

A Prospective and Comparative Study of Desarda Repair and Lichtenstein (Mesh) Repair for Inguinal Hernia, at AGMC and GBP Hospital, Agartala, Tripura

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Abstract

Background: Inguinal hernia is very common health problem worldwide. The estimated prevalence of 7%, the estimated lifetime risk for inguinal hernia is 27% for men and 3% for women. Annual morbidity rates in various countries vary from 100 to 300 per 100,000 citizens. The aim of study to compare the outcome of Desarda repair and Lichtenstein (Mesh) repair for Inguinal hernia.

Methods: Study period from July 2016 to June 2017; total 138 cases were operated in our surgery unit at AGMC and GBP Hospital, Agartala, Tripura. This prospective comparative study in 138 cases was allocated into two groups randomly: Group A (Desarda) and Group B (Lichtenstein) included 62 patients and 72 patients respectively. The primary outcome measures were Operating time, post-operative scrotal hematoma, surgical site infection and Time in days to return to Normal activity.

Results: During the follow up period, Mean Operating time in Desarda group was 38.29 minutes and 44.30 minutes in Lichtenstein group (p value 0.004). 93.5% patients resumed routine activities on 1st Post-operative day in Desarda group whereas in Lichtenstein group 92.1% patients resumed routine activities on 1st Post-operative day (p value 0.745). In Group A Scrotal Hematoma was developed in 4.8% patients and in 1.3% patients in Group B (p value 0.22). Surgical site Infection was seen in 1 patient in Group A (1.61%) and 1 patient in Group B (1.31% p value 0.88).

Conclusion: Our study concludes that Desarda repair is superior to Mesh repair in terms of operating time and the results of Post-operative complications in both techniques are statistically insignificant.

Keywords: Hernia, Lichtenstein Repair, Desarda Repair, Scrotal Hematoma

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Introduction

In the early 1980s, Lichtenstein described his method of tension free repair using a mesh for inguinal floor reconstruction. This technique has now become gold standard because of low rates of recurrence that have been consistently reproducible [1].

However, this method has its own set of disadvantages like chronic pain, testicular atrophy, foreign body sensation and seroma formation etc. thus there is an ongoing search for an ideal operation for inguinal hernias. Theoretically an ideal hernia repair should be tension free, tissue based with no potential damage to vital structures, no long-term complications like pain and recurrence. Dr. M. P. Desarda described a new technique in his study of 860 patients published in the world journal of surgery in 2006. This technique utilizes an undetached strip of external oblique aponeurosis that is sutured to inguinal ligament below and to the conjoined tendon above, behind the spermatic cord to provide a physiologically dynamic posterior wall. No recurrence was noted in this study with a median [2].

Many surgeons all over the world have endeavored to adopt this procedure especially in relatively resource poor areas and to date excellent results have been obtained with low incidence of recurrence (about 1%) and short-term complications.

However, hernia repair with a mesh is still the most widely used procedure. Total extraperitoneal laparoscopy repair of adult inguinal hernia is a new procedure as well [3].

Material and Methods

This prospective and comparative study was done at Department of Surgery, Agartala Govt. Medical College and GBP Hospital, Agartala, Tripura from July 2016 to June 2017. A total of 138 patients divided in two groups: Desarda repair (Group A) 62 patients and Lichtenstein repair (Group B) 72 patients included adult male patients with primary unilateral inguinal hernia. The female patients, and those with recurrent, bilateral, strangulated or obstructed hernias and those with significant co-morbid diseases were excluded.

Patients were admitted via outpatient department for elective hernia repair. They were thoroughly investigated in the inpatient department to identify their fitness status along with detailed history and examination. Informed consent was taken from all patients and they were randomly allocated to either Desarda group or Lichtenstein group. Protocol proforma was attached with each chart and data pertaining to variables was entered. Patients were seen during follow up and any complications were noted and entered in the proforma. Statistical analysis was done using IBM SPSS Statistics Version 23.

Results

In this study total number of cases included 138. The Mean age of the patients in Desarda (Group A) was 38.1 years (16-66 years) whereas that in Lichtenstein (Group B) was 41.4 years (15-68 years).

Table 1: Age distribution of patients

	Desarda Group A	Lichtenstein Group B
No. of patients	62	76
Minimum	16	15
Maximum	66	68
Mean	38.10	41.43
SD	12.602	15.013

Eighty-nine patients (64.5%) had right sided inguinal hernia and 49 patients (35.5%) had left sided inguinal hernia. 120 patients (84.2%) had indirect and 18 patients (15.8%) had direct inguinal hernia. Postoperative scrotal haematoma was noted in 3 patients (4.8 %) in Desarda group and in one (01) patient in Lichtenstein group (1.31%) with a p-value 0.22.

Table 2: Post-operative hematoma formation

	Desarda Group	Lichtenstein Group
No. of patients	62	76
Yes	03 (4.8%)	01 (1.3%)
No	59 (95.2%)	75 (98.7%)
P value	0.22	

Surgical site infection was noted in only one patient in each group; 1.61 % in Desarda group and 1.31 % in Lichtenstein group (p value 0.88).

Table 3: Surgical site infection

	Desarda Group	Lichtenstein Group
No. of patients	62	76
Yes	01 (1.61%)	01 (1.31%)
No	61 (98.4%)	75 (98.7%)
P Value	0.88	

In Desarda group 93.5% patients were able to resume physical activity (like walking and going to washroom independently) one first postoperative day and 6.5% on the second day.

Table 4: Time in days to return to normal activities

	Desarda Group	Lichtenstein Group
No. of patients	62	76
1 st Day	58 (93.5%)	70 (92.1%)
2 nd Day	04 (6.5%)	06 (7.9%)
P Value	0.745	

Whereas in Lichtenstein group 92.1% patients were able to resume physical activity (like walking and going to washroom independently) one first postoperative day and 7.9% on the second day (p-value 0.74). Mean Operating time was 38.29 min (17-70 min) and 44.30 min (25-120 min) in Desarda and Lichtenstein groups respectively.

Table 5: Operation time in minutes

	Desarda Group	Lichtenstein Group
No. of patients	62	76
Minimum	17	25
Maximum	70	120
Mean	38.29	44.30
SD	8.080	15.653
P Value	0.004	

Discussion

Desarda sutures an undetached strip of the external oblique aponeurosis between the muscle arch and the inguinal ligament to give a strong and physiologically dynamic posterior wall. It is also important to note that Desarda was the first to advocate performing the inguinal hernia repair on physiological considerations to give complete cure from hernia. The debates about the technique of gold standard for inguinal hernia repair. In laparoscopic repair, always comparison was between Lichtenstein and non-mesh repair (Desarda) but infection of surgical site, foreign body sensation and migration of mesh were very serious problems [4-6].

Natural tissue repair technique (Desarda) of inguinal hernia is novel technique and it uses external oblique to strengthen posterior abdominal wall. In early, some authors made objection that this technique is a change in old tissue repair [7,8].

A another open non mesh hernia repair, Desarda describe whose results are comparable with Lichtenstein repair [9]. Technique of Desarda repair is suturing of external oblique with inguinal ligament starting from pubic tubercle. Another incision is made 2 cm above spermatic cord and superior leaf of external oblique aponeurosis is sutured again with lower leaf over spermatic cord to restore normal anatomy of inguinal canal [10].

In this study Lichtenstein group 92.1% patients were able to resume physical activity (like walking and going to washroom independently) one first postoperative day and 7.9% on the second day (p-value 0.74). Mean Operating time was 38.29 min (17-70 min) and 44.30 min (25-120 min) in Desarda and Lichtenstein groups respectively. Zaheer Abbas also concluded in his study that this is no statistically significant difference in mean operative time between two techniques [11].

A another study done by Jacek Szopinski *et al* reported that no statically difference was present in term of return to normal activity [12] but Mohan P Desarda showed in his study that Desarda has reduced time for return to normal activity from 3 / 4 weeks to 1 / 2 week [13]. S M Situma also reported in his study that time for resumption of normal gait in Desarda was approximately 6 days [14].

Dr. Desarda's new theory about factors that prevent inguinal hernia formation in the normal individuals: the posterior wall of inguinal canal is not formed by just transversalis fascia but is formed by two layers, transversalis fascia and the aponeurotic extensions from the Transversus Abdominis Aponeurotic arch, Transversalis fascia is thin and delicate and does not give any protection. Protection is given by the aponeurotic extensions from the Transversus Abdominis Aponeurotic arch, concepts of the obliquity of inguinal canal or shutter mechanism are not perfect.

Conclusion

Desarda repair technique is more better Lichtenstein (Mesh) repair technique for Inguinal Hernia. The advantage of Desarda repair being tension free repair which is simple and cheap to perform and takes relatively shorter time.

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