



COMPARATIVE STUDY ON LICHTENSTEIN REPAIR AND DESARDA TECHNIQUE OF HERNIA AT TERTIARY CARE HOSPITAL

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ABSTRACT

Introduction- There is a paucity of data in western Rajasthan over comparison of two techniques of hernia repair. Therefore this Comparative study on Lichtenstein Repair and Desarda Technique of Hernia is being done in Department of Surgery at PBM Hospital Bikaner. **Methods-** Prospective Hospital based Comparative study was conducted on 60 patients of inguinal hernia. **Results-** There is no significance difference regarding age. There is no difference regarding location of hernia. Mean hospital stay for Desarda's group was less than 3 days, for Lichtenstein group was more than 3 days (p value < 0.0001). VAS score on 1st, 3rd, 5th postoperative days was significantly less in Desarda's group as compare to Lichtenstein group (P value < 0.0001). There is no recurrence between both groups, complications are more for Lichtenstein group than Desarda group. There were no cases of chronic groin pain lasting more than 3 months in either of the group. Return to normal non strenuous activity After 8-15 days in Desarda group was 74% while only 72% of patient in Lichtenstein repair. (p value < 0.0001). **Conclusion-** Desarda repair is easy to perform and has shown to take shorter operative time. Also, there is no need of mesh with less suture material requirement. So, this method proves cost effective than the Lichtenstein method. Desarda hernia repair was found to be superior to Lichtenstein repair in terms of post-operative pain and foreign body sensation. It can be recommended for younger patients. This study has shown that the efficacy of Desarda repair in respect to influencing long term outcomes in patients is comparable to Lichtenstein repair. So, it can be safely used as an alternative to conventional method. In infected and strangulated cases, Desarda repair can be used effectively, as risk of mesh infection is eliminated. Also, this technique can eliminate the fear of mesh infection in diabetic patients.

KEYWORDS : Inguinal hernia, Desarda, Lichtenstein

INTRODUCTION

The inguinal canal forms a pathway for the testes to descend from their intra abdominal position through the anterior abdominal wall, into the scrotum. Inguinal canal develop in both sexes because of morphologically indifferent state of sexual development. As the mesonephros degenerates – a ligament gubernaculum passes obliquely through the developing anterior abdominal wall at the site of future inguinal canal. The gubernaculum attaches caudally to the internal surface of the labioscrotal swellings (future halves of the scrotum or labia minora)¹

Lichtenstein technique is currently most popular method among different open mesh techniques with minimal perioperative morbidity. It is considered standard of care in patients of inguinal hernia. However, problems like foreign body sensation, wound infection, cord fibrosis, chronic pain and recurrence (2%) are major concern. Greater majority of hernia operations in the developing world, India inclusive, are done by non-specialists such as medical officers, medical-assistants (Clinical Officers) and paramedics. This all may lead to increased incidence of complications and recurrence.²

Dr. Mohan P. Desarda reported a novel technique of a tissue-based hernia repair with very less recurrence. Desarda repair is based on concept of providing strong, mobile and physiologically dynamic posterior inguinal wall without use of any prosthesis. Here in place of mesh, an undetached strip of external oblique aponeurosis is stitched to posterior wall to strengthen it. The technique requires less complicated dissection or suturing, no mesh is needed, easy to learn and has results similar if not better than Lichtenstein repair.³

There is a paucity of data in western Rajasthan over comparison of two techniques of hernia repair. Therefore this Comparative study on Lichtenstein Repair and Desarda

Technique of Hernia is being done in Department of Surgery at PBM Hospital Bikaner.

MATERIAL & METHOD:

1. STUDY DESIGN: Prospective Hospital based Comparative study.

2. STUDY PLACE: Department of Surgery, PBM Hospital, Bikaner

3. STUDY DURATION: one year

4. STUDY POPULATION: All patient with sign and symptoms of hernia admitted in ward of surgery department.

5. SAMPLING TECHNIQUE: Consecutive sampling.

6. SAMPLE SIZE: all eligible patients admitted in surgery ward will be included in study.

7. INCLUSION CRITERIA:

- i. patients willing to participate.
- ii. Patients with primary inguinal hernia.

8. EXCLUSION CRITERIA:

- i. Not Willing to participate.
- ii. Severly ill patients.
- iii. patients with obstructed, strangulated and recurrent inguinal hernia.

9. STUDY TOOL:

1. A pre tested pre structured questionnaire with both open and close ended questions will be used.
2. VAS Scale:- Instruct the patient to point to the position on the line between the faces to indicate how much pain they are currently feeling. The far left end indicates "no pain" and the far right end indicates "worst pain ever."

10. DATA COLLECTION & ANALYSIS:

After obtaining permission from Ethical Committee and informed verbal consent of study population selected through analyzing inclusion and exclusion criteria and with help of Consecutive sampling, the questionnaire will be administered to study subjects by the researcher. Two groups will be made. Group I receive hernia repair through Lichtenstein mesh repair where as Group II receive hernia repair through Desarda tissue repair. All relevant information related to study subjects' socio demographic details, anthropometry, clinical profile, biochemical parameters will be taken and Parts were prepared by clipper just before surgery, Inj. Cefuroxime 1.5 gm was given 1 hour prior to incision and spinal anaesthesia was given under monitoring by Anaesthetist. After the induction of anaesthesia, site was painted 1st by betadine scrub and then by 10% betadine solution and draped with sterile sheets. Desarda repair was performed according to the surgical technique described by Dr. Desarda and mesh prosthesis repair (Lichtenstein) was undertaken as described in the textbooks. Dressing was done on 3rd, 5th and 7th post-operative days. visual analogue scale (VAS) will be used for pain assessment. All data collected will be entered into Microsoft Excel and will be analysed with help of appropriate software and tests of significance considering level of significance as $p < 0.05$.

OBSERVATIONS

The socio-demographic variable in both groups were comparable.

TABLE 1. LOCATION

LOCATION	LICHTENSTEIN (N=30)	DESARDA (N=30)
RIGHT	16	18
LEFT	14	12
BILATERAL	0	0

P-value = 0.602

There is no difference regarding location of hernia.

TABLE 2. DURATION OF HOSPITAL STAY

DURATION	LICHTENSTEIN (N=30)	DESARDA (N=30)
SHORT (<3 DAYS)	22	29
LONG (>3 DAYS)	8	1

P-value = 0.001

Mean hospital stay for Desarda's group was less than 3 days, for Lichtenstein group was more than 3 days (p value < 0.0001)

TABLE 3. PAIN

VAS (PAIN)	LICHTENSTEIN (N=30)		DESARDA (30)		P-value
	MEAN	SD	MEAN	SD	
FIRST POD	4.49	1.19	3.54	0.85	0.01
THIRD POD	3.61	1.01	3.09	0.49	0.01
FIFTH POD	2.29	1.05	1.96	0.20	0.01

VAS score on 1st, 3rd, 5th postoperative days was significantly less in Desarda's group as compare to Lichtenstein group (p -value < 0.0001).

TABLE 4. COMPLICATIONS

COMPLICATIONS	LICHTENSTEIN (N=30)	DESARDA (N=30)
SEROMA	4	1
WOUND INFECTION	3	2
HEMATOMA	5	1
ORCHITIS	0	0
TESTICULAR ATROPHY	0	0
RECURRANCE	0	0

There is no recurrence between both groups, complications are more for Lichtenstein group

TABLE 5. RETURN TO NORMAL NON STERNOUS ACTIVITY

RETURN TO NORMAL NON STERNOUS WORK	LICHTENSTEIN (N=30)	DESARDA (N=30)
1-7 DAYS	3	5
8-15 DAYS	11	21
16-30 DAYS	16	4

p-value = 0.001

Return to normal nonsternous Activity After 8-15 days in Desarda group was 70.00% while only 46.67% of patient in Lichtenstein repair. (p value < 0.0001).

DISCUSSION

Lichtenstein Mesh repair is now widely used, and is often referred to as the gold standard despite a relatively paucity of clinical trial comparing mesh with suture repair. Cost of surgery and post-operative morbidity affecting the quality of life are important considerations in the inguinal hernia surgery. There are no clear scientific evidence to prove that the mesh prosthesis repair is superior to non-prosthesis repair in this respect Porrero JL, El Cambio et al.⁴

There are advantages and disadvantages associated with all types of open inguinal hernia surgery. Existing non prosthesis repair (Bassini/Shuldice) is blamed for causing tissue tension and mesh repair is blamed for causing complication of foreign body. Desarda's repair an undetached strip of the external oblique aponeurosis between the muscle arch and the inguinal ligament to give a strong and physiologically dynamic posterior wall⁵. The posterior wall of the inguinal canal was weak and without dynamic movement in all patients. Strong aponeurotic extensions were absent in the posterior wall. The muscle arch movement was lost or diminished in all patients. The movement of the muscle arch improved after it was sutured to the upper border of a strip of the external oblique aponeurosis (EOA). The newly formed posterior wall was kept physiologically dynamic by the additional muscle strength provided by external oblique muscle to the weakened muscles of the muscle arch. A physiologically dynamic and strong posterior inguinal wall, and the shielding and compression action of the muscles and aponeurosis around the inguinal canal are important factors that prevent hernia formation or hernia recurrence after repair. In addition, the squeezing and plugging action of the cremasteric muscle and binding effect of the strong cremasteric fascia, also play an important role in the prevention of hernia MP Desarda et al.⁶ Desarda's result in tension free repair without the use of any foreign body, being simple to perform.

For inguinal hernia repair, different studies have tried to give an answer as to which of the existing techniques is better⁷. THE EU HERNIA COLLABORATION made a systemic revision of the randomized prospective studies and analysis of the result of different studies. The use of synthetic mesh substantially reduces the risk of hernia recurrence irrespective of placement method. Mesh repair appears to reduce the chance of persisting pain rather than increase it [McGill et al.].⁸

No patient had severe pain postoperatively and nearly all patients ($n = 396$) were free of pain and discomfort after the second postoperative day. 340 patients (85%) were discharged by the 4th postoperative day, and most returned to normal activities within 2 weeks. There was 1 early Haematocele, and 1 recurrence at 2 years Desarda MP et al⁹

After VAS score on 1st, 3rd, 5th postoperative days was significantly less in Desarda's group as compare to Lichtenstein group (P value < 0.0001). Patients after Desarda repair were discharged from hospital on fourth day after the surgery, in group I on fifth postoperative day ($p < 0.05$). One week after the hernia repair patients in both

groups equally classified the intensity of the pain (VAS 1.2). Six months after the hospitalization the effect of performed surgery was described as good or very good. Only one patient in group I was unsatisfied with the surgery results. There was minor intensity of the pain at this point--similar in both groups (I--0.8, II--1.1).

The external oblique muscle technique satisfies all criteria of modern hernia surgery. Desarda's technique is simple and easy to do. It does not require risky or complicated dissection.

CONCLUSION

Desarda repair is easy to perform and has shown to take shorter operative time. Also, there is no need of mesh with less suture material requirement. So, this method proves cost effective than the Lichtenstein method. Desarda hernia repair was found to be superior to Lichtenstein repair in terms of post-operative pain and foreign body sensation. It can be recommended for younger patients. This study has shown that the efficacy of Desarda repair in respect to influencing long term outcomes in patients is comparable to Lichtenstein repair. So, it can be safely used as an alternative to conventional method. In infected and strangulated cases, Desarda repair can be used effectively, as risk of mesh infection is eliminated. Also, this technique can eliminate the fear of mesh infection in diabetic patients

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