

Evaluation of Desarda versus Lichtenstein Repair for Inguinal Hernia: A Tertiary Care Teaching Hospital Based Study

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ABSTRACT

Background: An inguinal hernia is one of the most commonly encountered conditions in surgical practice with an estimated incidence of around 15% of the adult population.

Materials and Methods: 52 Patients were divided into two equal groups (26 patients for each group) according to surgical technique for inguinal hernia repair: Lichtenstein mesh-based repair (L group) or Desarda tissue-based repair (D group).

Results: As regard intraoperative or post-operative complication there were no significant differences between both groups. The operative time and hospital stay were significantly shorter in Desarda group. Return to basic activity and work activity were also significantly faster in Desarda than Lichtenstein group.

Conclusion: The Desarda repair had lower operative time, early return to basic and work activity, shorter hospital stays and less post-operative pain than Lichtenstein repair.

Keywords: Desarda Repair, Lichtenstein Repair, Hernia Repair Complications.

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INTRODUCTION

Inguinal hernia is defined as a protrusion of the contents of the abdominal cavity or preperitoneal fat through a hernia defect in the inguinal area, irrespective of whether this is preformed.¹ An inguinal hernia is one of the most commonly encountered conditions in surgical practice with an estimated incidence of around 15% of the adult population.²

Several techniques have been employed in the treatment of inguinal hernias since Bassini first described his method in 1887. The techniques range from tissue-repairs such as modified Bassini, Shouldice, Nylon-Darn, Halsted-Tanner, and McVay, to the tension-free hernioplasty that involve the use of a mesh implant over the past 20 years Hernia surgery has become increasingly more complex not only due to the introduction of novel endoscopic but also conventional, techniques.³ Desarda technique for inguinal hernia repair is a new tissue-based method with application of the external oblique muscle aponeurosis in the form of an undetached strip (which makes the posterior wall of the inguinal canal stronger) has been considered as a new method in tissue based hernia repair.⁴

Our aim was to evaluate the standard mesh-based Lichtenstein technique with the tissue-based Desarda technique in a tertiary care teaching hospital.

MATERIALS AND METHODS

This prospective, observational, randomized study was conducted at the General Surgery Department of Narayan medical college & Hospital, Jamuhar, Sasaram, Bihar, India during the period from January, 2019 to February, 2020.

Total of 52 Patients were divided into two equal groups (26 patients for each group) according to the surgical technique for inguinal hernia repair: Lichtenstein mesh-based repair (L group) or Desarda tissue-based repair (D group) according inclusion and exclusion criteria. The Ethics Committee of Narayan medical college & Hospital approved this study, and informed consent was obtained from each patient prior to surgery. All patients were given one shot of antimicrobial prophylaxis (1.0 g 1st generation cephalosporin IV 30 min before surgery). All operations were carried out under regional anesthesia The Lichtenstein tension-free mesh repair was performed as described by Amid.⁵ An 8×12 cm polypropylene mesh (Prolene; Ethicon, Somerville, NJ, USA) was trimmed to fit the inguinal floor. The mesh was sutured to the ligament of Poupart using a non-absorbable continuous 2/0 suture (Prolene; Ethicon) and secured cranially using an absorbable 2/0 suture (Maxon; Covidien, Mansfield, MA, USA). The Desarda repair was performed as it was originally described in 2001.⁶

Continuous nonabsorbable suture (2/0 Prolene; Ethicon) was used to suture the aponeurotic strip to the inguinal ligament laterally, and the strip was sutured medially to the internal oblique muscle with interrupted, absorbable sutures (2/0 Maxon; Covidien). Patients were examined by a surgical resident not involved in the study until discharge and seen during follow-up appointments at 7, 30 days, and 3, 6, 12, 24 and 36 month after surgery. Recurrences and other complications were recorded. The Pain was measured using a visual analog scale, which ranged from 0 (no pain) to 10 (maximum, unbearable pain).

Return to normal activity was defined as the patient's ability to do elementary activities (i.e., dressing, walking, bathing (basic activity) and returning to all previously performed activities (work activity). Statistical analysis was done using IBM, SPSS Statistics-22 software.

RESULTS

In the present study, 52 patients were included in this randomized, prospective observational trial with inguinal hernia fulfilled our inclusion criteria were admitted to General surgery department at Narayan medical college & Hospital, 26 underwent Desarda (D) and 26 underwent Lichtenstein repair (L). The baseline patient characteristics between the compared groups in this study are presented in Table 1. No operative or post-operative mortality was detected in this study.

Table 2 represents the intraoperative and post-operative finding. As regard intraoperative or post-operative complication there were no significant differences between both groups. The operative time and hospital stay were significantly shorter in Desarda group. Return to basic activity and work activity were also significantly faster in Desarda than Lichtenstein group.

Table 1: Shows the Patients' demographic and hernias characteristic:

Variables	No. of patients		Total (N=52)
	D group(N=26)	L group(N=26)	
Age In Years	39.24 ±10.62	42.51±12.7	40.84±11.23
Male	24(92.3%)	26(100.0%)	50(96.2%)
Female	2(7.7%)	0(0.0%)	2(3.8%)
Body Mass Index			
Normal	23(88.5%)	23(88.5%)	46(88.46%)
Overweight	2(7.7%)	2(7.7%)	4(7.7%)
Obese	1(3.8%)	1(3.8%)	2(3.8%)
Hernia site			
Right	16(61.5%)	17(65.4%)	33(63.46%)
Left	8(30.8%)	6(23.07)	14(26.9%)
Bilateral	2(7.7%)	3(11.5%)	5(9.6%)
Nyhus classification			
I	16(61.5%)	15(57.7%)	31(59.6%)
II	5(19.23%)	8(30.8%)	13(25.0%)
III(a)	3(11.53%)	2(7.7%)	5(9.6%)
III(b)	2(7.7%)	1(3.8%)	3(5.8%)

Table 2: Shows the Intraoperative and post-operative finding:

Variables	No. of patients		P value
	D group(N=26)	L group(N=26)	
Operative time	11	16	0.001
Post-operative complications	3	5	0.14
Hospital Stay	1.14	1.58	0.002
Return to basic activity	1.14	1.49	0.03
Return to work	5	7	0.001
Pain score	-	-	
24 hours	3	4	0.001
7 days	2	3	0.001
6 months	1	1	0.24
Recurrence	0	1	0.16

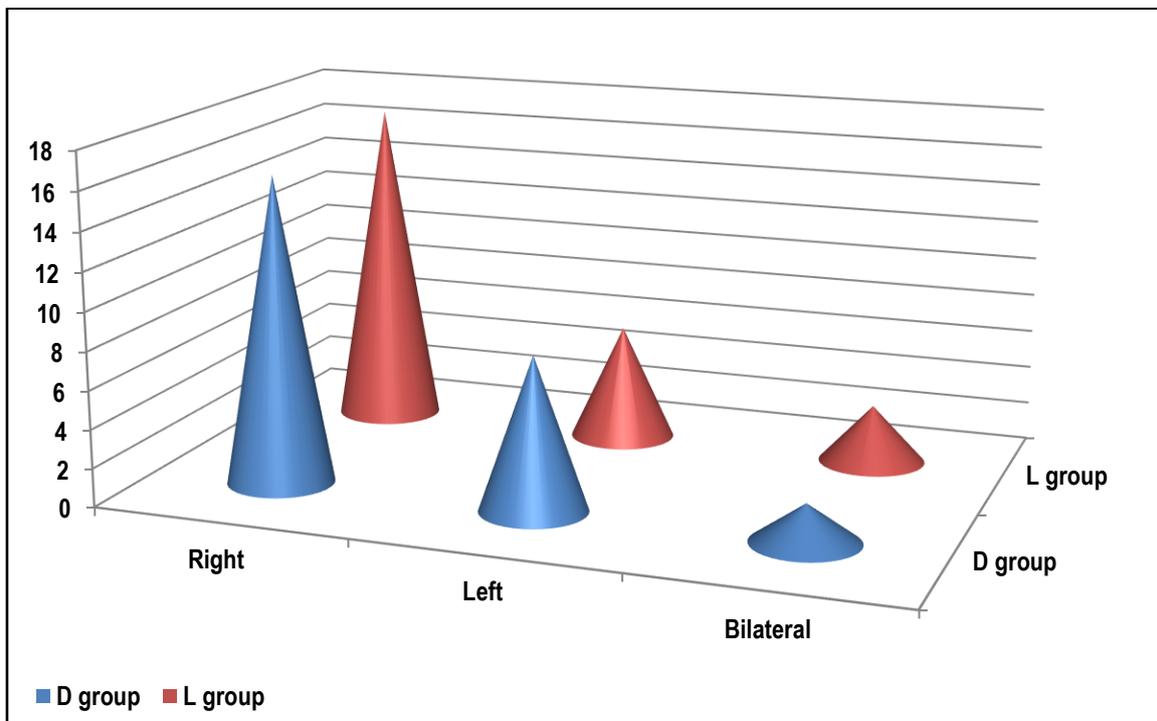


Fig. 1: Shows the different site of hernia:

DISCUSSION

Surgical repair of inguinal hernia is the most common general surgery procedure performed today.⁷ Successful surgical repair of inguinal hernia depends on a tension-free closure of hernia defect to attain the lowest possible recurrence rate.⁸ LT was deemed the gold standard for repair of inguinal hernia in adults by the American College of Surgeons.⁹

The scientific work of optimizing hernia surgery and lowering the number of complications is still in progress. The results of this study this prospective randomized trial show significant advantages of Desarda repair as it had significant shorter surgical time and shorter hospital stay than Lichtenstein repair. It also reported that Desarda repair had faster return to basic and work activity compared to Lichtenstein group. To the best of authors' knowledge there are few randomized controlled studies comparing Desarda and Lichtenstein repair. Youssef et al report that Desarda repair had Shorter operating time, early return to normal gait compared to Lichtenstein repair.⁶

Szopinski et al suggest that no significant differences in clinical outcomes between Desarda and Lichtenstein repair were observed during a 3-year follow-up.⁷ As regard recurrence rate there was one recurrence in Lichtenstein group versus no recurrence in Desarda group however, no significant recurrences between both groups was detected in present study this was comparable to the previous studies.¹⁰

Desarda, in a clinical trial comparing his technique to Lichtenstein repair reports no recurrence in his technique versus 4 recurrences in the mesh group.¹¹ The early post-operative pain (day 1 and day 7) was significantly lower in Desarda group but no significant difference between both groups after 6 months. Other studies reported lower early post-operative pain in Desarda group however, it not reach significant level.¹²

In contrast to Szopinski et al who reported higher early post-operative pain in Desarda group however in another publication by them they reported no significant difference.¹³

Desarda repair not use meshes this decrease the cost, he postulates that his repair is physiological natural and dynamic using undetached strip of external oblique aponeurosis.¹⁴ Early return to home activity in desarda repair may be attributed to less tissue handling, fewer dissections and less postoperative pain.

CONCLUSION

These findings suggest that the desarda repair had lower operative time, early return to basic and work activity, shorter hospital stays and less post-operative pain than Lichtenstein repair. The main concern in hernia surgery is to avoid recurrence.

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