

Outcome of Desarda Technique in Inguinal Hernia Repair

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ABSTRACT

Objective: The objective of this study is to evaluate the short term outcome of Desarda technique in inguinal herniorrhaphy in terms of duration of surgery and post-operative pain.

Material and methods: This case series study was conducted at Department of Surgery, Lahore General Hospital, Lahore from June 2021 to December 2021. Total 150 male patients of inguinal hernia having age 16-50 years were selected. Duration of surgery and post-operative pain was studied.

Results: The mean age of patients was 34.86 ± 9.38 years with range of 31.00 years. The minimum and maximum age was 19.00 and 50.00 years respectively. The mean surgery time was 48.92 ± 11.13 minutes with minimum and maximum of 30 and 70 minutes. There were 11 (7.33%) patients who had no pain, 32 (21.33%) had mild, 91 (60.67%) had moderate and 16 (10.67%) had severe pain at day 1. At day 2, no pain was found in 53 (35.33%) patients. A majority of patients 73 (48.67%) were suffering from mild pain whereas moderate and severe pain was seen in 22 (14.67%) and 2 (1.33%) patients respectively.

Conclusion: Desarda repair is an acceptable alternative technique for effective repair of inguinal hernia with comparable operative time and postoperative pain as observed in this study that there is minimal duration of surgery and less post operative pain especially at day 2. The technique can be safely employed to reduce the hospital burden and morbidity related to post-operative pain following operative repair of inguinal hernia. The study will help to encourage further research on this technique as there is only sparse data available in the published local literature to date.

Keywords: Inguinal hernia, Herniorrhaphy, Desarda, duration of surgery, postoperative pain.

INTRODUCTION

Correction of inguinal hernias (IH) is one of the frequently performed surgeries in elective surgical procedures.^{1,2} Men are thought to have a lifetime risk of inguinal hernia of 27% and women of 3%.³ Even though tension-free IH repair with mesh is the norm in nations with high standards of living, its use is still uncommon in nations with low standards of living due to the high initial cost and postoperative morbidity associated with the polypropylene and other suggested meshes used in the repair. For the correction of primary inguinal hernias, tissue-dependent procedures (herniorrhaphy) are still accepted as suitable.⁴

The Desarda method of inguinal hernia repair offers a fresh idea for repair while preserving the inguinal canal's physiology without a mesh. Inguinal hernia repairs with this method are less expensive and devoid of difficulties brought on by foreign bodies.⁵ In their study on Desarda's repair published in 2016, Roy and coworkers found that the majority of patients (168/168; 91.30%) experienced only minor pain on the third post-operative day and only 73/73 (39.67%; VAS) individuals experienced only mild pain on the 1st post-operative day (VAS).⁵ According to Bhatti and colleagues, Desarda's technique took 28.90 ± 5.57 minutes to complete.⁷

The rationale of this study is to evaluate the short term outcome of Desarda technique in inguinal herniorrhaphy to analyze the duration of surgery and post-operative pain until discharge from the hospital. Desarda repair can help to reduce the hospital burden due to pain and mesh-related complications. The study will help to encourage further research as there is sparse data available on this effective technique in the published national literature.

MATERIAL AND METHODS

This case series study was conducted at Department of Surgery, Lahore General Hospital, Lahore from June 2021 to December 2021. Total 150 male patients of inguinal hernia having age 16-50 years were selected. Patients with complicated hernia, recurrent hernia, patients with renal failure, patients having diabetes (Blood sugar random ≥ 200 mg/dl, Blood sugar fasting ≥ 125 mg/dl) and obese patients were excluded from the study. Demographic data

was obtained on study proforma. All procedures were performed under spinal anaesthesia by the same surgical team to avoid technical bias. Desarda technique was used in all patients. The technique utilized a 1- to 2-cm strip of external oblique aponeurosis was used to strengthen the posterior wall as described by Desarda.¹ Duration of surgery and post-operative pain until the time of discharge were noted. Patients with significant postoperative pain (VAS 5-10) were treated by standard medication.

The data was analyzed through SPSS version 24. Quantitative data like age and duration of surgery was presented in form of mean \pm S.D. Qualitative data like gender and pain (no, mild, moderate and severe) was presented as frequency (percentage). Data was stratified for age, duration of disease and educational status to address effect modifiers. Post stratified Chi-square test was used for pain and student t-test was used for duration of surgery among stratified groups considering p-value ≤ 0.05 as significant.

RESULTS

The mean age of patients was 34.86 ± 9.38 years with range of 31.00 years. The minimum and maximum age was 19.00 and 50.00 years respectively. The mean surgery time was 48.92 ± 11.13 minutes with minimum and maximum of 30 and 70 minutes. There were 11 (7.33%) patients who had no pain, 32 (21.33%) had mild, 91 (60.67%) had moderate and 16 (10.67%) had severe pain at day 1. Figure-1 At day 2, no pain was found in 53 (35.33%) patients. A majority of patients 73 (48.67%) were suffering from mild pain whereas moderate and severe pain was seen in 22 (14.67%) and 2 (1.33%) patients respectively. Figure-2

Two age groups 16-30 years and 31-50 years were created. Total 61 (40.7%) patients belonged to age group 16-30 years and 89 (59.3%) patients belonged to age group 31-50 years. At post-operative day 1, in age group 16-30 years, total 4 (36.4%) patients reported no pain followed by mild pain in 14 (43.8%), moderate pain in 39 (42.9%) and severe pain in 4 (25.0%) patients. In age group 31-50 years, at 1st post-operative day, total 7 (63.6%) patients reported no pain followed by mild pain in 18 (56.2%), moderate pain 52 (57.1%) and severe pain in 12 (75%) patients.

Insignificant (P = 0.568) association of pain severity with age groups was noted.

At 2nd post-operative day, in age group 16-30 years, total 17 (32.1%) patients reported no pain followed by mild pain in 33 (45.2%), moderate pain 10 (45.5%) and severe pain in 1 (50%) patients. In age group 31-50 years, total 36 (67.9%) patient reported no pain, followed by mild pain in 40 (54.8%), moderate pain in 12 (54.5%) and severe pain in 1 (50%) patient. No association of pain severity with age group was seen (P = 0.471). (Table 1)

Total 81 (54%) patients belonged to 6-11 months duration disease group while 69 (46%) patients belonged to ≥ 12 months duration of disease group. At 1st post-operative day, in 6-11 months duration of disease group, 7 (63.6%) patients reported no pain followed by mild pain in 19 (59.4%), moderate 45 (49.5%) and severe pain in 10 (62.5%) patients. In ≥ 12 months duration of disease group, total 4 (36.64%) patients reported no pain followed by mild pain in 13 (40.6%), moderate pain 46 (50.5%) patients and severe pain in 6 (37.5%) patients. Association of pain severity with duration of disease was not significant (P = 0.571)

At 2nd post-operative day, in 6-11 months duration of disease group, total 26 (49.1%) patients reported no pain followed by mild pain 40 (54.8%), moderate 13 (59.1%) and severe in 1 (100%) patients. In ≥ 12 months duration group, total 27 (50.9%) patients reported no pain, 33 (45.2%) mild pain, 9 (40.9%) moderate pain and no patient found with severe pain. There was no association was detected between severity of pain and duration of disease (P = 0.480). (Table 2)

Total 88 (58.7%) patients were below matric and 62 (41.3%) patients were matric or above. At post-operative day 1, in below metric group, no pain was reported by 7 (63.6%) patients, moderate in 21 (65.6%), moderate in 51 (56.0%) and severe pain in 9 (56.2%) patients. In matric or above group, total 4 (36.4%) patients reported no pain followed by mild in 11 (34.4%), moderate in 40 (44%) and severe pain in 7 (43.8%) patients. Association of pain severity with education status was not significant (P = 0.79).

At 2nd post-operative day, total 31 (58.5%) patients reported no pain, 41 (56.2%) mild pain, 16 (72.7%) moderate pain and no patient reported severe pain. In matric or above group, no pain was reported by 22 (41.5%) patients followed by mild 32 (43.8%), moderate 6 (27.3%) and severe in 2 (100%) patients. Association of pain severity with educational status was not significant (P = 0.185). (Table 3)

In age group 16-30 years, mean operative time was 48.77 ± 11.50 minute while in age group 31-50 years was 49.22 ± 10.93 minutes. Difference of mean operative time between age groups was not significant (P = 0.892). (Table 4)

Mean operative time was 48.09 ± 11.89 minutes and 49.88 ± 10.17 minutes respectively in 6-11 months and ≥12 months duration of disease groups. Difference of mean operative time was not significant (P = 0.329). (Table 5)

In below matric patients, mean operative time was 50.60 ± 11.38 minutes while in matric or above group, mean operative time was 46.53 ± 10.39 minutes. Difference of mean pain score between below matric and matric or above group was significant (P = 0.027). (Table 6)

Figure-1: Severity of pain at day 1

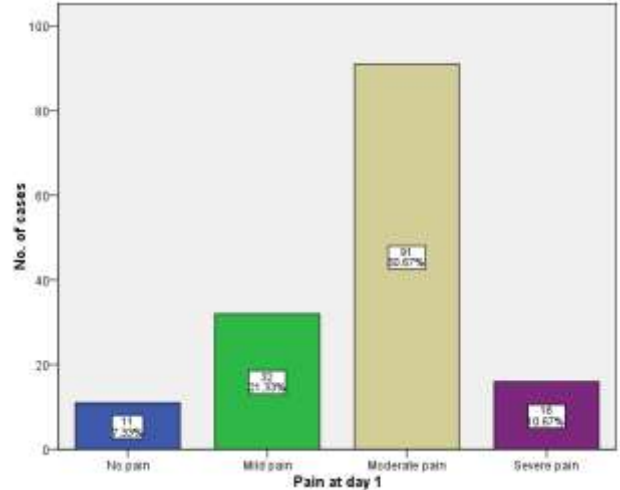


Figure-2: Severity of pain at day 2

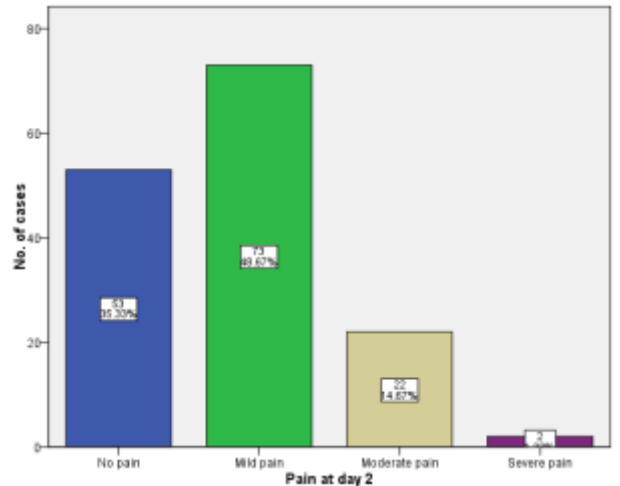


Table-1: Comparison of Age groups with severity of pain at day 1 & 2

		Pain severity at day 1 (P = 0.568)				Total
		No pain	Mild	Moderate	Severe	
Age(years)	16-30	4	14	39	4	61
		36.4%	43.8%	42.9%	25.0%	40.7%
Age(years)	31-50	7	18	52	12	89
		63.6%	56.2%	57.1%	75.0%	59.3%
Total		11	32	91	16	150
		100.0%	100.0%	100.0%	100.0%	100.0%
		Pain severity at day 2 (P = 0.471)				Total
		No pain	Mild	Moderate	Severe	
Age(years)	16-30	17	33	10	1	61
		32.1%	45.2%	45.5%	50.0%	40.7%
Age(years)	31-50	36	40	12	1	89
		67.9%	54.8%	54.5%	50.0%	59.3%
Total		53	73	22	2	150

		Pain severity at day 1 (P = 0.568)				Total
		No pain	Mild	Moderate	Severe	
Age(years)	16-30	4 36.4%	14 43.8%	39 42.9%	4 25.0%	61 40.7%
	31-50	7 63.6%	18 56.2%	52 57.1%	12 75.0%	89 59.3%
Total		11 100.0%	32 100.0%	91 100.0%	16 100.0%	150 100.0%

Table-2: Comparison of Duration of disease with pain At Day 1 & 2

		Pain severity at day 1 (P = 0.571)				Total
		No pain	Mild	Moderate	Severe	
Duration of disease	6-11 months	7 63.6%	19 59.4%	45 49.5%	10 62.5%	81 54.0%
	12 or more	4 36.4%	13 40.6%	46 50.5%	6 37.5%	69 46.0%
Total		11 100.0%	32 100.0%	91 100.0%	16 100.0%	150 100.0%
		Pain severity at day 2 (P = 0.480)				Total
		No pain	Mild	Moderate	Severe	
Duration of disease	6-11 months	26 49.1%	40 54.8%	13 59.1%	2 100.0%	81 54.0%
	12 or more	27 50.9%	33 45.2%	9 40.9%	0 .0%	69 46.0%
Total		53 100.0%	73 100.0%	22 100.0%	2 100.0%	150 100.0%

Table-3: Comparison of Educational Status with Pain at Day 1 & 2

		Pain severity at day 1 (P = 0.79)				Total
		No pain	Mild	Moderate	Severe	
Educational status	Below Matric	7 63.6%	21 65.6%	51 56.0%	9 56.2%	88 58.7%
	Matric or more	4 36.4%	11 34.4%	40 44.0%	7 43.8%	62 41.3%
Total		11 100.0%	32 100.0%	91 100.0%	16 100.0%	150 100.0%
		Pain severity at day 2 (P = 0.185)				Total
		No pain	Mild	Moderate	Severe	
Educational status	Below Matric	31 58.5%	41 56.2%	16 72.7%	0 .0%	88 58.7%
	Matric or more	22 41.5%	32 43.8%	6 27.3%	2 100.0%	62 41.3%
Total		53 100.0%	73 100.0%	22 100.0%	2 100.0%	150 100.0%

Table-4: Comparison of mean operative time with Age groups

	Age(years)	Mean	S.D	p-value
Operative time (minutes)	16-30	48.77	11.50	0.892
	31-50	49.22	10.93	

Table-5: Comparison of mean operative time with duration of disease

	Duration of disease	Mean	S.D	p-value
Operative time (minutes)	6-11 months	48.09	11.89	0.329
	12 or more	49.88	10.17	

Table-6: Comparison of Operative Time with Educational Status

	Educational status	Mean	S.D	p-value
Operative time (minutes)	Below Matric	50.60	11.38	0.027
	Matric or more	46.53	10.39	

DISCUSSION

The objective of this study is to evaluate the short term outcome of Desarda technique in inguinal herniorrhaphy in terms of duration of surgery and post-operative pain.

In 2016 a longitudinal study was performed to observe the outcome of inguinal hernia repair by Desarda method as an alternative to most popular Lichtenstein repair. Mean age was 45.42 years, SD ±10.08.⁸ The mean age in current study was lesser when compared with above cited study. They further reported that at 1st post-operative day, total 73 patients found with mild pain and 98.37% patients had no complaint of chronic pain. We measured pain at day 1 and day 2 as there were 11 (7.33%) patients who had no pain, 32 (21.33%) had mild, 91 (60.67%) had moderate and 16 (10.67%) had severe pain at day 1. At day 2, no pain was found in 53 (35.33%) patients. A majority of patients 73 (48.67%) were suffering from mild pain whereas moderate and severe pain was seen in 22 (14.67%) and 2 (1.33%) patients respectively. The pain at day 1 and 2 are almost similar with above study. In 2017, a study was done to compare the tissue based Desarda technique with standard Lichtenstein repair in treatment of primary inguinal hernia. Operative time was 72.60 ± 13.89 min in desarda repair.⁹ In this study we had shorter operative time as 48.92 ± 11.13 minutes with minimum and maximum of 30 and 70 minutes. The findings are comparable to above study. Most

recently another study is conducted to record and evaluate the short-term outcome of inguinal hernia repair with Desarda's technique. Total 180 patients of inguinal hernia were recruited. Chronic pain was recorded in 5 cases (2.8%).¹⁰ We could not follow our cases as we intended to report short outcome so chronic pain was not measured in our patients. Likewise in 2015, a prospective study was conducted at Jinnah Hospital Lahore. The study has included male patients with unilateral inguinal hernia using Desarda repair. The study result has illustrated that total number of cases was 50. Mean age was 49.9 ± 13.4 years. Patients with right sided inguinal hernia were 62%, while 38% with left. A total of 8% chronic pain and none developed recurrence. The study has concluded that Desarda repair is safe and effective for inguinal hernia with very low rate of recurrence.¹¹ In addition to other studies another retrospective study by Desarda et al was performed to describe the experience with Desarda technique. The study result has reported that no patient has severe pain postoperatively and nearly all patients ($n=396$) were free of pain and discomfort after the second postoperative day. Hence the study has concluded that the operation is easy to do, does not require mesh, and gives results equivalent to those reported for mesh. It is therefore a good option for repair of an inguinal hernia.¹² These findings regarding severity of pain are almost similar to our study. In another study of Desarda et al conducted a study in 2001, on new technique to strengthen the posterior wall of the inguinal canal in all types of inguinal hernias is described. The study result has demonstrated that total of 400 patients have been operated on from 1983 to 1999 and follow up by physical examination was carried out. (Eighty patients have been followed up for more than 10 years.) The postoperative period was comfortable with a hospital stay of 2–3 days and a return to work within 1–2 weeks. Recurrence was seen in only one case and haematocoele in one case.¹ Roy and colleagues in their study on Desarda's repair in 2016 reported that on first post-operative day, 73 (39.67%) patients felt only mild pain (VAS) [while in this study mild pain was in 22% that lower to above study] and on third post-operative day majority 168 (91.30%) patients felt only mild pain (VAS).⁵ While in this study 32 (21.33%) had mild pain that lower to above study. Bhatti and colleagues reported duration of surgery with Desarda's technique to be 28.90 ± 5.57 minutes.⁷ Our duration of surgery was larger than study of Bhatti and colleagues.⁷ This operation is simple to perform, does not require mesh or extensive dissection and has produced excellent results. Therefore it is a good alternative to mesh or other open or laparoscopic repairs.¹

CONCLUSION

Desarda repair is an acceptable alternative technique for effective repair of inguinal hernia with comparable operative time and postoperative pain as observed in the study that there is minimal duration of surgery and less post operative pain especially at day 2. The technique can be safely employed to reduce the hospital burden and morbidity related to post-operative pain following operative repair of inguinal hernia. The study will help to encourage further research on this technique as there is only sparse data available in the published local literature to date.

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