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A study on the short term outcomes and recurrence rate between Lichtenstein's and Desarda technique in management of Inguinal hernia

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Abstract
Seventy-five percent of all abdominal wall hernias are found in the groin, making it the most common location for an abdominal wall hernia. Of all groin hernias, 95% are hernias of the inguinal canal, with the remainder being femoral hernia defects. Inguinal hernias are nine times more common in men than in women. Although femoral hernias are found more often in women, the inguinal hernia is still the most common hernia in women. The overall lifetime risk of developing a groin hernia is approximately 27% in males and 3% in females. Over a period of one and half year patients selected with inguinal hernia as per inclusion and exclusion criteria were included in this prospective study Patients were randomly divided into two groups' i.e. Group 1(Control group): were subjected to Lichtenstein Tension free mesh repair, Group 2(Study group): were subjected to Desarda repair. In the present study 2 patients from both group had seroma collection and 2 patients of LTF group had wound infection one patient of Desarda group had wound infection with Ischemic Orchitis for which re-exploration was done. Rests of the complications were not seen in both groups.

Keywords: Lichtenstein's technique, Desarda technique, Inguinal hernia

Introduction
Inguinal hernias remain an important surgical problem because of frequency. Average Life time risk for inguinal hernia is 27% for men, 3% for women [1]. Annual morbidity rates in various countries vary from 100 to 300 per 100,000 population [2]. Until 2009 there were no written surgical guidelines for hernia treatment, 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 Lichtenstein technique in particular and endoscopic methods is recommended for treatment of primary inguinal hernia in adult men (strength of recommendation 1A). In a departure from this firm opinion presented by the EHS, the Shouldice method has been acknowledged to be acceptable [3]. The synthetic prostheses most often used in the inguinal hernia 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 [4]. Surgical site infections often with clinical symptoms delayed for years are more frequent after hernia treatment using mesh, migration of the mesh from
In recent times a new procedure has been described for inguinal hernia surgery by Dr. Desarda [5] a surgeon from Pune, which involves use of a strip of external oblique aponeurosis to strengthen the posterior wall of the inguinal canal. The advantages of this procedure over Lichtenstein's are that:

- This is a physiological repair and tension free
- Pain is comparatively lower in this procedure [6, 7].
- No risk of complications in future as there is no mesh placed
- Can be used in strangulated hernia [8].
- Recurrence and complication rates equal to or better than Lichtenstein's repair [9, 10].
- Early ambulation and less time of hospital stay [6, 7].
- Low cost for the patient as mesh is not used.
- Simple procedure with equal or less operating time than Lichtenstein's repair [10].

Multiple studies have been done in various countries with good results comparing the procedure with mesh repair.

Methodology:
Study Design: Prospective Study

Sample Size: A total of 50 patients will be studied, 25 of these undergoing Desarda hernia repair and 25 undergoing Lichtenstein mesh repair.

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

Exclusion criteria
Patients with
1. Obstructive uropathy or chronic obstructive pulmonary disease because they are contraindications to elective hernia surgery. They are associated with definite poor outcomes such as high recurrence rates.
2. 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.
3. Patients with strangulated hernia.
4. Recurrent Hernias.
5. Per operative finding of separated, thin and/or weak external oblique aponeurosis

Over a period of one and half year patients selected with inguinal hernia as per inclusion and exclusion criteria were included in this prospective study
Patients were randomly divided into two groups' i.e.

Group 1 (Control group): were subjected to Lichtenstein Tension free mesh repair

Group 2 (Study group): were subjected to Desarda repair

Data collection: the data of each patient was collected in a specially designed proforma which is enclosed

Statistical Analysis: Descriptive Statistics was done for all the data and Suitable tests of Comparison were done. Continuous variables were analyzed with unpaired test and Categorical Variables were analyzed with Fishers Exact Test. *P* <0.05 was taken as statistically Significant. The Data was analyzed using SPSS software. Microsoft excel was used to generate Charts.

Results

Table 1: Post-Operative Pain

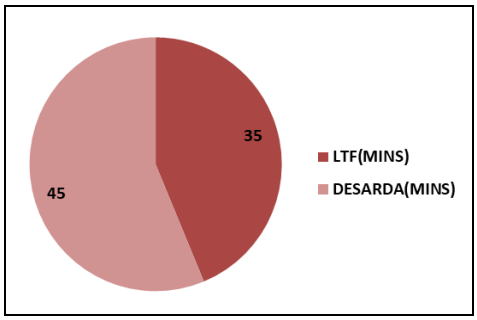
Pain (Mild to Moderate)	LTF Repair(N=25)	Desarda(N=25)
POD1	25	25
POD3	24	16
POD5	20	13

In the present study, on post op day 1, all the patients in both groups had Mild to moderate pain, but 24(96%) out of 25 and 20 (80%) out of 25 were still experiencing mild to moderate pain even on post op day 3 and 5 respectively in LTF group, when compared to Desarda group were only 16(64%) and 13(52%) patients were experiencing Mild to Moderate pain which was statistically significant with P<0.05.

Table 2: Complications

Complications	Ltf	Desarda
Seroma	**2**	**2**
Wound Infection	2	1
Orchitis	0	1
Hematoma	0	0
Testicular Atrophy	0	0
Recurrance	0	0

In the present study 2 patients from both group had seroma collection and 2 patients of LTF group had wound infection one patient of Desarda group had wound infection with Ischemic Orchitis for which re-exploration was done. Rests of the complications were not seen in both groups.



Graph 1: Operative Time

Average operative time for LTF group was 45 mins when compared to Desarda group which was 35mins which was statistically significant with *P*<0.05.

Table 3: Sreturn to Normal Stranious Activity

Return To Normal Non Stranious Activity	Ltf	Desarda
1-7DAYS	4	8
8-15DAYS	14	22
16-30DAYS	7	5

In the present study as shown in table and the graph, return to normal non strenuous activity was early in Desarda group when compared to LTF group.

Discussion
In Desarda study, no patients had severe pain postoperatively and nearly all patients were pain free and discomfort after the second postoperative day. 85% of the patients were discharged by the 4th postoperative day, and most returned to normal activities within 2 weeks. There was 1 early hematocele and 1 recurrence at 2 years [11]. Return to normal nonstrenuous activity after 7 -15 days in Desarda group was 84% while only 48% of patients in LTF repair.
After Desarda repair there was less intensive post-operative pain, patients after Desarda repair were discharged from Hospital on 4th day after surgery as compared to 5th day in LTF group. One week after hernia repair patients in both the group equally classified intensity of pain. Six months after hospitalization the effect of performed surgery was described as good or very good or unsatisfied. There was only one patient in group one who was not satisfied with the surgery results. There was minor intensity of pain in the both groups at this point of

time, similar in both the groups. Full activity was achieved by 46 patients in group 1 and 45 patients in group 2. There was no hernia recurrence among the patients after 6 months after surgery Mitura K, Romanczuk M *et al.* [12]. In this study mild to moderate pain was noticed on 1st, 3rd, 5th post-operative was significantly less in desarda's group as compared to Licthenstein group ($p<0.0001$).

A total of 208 patients were randomly assigned to the D & L group. The primary outcomes measured were recurrence and chronic pain. Additionally early and late complications, foreign body sensation and return to normal daily activity were examined in hospital and at 7, 30 days and 6, 12, 24, 36 months after surgery. During the follow up, two recurrence were observed in each group chronic pain was experienced by 4.8 and 2.9% of patients from groups D & L, respectively. Foreign body sensation and return to activity was no different between the groups. There was significantly less seroma production in the D group szopinski J, Kapala A, Prywinski S *et al.* [13].

In the present study, the immediate post-operative complications were comparable with each other, there was no recurrence in either of the group. Operative time was less with Desarda technique, postoperative pain was less in Desarda group as compared to LTF group.

The External oblique muscle technique satisfies all criteria of modern hernia surgery. Desarda technique is simple and easy to do. It does not require risky and complicated dissection. There is no tension in suture line. It does not require any foreign body material and does not use weak muscle or transversalis fascia for repair. It does not use mesh prosthesis so it is more economical and also avoid morbidity associated with foreign body like rejection, infection, chronic groin pain. Szopinski *et al.* [14], Stated in their Randomized contolled trial that the Desarda's technique had potential to enlarge the number of tissue based method available to treat groin hernia.

Conclusion

The patients who underwent Desarda repair experience less pain when compared to LTF repair. Local complications like seroma, wound infection. Orchitis, hematomas were almost similar in both the groups. Time taken to return no normal non strenuous activity was less in Desarda patients as compared to LTF repair. There was no recurrence seen in either of the group on follow up.

The duration of hospital stay was less in Desarda group as compared to LTF group. Desarda technique is simple to perform, cost effective, avoids mesh related complications.

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