

Original article

Study of comparing the Desarda technique versus Lichtenstein technique for inguinal hernia treatment

¹Dr Pradyumna SR, ²Dr.Hemanth Kumar M* , ³Dr. S S Patil, ⁴Dr. Shailesh Kannur

¹Post Graduate in General Surgery

² Associate Professor in General Surgery

^{3,4} Assistant Professor

BLDE (DU) 'SHRI B. M PATIL MEDICAL COLLEGE And Research Institute, Vijayapura

Corresponding author*

ABSTRACT:

BACKGROUND: The inguinal hernia is one of the most common problems in the world. An ideal hernia repair is still elusive. Currently Lichtenstein mesh repair technique is widely followed for hernia repair. Desarda technique of inguinal hernia repair introduced in 2001 is still not considered standard tissue based hernia repair technique. The aim of the study was to compare the tissue based Desarda technique with standard Lichtenstein repair in treatment of primary inguinal hernia.

METHODS: 70 cases were allocated into 2 groups. Desarda (D Group) had 35 and Lichtenstein (M Group) had 35 patients. Primary outcome factors included operative time measured from skin incision to skin closure. Post operative pain scores was assessed on day 1,3,14 ,30 and 90 using Sheffield scale. Duration of hospital stay was noted. Ecchymosis, hematoma, seroma, surgical site infections, foreign body sensation etc. were evaluated as postoperative complications. A follow up examination was planned for 6 month to look for early recurrence(<6month) and chronic groin pain.

RESULTS: Mean age in Desarda's group 43.71 ±12.79 years while Lichtenstein group was 49.89±14.31 years .The mean duration of surgery 41.69 min(D) vs 45.66 min(M). Duration of hospital stay 3.31 days(D) vs 4.03 days(M). Time taken to return to normal and work activities was significantly less in Desarda group (P = 0.001). There was no statistical difference in rates of post-operative complications among the two arms of the study. After 6-month mean follow up period 1 recurrence is noted in each arm (P = 1).

CONCLUSION: On comparison of Desarda technique with standard Lichtenstein repair. Desarda technique does not use a mesh. Patients after Desarda's operative procedure gets normal activity sooner as compared to the standard Lichtenstein mesh repair. complications similar to standardized technique. We also found the use of Desarda technique in patients with indirect hernia is a technically sound option than Lichtenstein technique.

BACKGROUND:

The inguinal hernia is one of the most common problems in the world. An ideal hernia repair is still elusive. Currently Lichtenstein mesh repair technique is widely followed for hernia repair. Desarda technique of inguinal hernia repair introduced in 2001 is still not considered standard tissue based hernia repair technique. The aim of the study was to compare the tissue based Desarda technique with standard Lichtenstein repair in treatment of primary inguinal hernia.¹

Suture repair for inguinal hernia is still under development, and recently, Mohan Desarda has described an operation where a 1-2 cm strip of external oblique aponeurosis lying over the inguinal canal is separated from the main muscle

tissue and attached both medially and laterally. It is then sutured to the conjoint tendon and inguinal ligament, giving strength to the posterior wall of inguinal canal. On contraction of abdominal muscle, this strip of external oblique aponeurosis tightens to provide further physiological support to the posterior wall. This operation is currently being evaluated.² This new technique is theoretically closer to ideal hernia repair. It is based on the concept of providing a strong, mobile and physiologically dynamic posterior inguinal wall. The technique is simple, easy to learn and do. It does not require complicated dissection or suturing. There is no tension on suture line. It does not require any foreign material and does not use weakened muscles or transversalis fascia for repair. The results are superior to those previously published in the field of hernia surgery.³

Success of groin hernia is measured primarily by permanence of operation, fewest complications, minimal cost, and earliest return to normal activities. To validate the use of Desarda's repair at large, its comparison to open mesh (Lichtenstein) – in these outcomes must be established. The purpose of this study is to attempt to establish the influence of this new technique on early clinical outcomes of inguinal hernia repair, and limited study of long term outcomes. If proved to be effective it will be a basis for promotion of use globally.

METHODOLOGY:

The present study was carried out at Department of General Surgery, SHRI B.M PATIL MEDICAL COLLEGE, VIJAYAPURA. A Total of 70 patients were enrolled in this study. They were randomised into two groups Desarda and mesh

DESARDA: This group included 35 patients in whom underwent repair using EXTERNAL OBLIQUE APONEUROSIS –DESARDA'S Repair.

MESH : This group include 35 patients in whom Prolene MESH was used i.e Underwent Lichtenstein's Procedure. Evaluation of all patients included in the study with respect to history, physical findings, operative findings and postoperative complications in line with the predetermined objectives was done. Thirty six patients underwent Desarda's repair and thirty six patients underwent Lichtenstein mesh repair. All the patients in both groups were followed for a period of 6 months. The patients are followed up at one monthly, three monthly and six monthly intervals for any complications or recurrence. Any recurrence of hernia or death of patient was regarded an end point.

a) INCLUSION CRITERIA

All cases of inguinal hernia admitted for surgery

1. Above 18 years of age.
2. With a primary, reducible inguinal or inguino-scrotal hernia; unilateral or bilateral hernia.

b) EXCLUSION CRITERIA

Patients with:

1. Old and debilitated patients of poor general condition as they will be unable to give an accurate assessment of the key outcomes of the operation.
2. Recurrent Hernias.
3. Intra operative finding of separated, thin and/or weak external oblique aponeurosis

RESULTS:

Age ranged between 19 to 70 years among patients undergoing Desarda’s repair and 19 to 72 years in Lichtenstein repair. With the mean age of presentation between and Lichtenstein mesh vs and Desarda group is 49.89 and 43.71 years respectively. p value between mesh and desarda group is 0.032. There was no significance difference in the age in both the groups.

In this study 34.3% and 37.1% patients had complete inguinal hernia, 65.7% and 62.9% patients had incomplete inguinal hernia in desarda’s and Lichtenstein mesh group respectively. Most of the patients had incomplete inguinal hernia in both the groups. With insignificant p value 0.8030

The mean duration of surgery in Desarda group was 41.69±1.676 while that in Lichtenstein group was 45.66±2.578 There was a statistically significant difference of nearly 4 minutes with a P value of <0.001

On post operative **day -1:** 14.3% vs 0.0% had mild pain, 54.3% had moderate pain in desarda and 48.6% in mesh group, 31.4% vs 51.4% had severe pain in desarda’s and Lichtenstein group respectively. Here the p value was found to be significant (p=0.00331).

Table 1: Distribution of patients according Pain POD 14

Pain-POD 14	MESH		DESARDA		Chi square test	P value
	No. of patients	Percentage	No. of patients	Percentage		
0	25	71.4	27	77.1	X ² =0.2991	P=0.5844 NS
1	10	28.6	8	22.9		
2	0	0	0	0		
3	0	0	0	0		
Total	35	100	35	100		

On POD-14; 77.1% vs 71.4% patients had no pain, 22.9% vs 28.6% had mild pain in desarda’s and Lichtenstein group respectively with less significant p value (p>0.05).

Table 2 : Distribution of patients according Pain POD 6 MONTHS(CHRONIC PAIN)

Pain-POD 6 MONTHS	MESH		DESARDA		Chi square test	
	No. of patients	Percentage	No. of patients	Percentage		
0	30	85.7	34	97.1	X ² =2.917	P=0.0877 NS
1	5	14.3	1	2.9		
2	0	0	0	0		
3	0	0	0	0		
Total	35(100)	100	35(100.0)	100		
NS: No significant						

In this study 2.9% of the patients of desarda group had mild groin pain when compare to 14.3% of mild pain in Lichtenstein with insignificant p value (>0.05)

Table 3: Distribution of patients according ECCHYMOSIS

ECCHYMOSIS	MESH		DESARDA		Chi square test	P value
	No. of patients	Percentage	No. of patients	Percentage		
ABSENT	33	94.3	34	97.1	X ² =0.3483	P=0.5551NS
PRESENT	2	5.7	1	2.9		
Total	35	100.0	35	100.0		

Present study 1(2.9%) patients in desarda’s and 2(5.7%) patients in Lichtenstein group had Echymosis with insignificant p value(p>0.05).

Table 4: Distribution of patients according to SURGICAL SITE INFECTION

SURGICAL SITE INFECTION	MESH		DESARDA		Chi square test	P value
	No. of patients	Percentage	No. of patients	Percentage		
Absent	34	97.1	34	97.1	X ² =0.00	P=1.00 NS
Present	1	2.9	1	2.9		
Total	35	100.0	35	100.0		

Present study 1(2.9%) patients and 1(2.9%) patients had Surgical site infection in desarda’s and Lichtenstein mesh group respectively. Here p value is insignificant(P>0.05).

Table 5 : Distribution of patients according Post operative day stay at hospital

Stay at hospital in days	MESH		DESARDA		Chi square test	P value
	No. of patients	Percentage	No. of patients	Percentage		
2	2	5.7	5	14.3	X ² =14.149	P=0.0027 HS
3	5	14.3	15	42.9		
4	18	51.4	14	40.0		
5	10	28.6	1	2.9		
Total	35	100.0	35	100.0		

After 6 months of follow up there was 1 recurrence in both the groups. No statistical significance with p value of 1.00

The cost of treatment in total between two groups was compared. The cost of treatment in Desarda group in comparison with Lichtenstein group which was lesser by nearly 2000 rs. The difference was statistically significant with a p value of <0.001 .

DISCUSSION:

Inguinal hernia is the most common surgical abdominal entity in the adults. In the past decade Lichtenstein repair has become the gold standard for treatment of inguinal hernias mainly due to the reduction in recurrences noted. It is used as blanket surgery for all types and sizes of inguinal hernia with very few exceptions. ⁴However it is practiced widely it is far from the definition of an ideal hernia repair as it is not tissue based and has complications like chronic inguinal pain as quoted in an editorial in annuals of surgery in 2001 which observed that the incidence of chronic groin pain has dramatically increased from around 3% to nearly 19%.⁴ Nerve entrapment within the mesh is often blamed for this consequence. Several other complications of mesh repair include hematoma, seroma, ischemic orchitis, testicular atrophy, mesh infection and sinus formation. Young patients especially those undergoing mesh repair for indirect hernias are affected mostly with a risk of infertility in future.

Though there was no statistically significant difference in pain in all days following surgery with lesser pain in Desarda group other than post operative day 1 which showed significantly less pain in Desarda group. They were more patients with severe pain in post operative day 1 in Lichtenstein group.

The pain patterns were insignificant when compared on post operative day 3,14,30,90 and after 6 months of surgery. The pain was comparable in both the groups. Since early post operative pain was less in Desarda group it aided in early mobilization and early discharge from hospital.

Among the postoperative complications encountered in the present study seroma rate was roughly similar in both groups, however seroma rates were high compared to Szopinski J et al at the same time scrotal swelling, hematoma rates and wound infections rates were more than the given study.⁵

Comparative parameter(D vs L)	Present study	Monyilirah et al ⁶	Szopinski J et al ⁵
Seroma Rate	2.9% vs 8.6%	1.9%vs0%	3.8% vs 5.8%
Rate of wound infection	2.9% vs 2.9 %	0% vs 0%	0.9% vs 1.9%
Hematoma	2.9%vs 5.7%	3.9% vs 2.0%	7.7% vs 9.7%
Foreign body sensation	8.6% vs 20%		14.6% vs 18.1%

The mean duration of hospital stay was 4.03 days and 3.31 days in Lichtenstein and Desarda group respectively. The comparison of other parameters with others studies was not possible due to different operational definition of these variables in different studies. However a common trend of earlier mobilization and discharge was noted in a Desarda group in all studies.

CONCLUSION:

Desarda’s technique is best suited for young patients and for Indirect Hernias as it has less risk of post-operative orchitis, infertility and inguinodynia.

REFERENCES:

1. M.Bay Nelsen,F.M Perkins et al, Pain Functional Impairment 1year After Herniorrhaphy, Ann Surg 2001 ;233 : 1-7 .
2. P. Geis K .sing and G. K. Gillion , An Algorithm for the Treatment of Chronic Pain After Inguinal Herniorrhaphy , P A 2002 ; 307 -16.
3. R. Frei , Differential Diagnosis and Treatment of Post Herniorrhaphy Groin Pain, Gen Surg News 2004 ;feb 20-27
4. Mohan P. Desarda. "New method of inguinal hernia repair: A new solution", ANZ Journal of Surgery, 4/2001.,4(3) , 5-11
5. Szopinski J, Dabrowiecki S, Pierscinski S, Jackowski M, Jaworski M, Szuflet Z. Desarda versus Lichtenstein technique for primary inguinal hernia treatment: 3-year results of a randomized clinical trial. World journal of surgery. 2012; 36 (5): 984-992.
6. Monyilirah , George E. Wantz. "Giant prosthetic reinforcement of the visceral SAC",Surgical Clinics of North America, 1998 , 4-1,6-15