



COMPARATIVE STUDY OF OUTCOMES OF LICHTENSTEIN (MESH BASED) REPAIR VERSUS DESARDA (TISSUE BASED) IN PATIENTS WITH INGUINAL HERNIA

General Surgery

Dr. Varudu Lakshmi Prasanna PG Resident, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka.

Dr. Kiran Kumar K. M Professor, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka.

Dr. Amruth Sagar K.R Assistant Professor, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka.

Dr. Kakul Kalita Senior Resident, Department of General Surgery, Sri Siddhartha Medical College, Tumkur, Karnataka.

ABSTRACT

Inguinal hernia is a very common surgical problem. Inguinal hernia forms around 75% of abdominal wall hernias with lifetime risk. European hernia society published guidelines in 2009 for hernia repair. They recommended Lichtenstein or laparoscopic methods for repair of primary inguinal hernia in adult males. The Lichtenstein method is currently the most popular open technique with recurrence rates of around 4% Desarda, in 2001 has described a new method which does not require prosthetic mesh, and easy to learn. The author claims results, which are superior or equal to Shouldice and Lichtenstein repairs, with 1.8% complication rate and 0.2% recurrence. **Material And Methods:** Prospective, observational study conducted on inguinal hernia patients from 2022 to 2024 on 70 patients, 35 in each group at SRI SIDDHARTHA MEDICAL COLLEGE AND RESEARCH INSTITUTE, TUMKUR. **Results:** There was no significant difference in the demographic details, mean of VAS-Pain at 1 month, Pain at 3 month between two group, there is significant difference in the mean of operative time, VAS – pain on 2nd day, pain at 1st week, mean of Duration of Hospital stay (in days), Return to normal activity (In days). **Conclusion:** Incidence of hernia was not associated with any of the occupation among our study population. The average duration of the procedure, the duration of hospitalization, the time taken for returning to daily routine were significantly lesser among Desarda group. The incidence of post operative complications did not have much significant difference. Hence, we conclude that Desarda technique for inguinal repair is comparatively better than the Lichtenstein.

KEYWORDS

Inguinal hernia, desarda, Lichtenstein

INTRODUCTION

An inguinal hernia is a protrusion of the content of the abdominal cavity or pre-peritoneal fat through a defect in the inguinal area.

European hernia society. recommended Lichtenstein or laparoscopic methods for repair of primary inguinal hernia in adult males. The Lichtenstein method is currently the most popular open mesh repair with recurrence rates of around 4% in long term follow up^{1,2}. It uses mesh which has complications like chronic groin pain, foreign body sensations, surgical site infection etc. which interferes with daily patient activities^{3,4}. Mesh migration, rejection has also been reported^{5,6}. Desarda, in 2001 has described a new method. It does not require prosthetic mesh, complicated dissection or suturing, an undetached strip of external oblique aponeurosis is stitched to posterior wall to strengthen it. It is easy to learn. It has 1.8% complication rate and 0.2% recurrence⁷. Desarda repair is based on concept of providing strong, mobile and physiologically dynamic posterior inguinal wall without use of any prosthesis^{8,11}.

AIMS AND OBJECTIVES:

- To compare operative timings of both groups – Lichtenstein and Desarda.
- To study the complications of hernia repair like hematoma, seroma, postoperative pain, surgical site infection, in both groups, mesh related complications in Lichtenstein – meshoma, mesh displacement.
- To assess the time required to resume basic activities in a day-to-day life in both groups.

MATERIALS AND METHODS

A Prospective longitudinal study was conducted for duration of 24 months on patients admitted with Inguinal Hernia in all units in surgery department at Sri Siddhartha Medical College and Hospital, Tumkur.

Inclusion Criteria:

- Inguinal hernia (including direct and indirect and bilateral)
- Adult Male (age >18yrs)
- External aponeurosis in good condition (intraoperative assessment).
- Complicated inguinal hernia

Exclusion Criteria:

- Women.
- Patients suffering from serious life-threatening illness.
- Untreated urinary obstruction, cough, or constipation

METHODOLOGY

After obtaining the ethical committee clearance, 70 patients 35 in each group have been recruited.

Admitted patients are selected for Lichtenstein and Desarda repair alternatively. In Bilateral cases patient is given choice to select whichever side he wants to get it done. All surgeries were performed under spinal anaesthesia.

The operative time in the study was taken as the duration of actual repair from the first stitch to the pubic tubercle to time of placement of the last stitch of the repair (before closure of external oblique aponeurosis).

RESULTS

Table 1: Distribution Of Subjects According To Demographic Details Over Groups

Variable	Sub Category	Groups	
		Desarda	Lichtenstein
Age	Mean $\pm$ SD	47.1 $\pm$ 14.7	61.7 $\pm$ 13.8
	Median (Min, Max)	48 (26, 84)	65 (29, 82)
Occupation	Butcher	1 (2.9%)	0
	Carpenter	2 (5.7%)	1 (2.9%)
	Daily labour	1 (2.9%)	2 (5.7%)
	Daily wager	4 (11.4%)	3 (8.6%)
	Driver	4 (11.4%)	1 (2.9%)
	Electrician	1 (2.9%)	7 (20%)
	Framer	8 (22.9%)	1 (2.9%)
	Painter	3 (8.6%)	4 (11.4%)
	Plumber	3 (8.6%)	2 (5.7%)
	Shop keeper	3 (8.6%)	3 (8.6%)
	Teacher	1 (2.9%)	0
	Unemployed	3 (8.6%)	10 (28.6%)

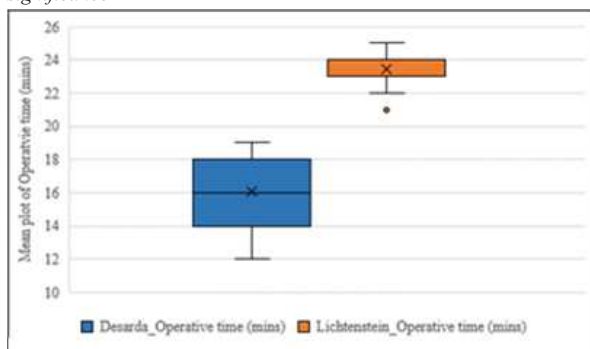
	Vegetable vendor	1 (2.9%)	1 (2.9%)
Diagnosis	B/L Direct inguinal hernia (Left)	1 (2.9%)	2 (5.7%)
	B/L Direct inguinal hernia (Right)	2 (5.7%)	1 (2.9%)
	B/L indirect inguinal hernia (Left)	4 (11.4%)	2 (5.7%)
	B/L indirect inguinal hernia (Right)	2 (5.7%)	4 (11.4%)
	Left direct inguinal hernia	2 (5.7%)	12 (34.4%)
	Left indirect inguinal hernia	7 (20%)	5 (14.3%)
	Right direct inguinal hernia	5 (14.3%)	6 (17.1%)
	Right indirect inguinal hernia	12 (34.4%)	3 (8.6%)

The mean of ages was 47.1 ± 14.7 of Desarda subjects and 61.7 ± 13.8 of Lichtenstein. Majority of subjects were farmers (22.9%) in Desarda and unemployed (28.6%) in Lichtenstein. (34.4%) of subjects were diagnosed with Right indirect inguinal hernia in Desarda and (34.4%) of Lichtenstein subjects were diagnosed with Left direct inguinal hernia.

Table 2: Distribution Of Subjects According To Different Variables Over Groups.

Variable	Sub Category	Groups		p-value
		Desarda	Lichtenstein	
Operative time (mins)	Mean $\pm$ SD	16.09 ± 2.31	23.43 ± 1	<0.001* ^{MW}
	Median (Min, Max)	16 (12, 19)	23 (21, 25)	

Abbreviation: MW- Mann Whitney U test *- indicates statistical significance



Graph 1: Mean plot of operative time (mins) over groups.

Table 3: Comparison Of (VAS) Visual Analog Scale Pain Scale Between The Two Groups At Various Time Interval

VAS at various time interval	Desarda	Lichtenstein	P value
Pain on 2nd day- VAS	2.66 ± 0.639 3 (2, 4)	3.46 ± 0.505 3 (3, 4)	<0.001* ^{MW}
Pain at 1 week- VAS	1.49 ± 0.562 1 (1, 3)	2.03 ± 0.514 2 (1, 3)	<0.001* ^{MW}
Pain at 1 month- VAS	0.14 ± 0.355 0 (0, 1)	0.29 ± 0.458 0 (0, 1)	0.307 ^{MW}
Pain at 3 months- VAS	0.03 ± 0.169 0 (0, 1)	0.14 ± 0.355 0 (0, 1)	0.412 ^{MW}

It can be observed that there is significant difference in the mean of operative time, VAS – pain on 2nd day, 1st week over groups. However, no difference in mean can be observed between VAS- Pain at 1 month, 3 months over groups.

Table 4: Distribution Of Subjects According To Duration Of Hospital Stay, Return To Normal Activity Over Groups.

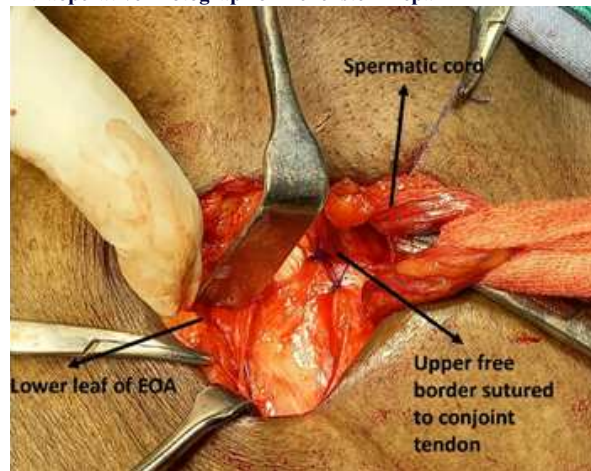
Variable	Subcategory	Groups		p-value
		Desarda	Lichtenstein	
Duration of Hospital stay (in days)	Mean $\pm$ SD	3.8 ± 0.719	4.37 ± 0.770	<0.001* ^{MW}
	Median (Min, Max)	4 (2, 5)	4 (3, 6)	
Return to normal activity (In days)	Mean $\pm$ SD	17.46 ± 3.27	20.43 ± 0.502	<0.001* ^{MW}
	Median (Min, Max)	18 (0, 19)	20 (20, 21)	

Abbreviation: MW- Mann Whitney U test, *- indicates statistical significance

It can be observed that there is significant difference in the mean of Duration of Hospital stay, Return to normal activity over groups.



Intraoperative Photograph of Lichtenstein Repair



INTRAOPERATIVE PICTURES OF DESARDA

DISCUSSION

Inguinal hernia is the commonest surgical problem observed. One of the hernia repair procedures, as described by Dr. Desarda includes the tissue-based repair in which the undetached and movable aponeurotic strip of external oblique muscle is used, which physiologically enforces the posterior wall of inguinal canal⁸.

In Lichtenstein's repair, mesh is placed between the layers of the abdominal wall. The available evidences comparing these two procedures have found the mixed outcome. Hence, we conducted the present study by including 35 patients in each group and compare outcomes of both groups.

In our study, we had included 100% male patients who had undergone hernia repair either by Desarda or by Lichtenstein. Agarwal PK et al⁹ explains that incidence of hernia would be more among males due to their involvement in more strenuous exercises and weight lifting. As, the number of unemployed patients was higher in one of the groups, we could not see the positive association of incidence of hernia with occupation.

Unlike our finding, Moghe D et al¹⁰ also observed that the average pain scales at post operative day 1, and even after 6 months had been almost same in both group while the intra-group reduction in pain scale was significantly higher.

The average age of our study population has interpreted that Desarda is better among young patients.

In our study, the average operative time in Desarda and Lichtenstein

were 16.09 ± 2.31 and 23.43 ± 1 respectively, which had significant difference (<0.001). Like our observation, Neogi P et al¹¹ also found that the operative time had significant p value.

The incidence of post-operative complications did not have any significant difference-among Desarda, seroma found in 1, hematoma in 2, surgical site infection 3, chronic groin pain in one patient. In Lichtenstein method, one each with seroma, chronic groin pain, two with hematoma. Neither group had any patients complaining of foreign body sensation.

CONCLUSION

The average duration of the procedure, the hospital stay and the time taken for returning to daily routine were significantly lesser among Desarda. In infected and strangulated cases, Desarda repair can be used effectively, as risk of mesh infection is eliminated. It Also, had the pain reduction from post-operative day 2. The incidence of post operative complications did not have much significant difference. In infected and strangulated cases, Hence, we conclude that Desarda technique for hernia repair is comparatively better than the Lichtenstein.

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