

A RANDOMIZED STUDY TO COMPARE THE DESARDA TISSUE REPAIR VS. LICHTENSTEIN MESH HERNIOPLASTY IN REPAIR OF PRIMARY INGUINAL HERNIA

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Abstract

Background: Inguinal hernias are common, with a lifetime risk of 27% in men and 3% in women. Inguinal hernia repair is one of the most common operations in general surgery. The aims of the surgical repair are to eliminate the swelling, to relieve pain and discomfort and to remove the risk of strangulation. Until recently, the mesh repair by Lichtenstein technique is the most widely used method for inguinal hernia repair. In 2001, Desarda proposed a solution that using part of the external oblique aponeurosis (EOA) as a patch for repair, which may reduce the complications compared with meshes. The aim of this study is to compare the clinical outcomes of the standard mesh-based Lichtenstein repair with the Desarda tissue repair for the treatment of primary inguinal hernia in terms of operative time, post-operative pain, wound infection, seroma formation, return to normal activity, cord induration, local hypoesthesia/paraesthesia, chronic pain, foreign body sensation and early recurrence. **Materials and Methods:** This study was carried out on 56 patients of inguinal hernia (either direct or indirect) admitted in the surgical ward at a tertiary healthcare centre. Patients are placed in two groups according to computer generated random number - those in which Desarda tissue repair is done and those in which Lichtenstein mesh hernioplasty is done. Data was analyzed using SPSS software ver. 26.0. **Result:** Mean duration of surgery was comparable between Lichtenstein and Desarda Group (p=0.167). Post-op pain was more in the Desarda's group during the early post-op period (p=0.07). However, pain in Lichtenstein group was more by the end of day 7 as compared to Desarda's group (p=0.03). Post-op hospital stay was significantly more in case of Lichtenstein repair as compared to Desarda's repair (p=0.04). Mean recovery time i.e., starting of regular work was significantly less in case of Desarda's repair as compared to Lichtenstein repair (p=0.04). Overall complication rate was 13.3% in Lichtenstein group as compared to 3.8% in Desarda's group (p=0.21). Incidence of surgical site infections was comparable between the two groups (p=1.0). However, mesh related complications i.e., chronic pain (6.7%) and scrotal edema (3.3%) were seen only in cases of Lichtenstein repair. No recurrence was observed in any of the groups. **Conclusion:** Based on the result, both techniques are equally effective in terms of incidence of recurrence. However, chronic pain is reported in Lichtenstein group due to irritation by mesh. Thereby cases undergoing Lichtenstein have longer hospital stay and slightly delayed recovery to routine activities in comparison to cases undergoing Desarda's repair. Authors thus conclude that Desarda's technique is better than Lichtenstein's repair for inguinal hernia and can be considered as the method of choice in treating inguinal hernia.

INTRODUCTION

Man in the evolutionary process, while standing erect and learning to walk created a defect in the anterior abdominal wall. A hernia (or rupture) is the protrusion of an organ through that part of the body that usually contains it. In the case of groin hernia, this is the protrusion of a part of the abdominal contents through the abdominal wall into the groin. Groin hernias can occur at any age. They are common in babies and small children, become less common in the teens and twenties and then rise in incidence throughout the middle and later years of life.^[1] Inguinal hernias are common, with a lifetime risk of 27% in men and 3% in women.^[2] Inguinal hernia repair is one of the most common operations in general surgery. The aims of the surgical repair are to eliminate the swelling, to relieve pain and discomfort and to remove the risk of strangulation. The cumulative probability of strangulation of an untreated inguinal hernia has been estimated to be 2.8% at 3 months and 4.5% at 2 years,^[3] and this complication carries a significant morbidity and mortality, particularly in the elderly. Successful treatment will prevent such complications and help improve quality of life.

The Evolution of Hernia Surgery [Table 1]

The earliest record of hernia description was in 1500 B.C., in Greek literature as the Greek physicians were aware of inguinal hernia. The term hernia is derived from Greek word -Hernios meaning an off-shoot, a budding or bulge.^[4]

In 1884, Edoardo Bassini first proposed repairing the inguinal canal with silk stitches suturing the conjoined transversus abdominis and internal oblique with the transversalis fascia to the inguinal ligament, which is the first sound technique for the repair of inguinal hernia.^[5] Since that time, more than 70 derivations of tissue-based repairs are described in the literature.^[6] In the 1970s, the Lichtenstein hernia repair was favoured and became the gold standard of open tension-free hernia repair.^[7]

There were no written surgical guidelines for hernia treatment until 2009, when the European Hernia Society (EHS) published its recommendations based on analysis of the literature and the results of clinical trials. In the EHS guidelines, mesh-based techniques—the Lichtenstein technique in particular—and endoscopic methods are recommended for treatment of symptomatic primary inguinal hernia in adult men (strength of recommendation IA).^[8]

The synthetic prostheses most often used in the inguinal area can create new clinical problems, such as foreign body sensation in the groin, discomfort, and abdominal wall stiffness, which may affect the everyday functioning of the patient.^[9] Surgical-site infections, often with clinical symptoms delayed for many years, are more frequent after hernia treatment using mesh.^[10,11] Migration of the mesh from the

primary site of implantation in the abdominal cavity is one of the most dangerous complications.^[12,13] Intense chronic inflammatory process typically associated with foreign body reactions around the mesh prosthesis may produce meshoma or plugoma tumors, the treatment of which becomes a new surgical challenge.^[14,15] Additionally, procreation and sexual function are reportedly seriously affected after surgical hernia treatment with mesh.^[16] Thus, we are still far from accomplishing everything in the hernia surgical field, and complications remain the major clinical problem.

The observed complication rates and postoperative dysfunction have influenced many investigators to look for new hernia repair techniques or to modify old ones.

In 2001, Desarda proposed a solution that using part of the external oblique aponeurosis (EOA) as a patch for repair, which may reduce the complications compared with meshes. Moreover, the technique requires no complicated dissection or suturing, and is easy to learn as its developer claimed.^[17] 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.^[18] The main advantages of Desarda technique (DT) are absence of recurrence and postoperative neuralgia and is a simple procedure that does not require placement of any foreign body nor complicated dissection of the inguinal floor, and it can be used in contaminated surgical fields as in cases of strangulated hernia. All of these advantages concur with the criteria of the ideal repair for inguinal hernia.^[19] The disadvantages of Desarda technique are hematoma, seroma, surgical-site infection, chronic pain, and recurrence.^[20]

The aim of this study is to compare the clinical outcomes of the standard mesh-based Lichtenstein repair with the Desarda tissue repair for the treatment of primary inguinal hernia in terms of operative time, post-operative pain, wound infection, seroma formation, return to normal activity, cord induration, local hypoesthesia/paraesthesia, chronic pain, foreign body sensation and early recurrence.

MATERIALS AND METHODS

This study was a randomized control study conducted at Department of General Surgery, Dr. Susheela Tiwari Government Hospital, Haldwani. Study was commenced after taking approval of Institutional Ethical Committee.

Inclusion Criteria

1. Patients with age more than 18 years and less than 80 years and fit for surgery
2. Uncomplicated inguinal hernia
3. Patients giving consent to be part of the study

Exclusion Criteria

1. Complicated Hernia (Incarcerated hernia, Obstructed hernia, Strangulated hernia)
2. Patients with co-morbid conditions like Diabetes Mellitus, Ischemic heart diseases etc.
3. Patients not giving consent to be part of the study.

Methodology

This study was carried out on 56 patients of inguinal hernia (either direct or indirect) admitted in the surgical ward in the Department of General Surgery, Government Medical College, Haldwani.

Preoperative variables like age, BMI, occupation, addiction, associated illnesses, chief complaints, location of hernia, type of hernia, reducibility, any acute presentation, associated scrotal swelling, etc. were recorded.

Prior to admission, proper screening along with detailed clinical evaluation of each patient was carried out in the form of the following: complete blood count, routine biochemistry, bleeding time, clotting time, urine examination, chest x-ray and ECG.

All repairs were performed by the same surgeon either by using Desarda tissue repair technique or the conventional open tension-free mesh technique as described by Lichtenstein. Mesh repair was done by using the polypropylene mesh. Patients are placed in two groups according to computer generated random number -

- Group A: those in which Desarda tissue repair is done
- Group B: those in which Lichtenstein mesh hernioplasty is done

All the patients were advised to take bath with soap & water on the day of surgery prior to the procedure. Skin was prepared at the surgical site by clipping hairs and cleaned with 10% povidone iodine solution and spirit. Surgical site was draped with sterile surgical sheets.

During post-operative period, patients were prescribed IV fluids. Patients were allowed oral feeds 8 hours later and shifted from parenteral to oral analgesics SOS. Pain measurement on Visual Analogue Scale and Check-dress with evaluation of stitch line were done on 2nd day and were evaluated for any seroma or hematoma formation or wound infection. Patients were discharged on 2nd to 3rd day when able to walk comfortably. In case of wound infection, period of admission was lengthened for treatment. Patients were viewed after 1 week, at that time skin sutures were removed and follow up data were recorded. Further follow up was done on patient's visit or by phone call.

Wound condition was scored according to the Southampton Wound Grade system. All patients were educated about the symptoms and signs of surgical site infections and were instructed to report to us in case they developed any such symptoms and signs. SSI is defined as per the CDC (Centre for Disease Control) criteria - superficial SSI: wound

cellulitis /erythema /purulent discharge from the wound and deep SSI: mesh infection.

Any wound infection requiring surgical interventions, such as removal of sutures or clips, drainage of deep pus, packings etc. was noted.

Data Analysis

Data was analyzed using SPSS 26.0 using appropriate statistical tests.

RESULTS

In our study, we included 56 patients, out of which 26 underwent Desarda's repair (Group A) and 30 patients underwent Lichtenstein repair (Group B) [Table 2]. Mean age of the study group was 45.5 years with no difference between the two repair groups ($p=0.81$) [Table 3 and Figure 5]. Mean BMI of the study group was 23.18 Kg/ m² with no difference between the two repair groups ($p=0.91$) [Table 4 and Figure 6]. Overall right side was involved more than the left side (58.9% vs 30.4%) while bilateral hernia was observed in 10.7% cases. No difference was observed between study groups in terms of laterality of hernia ($p=0.13$) [Table 5 and Figure 7]. Direct hernia was seen in 53.6% cases while indirect hernia was observed in 46.4%. No difference was observed between study groups in terms of type of hernia ($p=1.0$) [Table 6 and Figure 8]. Mean duration of symptoms before surgery was comparable between Desarda and Lichtenstein Group (13.56 vs 11.94 months; $p=0.49$) [Table 7 and Figure 9].



Figure 1: Incision on medial leaf of EOA.

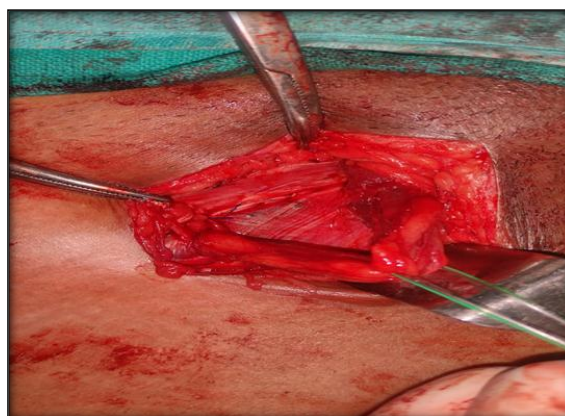


Figure 2: Medial leaf of EOA sutured to inguinal ligament.



Figure 3: Suture of upper free border of EOA to conjoint tendon.

Mean duration of surgery was comparable between Desarda and Lichtenstein Group (43.06 vs 45.68 mins; p-0.167) [Table 8 and Figure 10]. Post-op pain was more in the Desarda's group during the early post-op period (Day 2 VAS scores: 2.91 vs 2.33; p-0.07). However, pain in Lichtenstein group was more by the end of day 7 as compared to Desarda's group (1.97 vs 1.41; p-0.03) [Table 9 and Figure 11]. Post-op hospital stay was significantly more in case of Lichtenstein repair as compared to Desarda's repair (2.50 vs 2.06 days; p-0.04) [Table 10 and Figure 12]. Mean recovery time i.e., starting of regular work was significantly less in case of Desarda's repair as compared to Lichtenstein repair (11.69 vs 13.90 days; p-0.04) [Table 11 and Figure 13].

Overall complication rate was 13.3% in Lichtenstein group as compared to 3.8% in Desarda's group (p-0.21) [Table 12 and Figure 14]. Incidence of surgical site infections was comparable between the two groups (3.8% vs 6.7%; p-1.0). However, mesh related complications i.e., chronic pain (6.7%) and scrotal edema (3.3%) were seen only in cases of Lichtenstein repair. Loss of sensation over groin was also observed in 1 case (3.3%) of Lichtenstein repair [Table 13 and Figure 15]. No recurrence was observed in any of the groups [Table 14 and Figure 16].



Figure 4: Suture of the lateral leaf of EOA to the new medial leaf of EOA.

Table 1: The Evolution of Hernia Surgery

Major Milestones ^[4]	
Hippocrates	Described hernia as "a tear in the abdomen" (400 BC)
Heliodorus	Described the original method of hernia repair. (200 BC)
Celsus	Introduced Trans-illumination; described clinical signs that differentiate a hernia from the hydrocele, described an operation for hernia. (100 AD)
Litter	Reported a Meckel's diverticulum in a hernia sac
Vesalius Fallopius Poupart	Described the inguinal ligament.
Heister	Described direct hernia 1724
Sir Ashley Paston Cooper (ENGLAND)	Described anatomy of the groin including the superior pubic [Cooper's] ligament, cremasteric fascia and transversalis fascia.
Morton	Described the conjoint tendon
De Gimbernat	Described medial ligament in the of the femoral canal [Lacunar ligament] and division of that ligament in the treatment of strangulated femoral hernia
Richter (GERMANY)	Described partial obstruction and incarceration of bowel wall in a hernia defect
Bassini Eduardo Father of Modern Herniorrhaphy	Described transversalis fascia repair and reinforcing the posterior wall of the canal using interrupted sutures of silk (1884)
E.E. Shouldice	Four layered anatomical repair –SHOULDICE REPAIR (1953)
Usher	Popularized the use of knitted mesh of polyamide and polypropylene in hernia repair (1958)
Dr. Irving Lichtenstein	To circumvent the degenerative nature of inguinal hernias and adverse effect of suture line tension, the Lichtenstein tension-free hernioplasty began in 1984 and evolved (between 1984 and 1988) to a procedure that is now considered the gold standard of hernia repair by the American College of Surgeons.
Fitzgibbons R.J.	Trans abdominal pre-peritoneal mesh repair of inguinal hernia (1992)
Dellemagne. B.	Totally extra peritoneal mesh repair for hernia (1996)
Desarda	Proposed a solution that using part of the external oblique aponeurosis (EOA) as a patch for repair, which may reduce the complications compared with meshes (2001).

Table 2: Distribution of cases as per type of procedure

Group	N
Desarda Repair (Group A)	26
Lichtenstein repair (Group B)	30
Total	56

Table 3: Mean age comparison among study groups

Variables	Group	N	Mean	SD	p- value
Age (years)	A	26	45.78	11.23	0.81
	B	30	45.22	11.09	

Table 4: Mean BMI comparison among study groups

Variables	Group	N	Mean	SD	p- value
BMI (Kg/m ²)	A	26	23.13	4.46	0.91
	B	30	23.23	3.30	

Table 5: Comparison of two groups as per side of hernia

Side of Hernia	Group		Total
	A	B	
B/L	2	4	6
	7.7%	13.3%	10.7%
Left	5	12	17
	19.2%	40.0%	30.4%
Right	19	14	33
	73.1%	46.7%	58.9%
Total	26	30	56
	100.0%	100.0%	100.0%

p- value -0.13

Table 6: Comparison of two groups as per type of hernia

Type of Hernia	Group		Total
	A	B	
Direct	14	16	30
	53.8%	53.3%	53.6%
Indirect	12	14	26
	46.2%	46.7%	46.4%
Total	26	30	56
	100.0%	100.0%	100.0%

p- value - 1.0

Table 7: Comparison of two groups as per duration of symptoms

Variables	Group	N	Mean	SD	p- value
Duration of Symptoms (months)	A	26	13.56	11.72	0.49
	B	30	11.94	11.72	

Table 8: Comparison of two groups as per duration of surgery

Variables	Group	N	Mean	SD	p- value
Duration of Surgery (mins)	A	26	43.06	6.07	0.167
	B	30	45.68	7.65	

Table 9: Comparison of two groups as per post-op pain score

Post-op Pain (VAS Score)	Group	N	Mean	SD	p- value
Day 2	A	26	2.91	0.78	0.07
	B	30	2.33	0.94	
Day 7	A	26	1.41	1.02	0.03
	B	30	1.97	1.04	

Table 10: Comparison of two groups as per hospital stay

Variables	Group	N	Mean	SD	p- value
Hospital stay (days)	A	26	2.06	0.37	0.04
	B	30	2.50	0.81	

Table 11: Comparison of two groups as per time for recovery

Variables	Group	N	Mean	SD	p- value
Time of recovery (days)	A	26	11.69	2.30	<0.01
	B	30	13.90	3.96	

Table 12: Comparison of two groups as per post-op complications

Complications	Group		Total
	A	B	
No	25	26	51
	96.2%	86.7%	91.1%
Yes	1	4	5
	3.8%	13.3%	8.9%
Total	26	30	56
	100.0%	100.0%	100.0%

p- value - 0.21

Table 13: Comparison of two groups as per type of post-op complications

Type of Complications	Group		Total
	A	B	
Loss of sensation over groin	0	1	1
	0.0%	3.3%	1.8%
SSI	1	2	3
	3.8%	6.7%	5.4%
Scrotal edema	0	1	1
	0.0%	3.3%	1.8%
Chronic Pain	0	2	2
	0.0%	6.7%	3.6%
None	25	26	51
	96.2%	86.7%	91.1%
p- value - 0.41			

Table 14: Comparison of two groups as per recurrence rate

Recurrence	Group		Total
	A	B	
No	26	30	56
	100.0%	100.0%	100.0%
Yes	0	0	0
	0.0%	0.0%	0.0%
Total	26	30	56
	100.0%	100.0%	100.0%
p- value - NA			

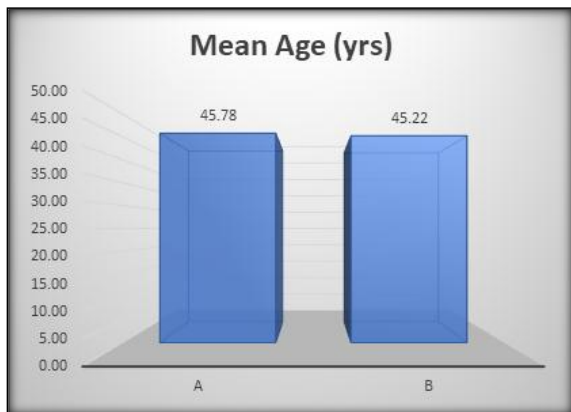


Figure 5: Mean age comparison among study groups

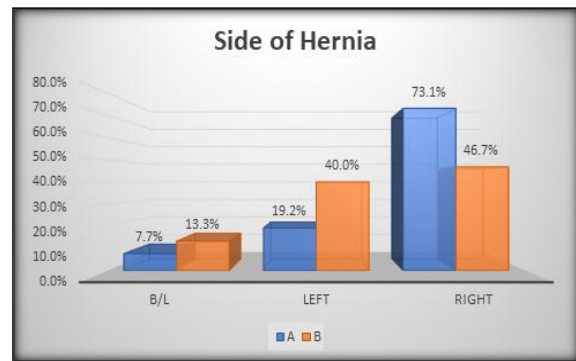


Figure 7: Comparison of two groups as per side of hernia



Figure 6: Mean BMI comparison among study groups

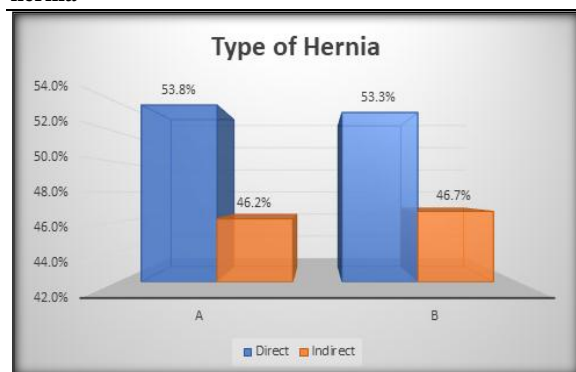


Figure 8: Comparison of two groups as per type of hernia

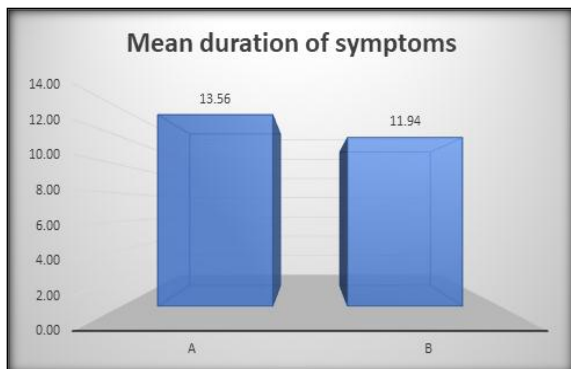


Figure 9: Comparison of two groups as per duration of symptoms

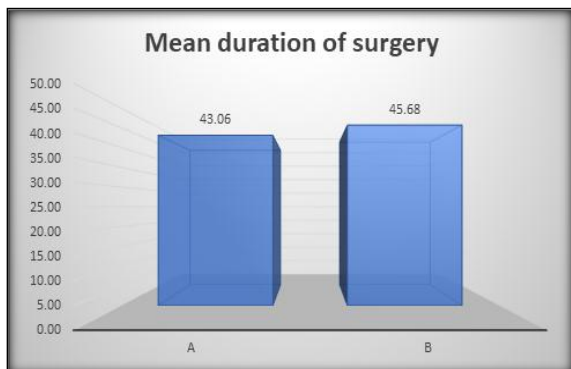


Figure 10: Comparison of two groups as per duration of surgery

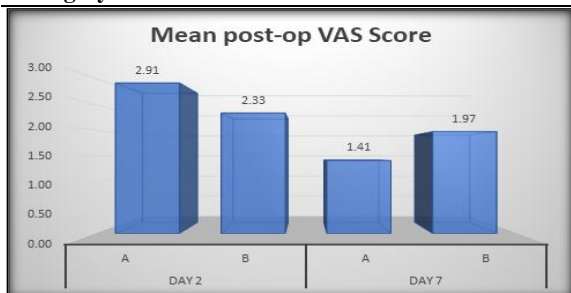


Figure 11: Comparison of two groups as per post-op pain score

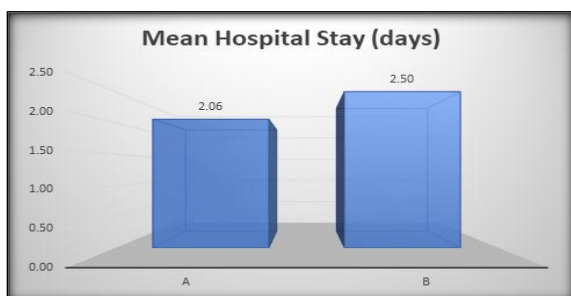


Figure 12: Comparison of two groups as per hospital stay

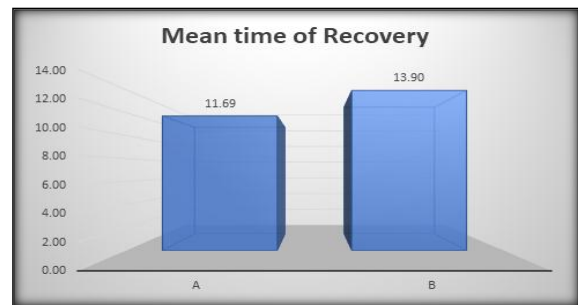


Figure 13: Comparison of two groups as per time for recovery

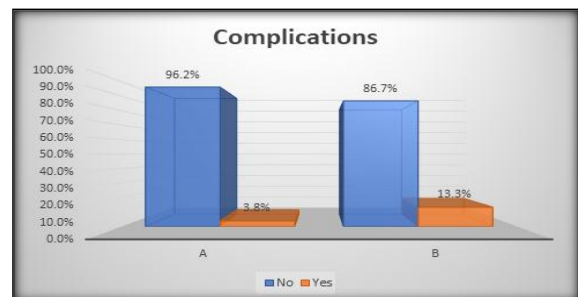


Figure 14: Comparison of two groups as per post-op complications

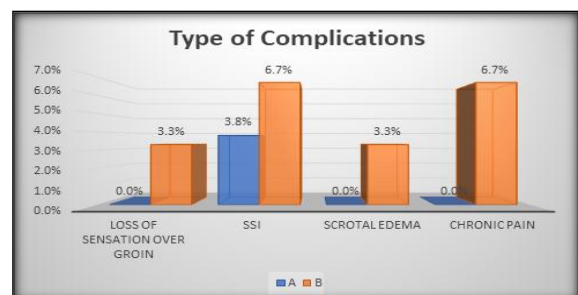


Figure 15: Comparison of two groups as per type of post-op complications

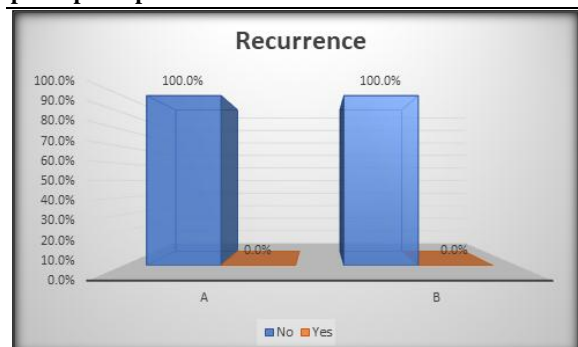


Figure 16: Comparison of two groups as per recurrence rate

DISCUSSION

Inguinal hernias are common, with a lifetime risk of 27% in men and 3% in women.^[2] Until recently, the mesh repair by Lichtenstein technique is the most widely used method for inguinal hernia repair.^[8] However, the synthetic prostheses used in this technique, can create new clinical problems such as foreign body sensation in the groin, discomfort, and

abdominal wall stiffness, which may affect the everyday functioning of the patient.^[9]

In 2001, Desarda proposed a solution that using part of the external oblique aponeurosis (EOA) as a patch for repair, which may reduce the complications compared with meshes.^[17]

In present study, we aimed to compare the clinical outcomes of the standard mesh-based Lichtenstein repair with the Desarda tissue repair for the treatment of primary inguinal hernia in terms of operative time, post-operative complications and early recurrence.

Present study originally planned to involve 50 cases in each of the repair groups i.e. Lichtenstein and Desarda's repair. However, due to the Covid-19 pandemic during the study period, we could only get 26 cases of Desarda's repair and 30 cases of Lichtenstein's repair.

Baseline Data

Mean age of the study group was 45.5 years with no difference between the two repair groups (p=0.81). All the cases were males. Mean BMI of the study group was 23.18 Kg/ m² with no difference between the two repair groups (p=0.91). Overall right side was involved more than the left side (58.9% vs 30.4%) while bilateral hernia was observed in 10.7% cases. No difference was observed between study groups in terms of laterality of hernia (p=0.13). Direct hernia was seen in 53.6% cases while indirect hernia was observed in 46.4%. No difference was observed between study groups in terms of type of hernia (p= 1.0).

Mean duration of surgery was comparable between Desarda and Lichtenstein Group (43.06 vs 45.68 mins; p=0.167). B S Gedam et al,^[27] conducted a prospective cohort study to compare Desarda's technique with Lichtenstein mesh repair in treatment of inguinal hernia. Operative time was 73.89± 12.63 min in Lichtenstein and 72.60 ± 13.89 m in Desarda repair (P = 0.508). Hua Ge et al,^[26] in a systematic review also observed no significant difference between the groups in terms of duration of surgery. Contrary to our findings, Ahmed E. Ahmed et al,^[30] and Ahmed S Arafa et al,^[33] observed that Desarda repair had significantly shorter operating time than Lichtenstein repair.

Post-op pain was more in the Desarda's group during the early post-op period (Day 2 VAS scores: 2.91 vs 2.33; p=0.07). However, pain in Lichtenstein group was more by the end of day 7 as compared to Desarda's group (1.97 vs 1.41; p=0.03). B S Gedam et al,^[27] compared Desarda's technique with Lichtenstein mesh repair for inguinal hernia. Postoperative pain was significantly less after first 2 post-operative days in Desarda group (P = 0.09) compared to Lichtenstein group. In a similar study, Ahmed E. Ahmed et al,^[30] also observed that Desarda repair cases had less post-operative pain than Lichtenstein repair after initial post-op period. W. Manyilira et al,^[21] in their study observed no significant difference in the mean pain score (VAS) between the study arms [3rd postoperative day

(POD): 3.33 ± 1.75 for Lichtenstein and 2.73 ± 1.64 for Desarda) and the scores on the 7th POD were 1.31 ± 1.19 for Lichtenstein and 1.31 ± 1.34 for Desarda. Neogi P et al,^[25] study observed that Desarda repair is comparable to Lichtenstein repair in terms of many parameters but superior in terms of post-operative pain and foreign body sensation and should be preferred for young patients.

Post-op hospital stay was significantly more in case of Lichtenstein repair as compared to Desarda's repair (2.50 vs 2.06 days; p=0.04). Mean recovery time i.e., starting of regular work was significantly less in case of Desarda's repair as compared to Lichtenstein repair (11.69 vs 13.90 days; p=0.04). Ahmed E. Ahmed et al,^[30] also showed that Desarda repair had early return to work activity and shorter hospital stay than Lichtenstein repair. Ahmed S Arafa et al,^[33] in their study observed a significantly earlier return to normal gait in favour of Desarda repair. B S Gedam et al,^[27] in their study also observed that time taken to return to basic and home activities was significantly less in Desarda group (P = 0.001). Sowmya G. R et al,^[24] study observed that time taken to resume normal activities was significantly less in case of Desarda repair. Tamer youssef et al,^[23] study concluded that Desarda repair is as effective as the standard Lichtenstein procedure. Shorter operating time, early return to normal gait and lower cost (no mesh) are potential benefits of Desarda repair. Hua Ge et al,^[26] however in a systematic review and W. Manyilira et al,^[21] in a randomized trial, observed no significant difference in both groups in terms of operating time and return to normal gait. Poojary HS, et al,^[32] in another similar study observed that mean hospital stay in Desarda's group was comparable to the Lichtenstein group (p=0.16). Return to normal non-strenuous activity after 7-15 days in Desarda was 80% and 64% in Lichtenstein group.

Overall complication rate was 13.3% in Lichtenstein group as compared to 3.8% in Desarda's group (p=0.21). Incidence of surgical site infections was comparable between the two groups (3.8% vs 6.7%; p=1.0). However, mesh related complications i.e., chronic pain (6.7%) and scrotal edema (3.3%) were seen only in cases of Lichtenstein repair. Loss of sensation over groin was also observed in 1 case (3.3%) of Lichtenstein repair. No recurrence was observed in any of the groups. Prakash et al,^[28] study observed that 2-year follow-up there were no recurrences in both groups. There were no surgical site infections in the Desarda's group, compared to Lichtenstein's repair which had 4 (10%) recurrences. The occurrence of complications like loss of sensation over the groin, scrotal edema, abdominal wall stiffness was not seen in Desarda's group, whereas its occurrence was highly significant (p<0.01) in Lichtenstein's group. Jacek Szopinski et al,^[22] observed two recurrences in each group (p = 1.000). Chronic pain was experienced by 4.8% and 2.9% of patients from groups L and D group respectively (p = 0.464). Foreign body sensation and

other complications were not different between the groups. B S Gedam et al,^[27] in a study with 15-month mean follow up period observed 1 recurrence in each arm (P = 1.0). There was no statistical difference in rates of post-operative complications among the two arms of the study. Hemanth Vupputuri et al,^[29] in their study observed that recurrence rate was not significantly different; however, chronic groin pain was significantly higher in Mesh repair group as compared to Non mesh group (P = 0.05). Postsurgical pain was significantly higher (P < 0.001) in M than NM group whereas complications were comparable. Hua Ge et al,^[26] in a systematic review observed no significant difference in terms of rate of wound infection, hematoma, foreign body sensation, seroma and recurrence rate. Sowmya G. R et al,^[24] study observed that In Lichtenstein repair patients had chronic groin pain even at the end of one year, but none of the patients in Desarda repair had chronic groin pain. Complications such as seroma and wound infection were less in Desarda repair; however, there was no recurrence observed in both the groups during the follow up period. Tamer youssef et al,^[23] observed that during 2-year follow up, one recurrence was detected in each group (P-0.99). Chronic groin pain was experienced by 5.6% and 4.2% of patients from Desarda and Lichtenstein groups respectively (P - 0.68). Gulzar MR et al,^[31] observed that in Group L scrotal hematoma was developed in 4.8% patients and in 1.3% patients in Group D (p value 0.22). Surgical site infection was seen in 1 patient in Group L (1.61%) and 1 patient in Group D (1.31% p value 0.88). Ahmed S Arafa et al,^[33] study observed that complication rates were nearly similar in the two study arms. The results showed that both DT and LT provided satisfactory treatment for primary inguinal hernia with low recurrence rates and acceptable rates of complications.

CONCLUSION

Based on the result, both techniques are equally effective in terms of incidence of recurrence. However, chronic pain is reported in Lichtenstein group due to irritation by mesh. Thereby cases undergoing Lichtenstein have longer hospital stay and slightly delayed recovery to routine activities in comparison to cases undergoing Desarda's repair. Authors thus conclude that Desarda's technique is better than Lichtenstein's repair for inguinal hernia and can be considered as the method of choice in treating inguinal hernia.

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