Out of 120 patients, cord oedema [5%] was the most frequent consequence after surgical site infection [2.5%] and seroma.

Conclusion: Adults with a lower risk of complications can consider Desarda's inguinal hernia repair procedure.

Keywords: Inguinal hernia, Desarda's inguinal hernia repair technique, Complications, Post-operative pain.

INTRODUCTION

Inguinal hernias are among the most common surgical problems that surgeons worldwide encounter. ¹ Because hernias are so common, they remain a major medical issue and are now the most advanced surgical procedure for enhancing the results of inguinal hernia repair. Eighty percent of adult hernia procedures are for inguinal hernias. ²

Before the 2009 release of the European Hernia Society's (EHS) recommendations, which were based on a review of the literature and the results of clinical trials, there were no published surgical guidelines for treating hernias. ³ According to EHS guidelines, mesh-based procedures—more especially, the Lichtenstein technique—should be used to treat adults with primary inguinal hernias. ^{4,5}

Earlier efforts to identify the defect and fix it resulted in unacceptable rates of recurrence. Modern methods have improved the recurrence rates by covering the hernia defect with mesh or, in the case of laparoscopic surgery, behind the hernia defect. ^{6,7} Because of the reported rates of problems and postoperative disability, several researchers are looking for new hernia repair techniques. ^{8,9}

Dr. Mohan Desarda of Pune, India, created the Desarda technique, which was first used in 2011 and is currently a cutting-edge surgical option for tissue-based groin hernia repair.¹⁰ These improvements have been particularly apparent in hernia surgery centers, where some facilities record failure rates of less than 1%.^{11,12}

In his investigations, Dr. Desarda claims results that are either better or comparable to Shouldice and Lichtenstein repairs in terms of a low frequency of problems and roughly 0.2% recurrences.¹² The Desarda approach for hernia repair has not been extensively studied in this area. In order to better understand the clinical profile of patients, including age, sex, hernia type, and related comorbidities, we attempted to investigate this more recent approach. to investigate the Desarda technique's viability for hernia repair. Additionally, postoperative parameters such as the incidence of persistent groin pain, the recurrence rate, the time needed to return to basic activities, and postoperative pain should be studied.

MATERIALS AND METHODS

This prospective, interventional study on Desarda's inguinal hernia repair method in adults was conducted at the Government College and Hospital between June 2015 and November 2017. Prior to the study's execution, institutional ethical committee approval was obtained. Following diagnosis confirmation and appropriate, valid written informed consent, a total of 120 cases were enrolled in this investigation.

Inclusion criteria:

1. Patients aged 18 years and above.
2. Uncomplicated reducible, irreducible inguinal hernia, direct and indirect type, unilateral and bilateral type.

Exclusion criteria:

1. Patient below the age of 18 years.
2. Recurrent inguinal hernia.
3. Obstructed or strangulated inguinal hernia
4. Infection at groin area.
5. Wound or scar at the groin.
6. Patients found to have weak or divided external oblique aponeurosis intra-operatively.

Study procedure

Through the surgical outpatient department, casualties, and our government college and medical facility, information will be collected from all patients—regardless of gender, background, or socioeconomic status—who are hospitalized and treated for inguinal hernias using Desarda's surgical procedure. The case proforma will include the patient's whole medical history. A number of tests, such as a complete hemogram, KFT, LFT, blood group, HIV, HBsAg, chest x-ray to check for chest infections, and USG KUB [prostate], are carried out when a patient shows signs of BPH and an enlarged prostate on digital rectal examination. After explaining the surgical procedure to the patient, a signed consent form will be collected.

Data collection postoperatively

In order to collect data and record any complications or hernia recurrences, patients were contacted for follow-up on the seventh, thirty, third, sixth, one, and two years following the procedure. Following surgery, a single dosage of diclofenac injection was administered as usual. All patients received three daily doses of tab diclofenac for three days at first, and thereafter more frequently as needed. Using a visual analogue scale, the pain score was evaluated on the first, seventh-, and thirty-days following surgery.

Analysis of statistics

Categorical variables were represented by real numbers and percentages, while continuous variables were displayed as means.

RESULTS

A total of 120 cases were examined in the current study of the Desarda technique of inguinal hernia repair; the age group of 51–60 years old accounted for the greatest number of cases (23.33%), followed by those aged 31–40 years (20.66%) and 41–50 years (19.16%), 61–70 years (18.18%), 21–30 years (14.8%), and 71–80 years (4.96%). The age group of 18–20 years old was the least affected, with no cases observed. The patients in all 120 cases were men. No female patient cases were seen. Four patients were determined to be unfeasible for the Desarda technique due to extremely thin, torn-out external oblique aponeurosis, out of the 124 cases that were enrolled for the Desarda treatment. As a result, four cases were changed to correct the Lichtenstein mesh. This study only covered 120 patients.

Eighty-two (68.33%) of the 120 cases in the current study of the Desarda technique of inguinal hernia repair were of the indirect type, 30% (36) were of the direct type, and 1.6% (02) were of the pantaloon type. Of the 120 individuals, 34.16%

(41) had hypertension, 21.66% (26) were chronic smokers, 18.3% (22) showed indications of bladder obstruction, 14.16% (17) had diabetes on medication, and 12.5% (15) had a persistent cough.

For three months, patients with benign prostatomegaly received conservative treatment with 0.4 mg OD tablets of tamsulosin; once symptoms subsided, they were scheduled for surgery. Following a thorough evaluation and treatment, patients with persistent coughs were scheduled for surgery and given post-operative smoking cessation advice.

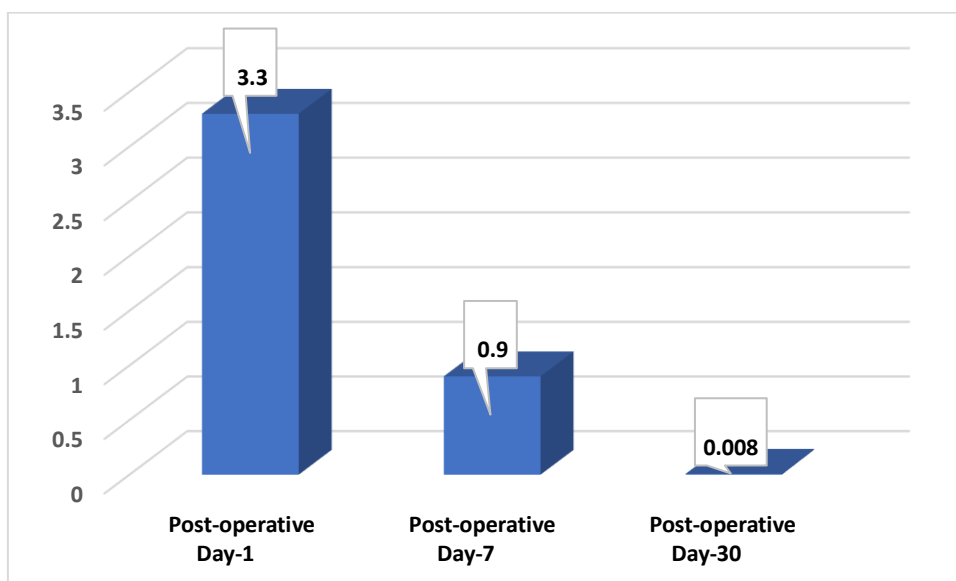


Figure 1: Postoperative pain among patients operated for Desarda technique

The average operating time for the Desarda technique of inguinal hernia repair in this study was 60 minute 60 mins [35-85 min]. The Visual Analogue Scale was used to analyze the post-operative pain levels. The average post-operative pain score was 3.3 on day one, 0.9 on day seven, and 0.008 on day thirty (Figure 1). Additionally, it took an average of 24 hours to resume routine tasks.

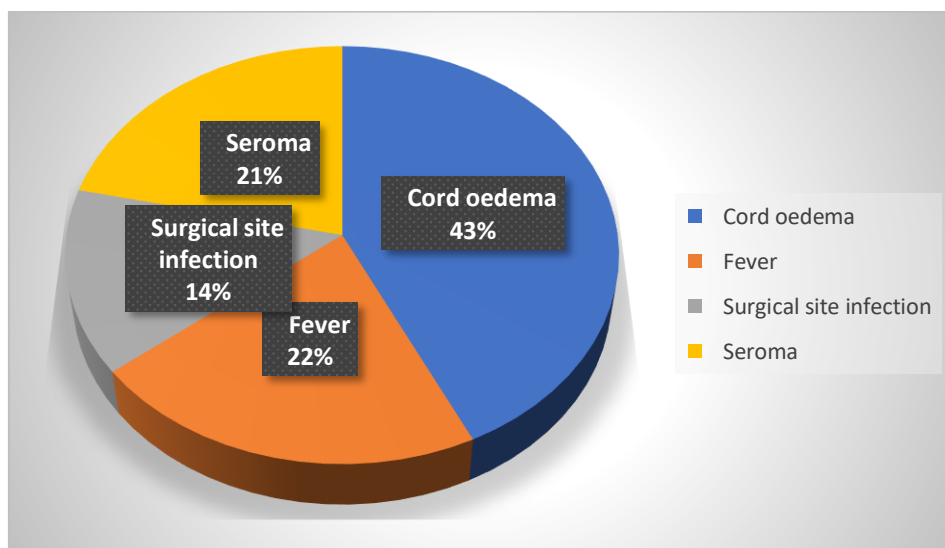


Figure 2: Early complications among the included patients

The early complications were cord oedema in 5% of cases, which was conservatively treated with anti-inflammatory drugs for three days. 2.5% of patients had a fever without a wound infection, which was later treated with antipyretic drugs. 1.6% of cases had surgical site infections, which were conservatively treated with cleaning and dressing for three days. Aspiration is used to treat seroma in 2.5 percent of cases (Figure 2).

Table 1: Late complications among the participants

Late complications [>30 days]	No. Of patients	Percent

Chronic groin pain	0	0%
Foreign body sensation	0	0%
Recurrence	01	0.83%

One patient [0.8%] experienced a recurrence following an 18-month follow-up period. He was then diagnosed with benign prostate hypertrophy, referred for urological treatment, and underwent surgery to correct a recurring hernia using Lichtenstein mesh. In this study not a single case had a chronic groin pain and foreign body sensation (**table 1**).

DISCUSSION

The average age of the 120 cases in this study was 48 years old. The mean age in the studies conducted by Youssef et al. (2015)¹³ and Chung L et al. (2010)¹⁴ was 46 and 50 years old, respectively. All of the cases in this study were men. In their 2015 study, Youssef et al. found that the incidence of male patients was 95.83% and that of female patients was 4.16%.¹³ In their 2010 study, Chung L et al. found that the incidence of male patients was 98.9% and that of female patients was 1.08%.¹⁴

In the present study, the mean operative time taken for single-sided inguinal hernia repair by the Desarda technique was 60 minutes. Z Abbas et al in 2015, in their study, the mean operative time required for Desarda hernia repair for single-sided inguinal hernia was 66 minutes.¹⁵ The results of both studies were comparable. The duration of operation is a surgeon-dependent variable and reflects the ease of operation. In the present study, operative time was calculated from skin incision to skin closure. The operative time in the present study is almost the same as in other studies.

In the present study, the pain scoring was done by the Visual Analogue Scale [VAS]. The average post-operative pain score was 3.3 on day one, 0.9 on day seven, and 0.008 on day thirty Z Abbas et al in 2015, in their study of the Desarda technique of inguinal hernia repair, reported the mean post-operative pain score on Day 1, Day 7 was 2.8 and 1.4, respectively.¹⁵ Chung L et al in 2010, in their study of the Desarda technique of inguinal hernia repair, the mean post-operative pain score on Day 1, Day 7, and Day 30 was 2.4, 0.2, and 0.01, respectively.¹⁴

The results of the mean post-operative pain score on Day 30 of both studies are comparable. Pain post-operatively depends on tissue handling during surgery and also the subjective value of patients, so values vary varies patient to patient. This is definitely less in the Desarda procedure when compared with the prosthesis repair, as tissue handling is less in the Desarda repair. The result of the present study is comparable with the other studies done worldwide.

In the present study of the Desarda technique of inguinal hernia repair, the time required for patients to return to their basic activities postoperatively was 24 hours. Szopinski et al in 2012, in their study, reported that the mean time required for patients to return back to their basic activities post-operatively was 24 hours.¹⁶ Results of the mean time required for patients to return to their basic activities post-operatively after Desarda hernia repair were comparable in both studies.

Table 2: Comparison of the present study complications with other studies

S.no	Complications	Youssef et al ¹³	Chung L et al ¹⁴	Present study
1	Cord oedema	7.1%	6.5%	5%
2	Surgical site infection	1.4%	1.08%	1.6%
3	Seroma	05	3.2%	2.5%
4	Chronic groin pain	2.8%	1.08%	0
5	Foreign body sensation	9.8%	0	0
6	Recurrence	1.4%	1.08%	0.83%

Results of incidence of cord oedema post-operatively in the present study of Desarda technique of inguinal hernia repair were the lowest among all the studies compared and comparable with the results of Youssef et al and Chung L et al.^{13, 14} The cord oedema is due to the dissection around the cord while separating the sac from the cord in an indirect inguinal hernia. It may be due to oedema or hematoma of the inguinal canal that tracks inferomedially to the scrotum in a dependent manner. Results of incidence of surgical site infections, seroma, chronic groin pain, foreign body sensation, and recurrence rate post-operatively in the present study of the Desarda technique of inguinal hernia repair were the lowest among all the studies compared and comparable with the results of Youssef et al and Chung L et al (**Table 2**).^{13, 14}

CONCLUSION

According to the current study, inguinal hernias are most frequently observed in middle-aged and older adults, with a male preponderance. Direct inguinal hernias are associated with symptoms of lower urinary tract obstruction, while indirect

inguinal hernias are more common with co-morbidities including a persistent cough. The most crucial element determining the intraoperative viability of completing Desarda repair is the presence of a healthy external oblique aponeurosis in an uncharted, virgin region. The Desarda approach results in a quicker return to basic activities and less post-operative pain. This Desarda approach eliminates alien body sensations and persistent groin pain. There are fewer post-operative problems.

AUTHOR CONTRIBUTION:

- Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatti : Study concept and design, literature search, data acquisition, analysis, interpretation of results, manuscript preparation, and manuscript editing.
- Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatti: Study concept and design, data acquisition, manuscript editing, and review.
- Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatti: Data analysis, interpretation of results, manuscript preparation, and editing.
- Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatti: Manuscript preparation, editing, and review.

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