

Original Research Article

STUDY OF DESARDA TECHNIQUE OF INGUINAL HERNIA REPAIR

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Received : 17/06/2025
Received in revised form : 07/08/2025
Accepted : 27/08/2025

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DOI: 10.70034/ijmedph.2025.4.30

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (4); 165-169

ABSTRACT

Background: The present study attempts to study the tissue based Desarda technique in terms of postoperative pain, complications and recurrence, with the study of Desarda technique done worldwide.

Materials and Methods: This is a prospective and interventional study examining Desarda's inguinal hernia repair technique in adults. Patients fulfilling the inclusion criteria were taken in the study. Clinical profile of the participants and postoperative factors like postoperative pain, time required to return to basic activity, time required to return to home activity, incidence of chronic groin pain, and recurrence rate were studied.

Results: The peak age incidence of hernia was seen in the age group of 51-60 years [23.33%] followed by 31-40 years [20.66%]. There was a male preponderance in the total number of cases. Right sided hernia patients were commonly seen. Around 82% of patients had an indirect type of inguinal hernia, which was dominant in the group. 21.66% were chronic smokers and 12.5% patients had chronic cough in this group. Hypertension, diabetes, and urinary obstructive symptoms were seen in 34.16% 14.16% and 18.3% patients. The mean operative time was 60 Min [40-80min]. Post-operative pain score according to visual analogue scale on Day 1, 7 and 30 was 3.35, 0.95 and 0.008, respectively. Time taken to return to basic activities was 24 hours which is significantly less. Out of 120 patients, cord oedema [5%] was commonly seen complication following seroma [2.5%], surgical site infection.

Conclusion: Desarda's inguinal hernia repair technique can be considered in adults with a lesser complication rate.

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

INTRODUCTION

One of the most frequent surgical issues that surgeons around the world deal with is inguinal hernias.^[1] Given the prevalence of hernia cases, this condition continues to be a significant medical concern and is currently the most developing area of surgery for improving the outcome of inguinal hernia repair. Inguinal hernias account for 80% of all hernia operations performed on adults.^[2]

Before the European Hernia Society (EHS) released its recommendations in 2009, which were based on a review of the literature and the findings of clinical trials, there were no documented surgical guidelines for treating hernias.^[3] Adults with primary inguinal hernias should be treated with mesh-based procedures, specifically the Lichtenstein technique,

per EHS recommendations.^[4,5] Prior attempts to only locate the flaw and stitch it produced unacceptably high rates of recurrence. By placing mesh over the hernia defect or, in the case of laparoscopic surgery, behind the hernia defect, modern procedures have improved the recurrence rates.^[6,7] Numerous researchers are searching for novel hernia repair methods as a result of the documented rates of complications and postoperative impairment.^[8,9] The Desarda approach, which was introduced in 2011 and is now a novel surgical alternative for tissue-based groin hernia repair, was developed by Dr. Mohan Desarda of Pune, India.^[10,12] With some facilities reporting failure rates of less than 1%, these advances have been most noticeable in hernia surgery centers.^[11,12] The Dr. Desarda claims results, which are superior or equal to Shouldice and Lichtenstein

repairs in low frequency of complications and approximately 0.2% recurrences in his studies.^[12] Few studies have been conducted in this region to study the Desarda technique for performing hernia repair. Hence, we tried to study this newer technique with following objectives: to study the clinical profile of patients, which includes age, sex, type of hernia and associated comorbidities. To study the feasibility of the Desarda technique for performing hernia repair. And to study postoperative factors like postoperative pain, time required to return back to basic activity, time required to return back to home activity, incidence of chronic groin pain and recurrence rate.

MATERIALS AND METHODS

This is a prospective and interventional study carried out in the Government college and hospital from June 2015 to November 2017 on Desarda's inguinal hernia repair technique in adults. Institutional ethical committee approval was taken before the study was conducted. A total of 120 cases were included in this study after confirmation of diagnosis and proper, valid written informed consent.

Inclusion Criteria:

1. Patients aged 18years 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

Data will be gathered from all patients, regardless of gender, background, or socioeconomic level, who are admitted and operated on for inguinal hernias using Desarda's surgical procedure through the surgical outpatient department, casualties, and our

Government college and medical facility. The patient's complete medical history will be recorded in the case proforma. When a patient exhibits symptoms of BPH and an enlarged prostate on digital rectal examination, several tests will be performed, including complete hemogram, KFT, LFT, blood group, HIV, HBsAg, chest x-ray to check for chest infections, and USG KUB [prostate]. The surgical technique will be explained to the patient, and signed agreement will be obtained.

Data collection postoperatively

Patients were called up for follow-up on up 7th day, 30th day, 3rd month, 6th month, 1 year, and till 2 years after the operation for data collection and to note the complications and recurrence of hernia. Routine administration of one dose of diclofenac injection was given postoperatively. Tab diclofenac was given to all patients thrice a day for 3 days initially and thereafter on the patients' demand. Pain score was assessed on the 1st day, 7th day and 30th day postoperatively using a Visual analogue scale.

Statistical Analysis

Continuous variables were presented as Mean, and Categorical variables were expressed in actual numbers and percentages.

RESULTS

In the present study of Desarda technique of inguinal hernia repair total 120 cases were studied, maximum cases (23.33%,)were seen in the age group of 51-60years, followed by 31-40years age group (20.66%) and 41-50 years (19.16%), 61-70 years (18.18%) age group, 21-30 years (14.8%), 71-80 years (4.96%) and least affected age group is 18-20 years with no cases are seen. All 120 cases were male patients. Not a single case of female patient seen. A total 124 cases were enrolled for Desarda procedure, but intra operatively found that 4 cases were not feasible for Desarda technique because of very thin, teared out external oblique aponeurosis. Hence, 4 cases were converted to Lichtenstein mesh repair. Only 120 cases were included in this study (table 1).

Table 1: Clinical profile of study participants

Parameter	No. Of patients	Percent
Age in years		
18 –20	00	0%
21 –30	17	14.88%
31 –40	25	20.66%
41 –50	23	19.16%
51 –60	28	23.33%
61 –70	21	18.18%
71 –80	06	4.96%
81 and above	00	0%
Gender		
Male	120	100%
Female	00	0%
Feasibility		
Yes	120	96.77%
No	04	3.22%
Side of hernia		
Right	69	57.5%
Left	46	38.33%

Bilateral	05	04.6%
Type of hernia	82	68.33%
Indirect	36	30%
Direct	02	1.6%
Pantaloon		
Comorbid conditions	41(120)	34.16%
Hypertension	26(120)	21.66%
Chronic smoking	22(120)	18.3%
Urinary obstructive symptoms		
Diabetes mellitus	17(120)	14.16%
Chronic cough	15(120)	12.5%
Pulmonary TB	NIL(120)	0%

In the present study of Desarda technique of inguinal hernia repair, among the 120 cases, 68.33%,^[82] cases were indirect type, 30%,^[36] cases were direct type and 1.6%^[02] cases were pantaloon type of inguinal hernia were seen. Among 120 cases, hypertension was seen in 34.16%,^[41] cases, 21.66%,^[26] cases were chronic smoker, 18.3%,^[22] cases were having urinary obstructive symptoms, 14.16%,^[17] cases were

diabetic on medication and 12.5%,^[15] cases had chronic cough (table 1).

Patients having benign prostatomegaly were treated conservatively with tablet Tamsulosin 0.4mg OD for 3 months, after symptoms get relived then posted for surgery. Patients with chronic cough were evaluated properly and get treated, then posted them for surgery and advise them to avoid smoking post-operatively.

Table 2: Operative time, post operative pain scores and time taken to return back to basic activities

Variables	Mean values
Operative time in min	60 min [35-85 min]
Post operative pain score [visual analogue scale]	
Post-operative Day-1	3.3
Post-operative Day-7	0.9
Post-operative Day-30	0.008
Time taken to return back to basic activities	24 hours

In the present study of Desarda technique of inguinal hernia repair the mean operative time observed in Desarda technique was 60Min. The Post-operative pain scores were analysed using the Visual analogue scale. On Day 1 the mean post-operative pain score

was 3.3, On Day 7 the mean post-operative pain score was 0.9 and On Day 30 the mean post-operative pain score was 0.008. And, the mean time taken to return back to basic activities was 24 hours (table 2).

Table 3: Complication among the participants

Complications	No. Of patients	Percent
Early complication [<30days]		
Cord oedema	06	5%
Fever	03	2.5%
Surgical site infection	02	1.66%
Seroma	03	2.5%
Late complications [>30 days]		
Chronic groin pain	0	0%
Foreign body sensation	0	0%
Recurrence	01	0.83%

Among 120 cases operated for Desarda hernia repair the following complications were seen, cord oedema in 5% of cases and managed them conservatively by anti-inflammatory medication for 3 days. Fever without any wound infection in 2.5% of cases and subsequently got relieved with anti-pyretic medication. Surgical site infection in 1.6% of cases and managed them conservatively by clean and dressing for 3 days. Seroma in 2.5% of cases and treated by aspiration. There was one [0.8%] patient had recurrence after follow up period of 18months. He was later diagnosed as a case of Benign Prostate Hypertrophy and then he was referred for urology and got treated surgically then patient was operated for recurrent hernia by Lichtenstein mesh repair. In this study not a single case had a chronic groin pain and foreign body sensation (table 3).

DISCUSSION

Table 4 and table 5 shows the comparison of present study findings with other two studies.

In the present study, the mean age of 120 cases was 48 years. Youssef et al in 2015 and B.S.Gedam et al in 2017, in their study, the mean age was 46 years and 50 years respectively.

In the present study, all cases were male. Youssef et al in 2015, in their study, the incidence of male patients was 95.83% and female patients was 4.16%. B.S.Gedam et al in 2017, in their study, the incidence of male patients was 98.9% and female incidence was 1.08%.

In present study among 120 cases, 57.5% [69] cases had right sided inguinal hernia, 38.33%[46] cases had

left sided inguinal hernia. Youssef et al in 2015, in their study, among 71 cases 69% of cases had right sided inguinal hernia and 31% of cases had left sided inguinal hernia. B.S.Gedam et al in 2017, in their study he reported, among 92 cases 66.30% of cases had right sided inguinal hernia and 33.69% of cases had left sided inguinal hernia.

In the present study the incidence of indirect inguinal hernia was 68.33%, the incidence of direct inguinal hernia was 30%. Yousseff et al in 2015, in their study reported that, 22.53% of cases were direct type and 77.46% of cases were indirect type seen. B.S.Gedam et al in 2017, in their study reported that, 34.78% of cases were direct type and 65.21% of cases were indirect type seen.

In the present study, the incidence of cases of hypertension was 34.16%. Youssef et al in 2015, in their study the incidence of hypertension in inguinal

hernia patients was 35.2%. B.S.Gedam et al in 2017, in their study, the incidence of hypertension in inguinal hernia patients was 33.69%.

In the present study the incidence of diabetes in inguinal hernia patients was 14.16%. Youssef et al in 2015, in their study they reported, the incidence of diabetes was 5.6%. B.S.Gedam et al in 2017, in their study he reported, the incidence of diabetes was 21.73%.

In the present study the incidence of smoking and chronic cases was 21.66% and 12.5% respectively. The mean operative time taken for single sided inguinal hernia repair by Desarda technique was 60 min. The mean post-operative pain score of day 1 was 3.3, day 7 was 0.9 and day 30 was 0.008. in studies done by Youssef et al and B.S.Gedam et al, similar findings were seen.

Table 4: Comparison of present study findings with other studies

S.No	Factor	Youssef et al ¹³	B.S.Gedam et al ¹⁴	Present study
1	Age Incidence	46	50	48
2	Gender <ul style="list-style-type: none"> Male Female 	95.8% 4.2%	98.9% 1.08%	100% 0
3	Side factor <ul style="list-style-type: none"> Right Left 	69% 31%	66.3% 33.6%	57.5% 38.3%
4	Type <ul style="list-style-type: none"> Direct Indirect 	22.53% 77.46%	34.78% 68.33%	30% 68%
5	Hypertension	35.2%	33.16%	34.16%
6	Diabetes	5.6%	21.73%	14.16%
7	Smoking and chronic cough	5.6%	16.30%	12.5%
8	Operative time	59 Min	73 Min	60 Min
9	Post-operative pain score <ul style="list-style-type: none"> Day 1 Day 7 Day 30 	2.4 1.4 0.1	2.4 0.2 0.01	3.3 0.9 0.008
10	Return to basic activities	3.9 days	2.5 days	24 Hours

Table 5: Comparison of present study complications with other studies

S.no	Complications	Youssef et al ¹³	B.S. Gedam 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%

CONCLUSION

From this present study, it can be concluded that Inguinal hernia is most commonly seen in the middle and old population with male preponderance. Indirect type of inguinal hernia is more common with associated co-morbidities like chronic cough and direct hernia with lower urinary tract obstructive symptoms. A healthy external oblique aponeurosis in a virgin unexplored area is most important factor deciding intraoperative feasibility for performing Desarda reapiir. Post-operative pain is less and not longer, early return back to basic activities is seen with Desarda technique. No chronic groin pain and

foreign body sensation with this Desarda technique. Post-operative complications are less.

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 Bhavikatt: Study concept and design, data acquisition, manuscript editing, and review.

Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatt: Data analysis, interpretation of results, manuscript preparation, and editing.

Dr. Manjunatha, Dr. Abhijit S Medikeri, Dr. Kumar Avinash Bhavikatt: Manuscript preparation, editing, and review.

Conflict of Interest: There are no conflicts of interest among the authors.

Financial Support: None

Acknowledgment: The authors would like to thank all the participants.

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