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ANALYSING OUTCOMES OF DESARDA'S VS LICHENSTEIN REPAIR IN INGUINAL HERNIA PATIENTS

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ABSTRACT:

Introduction: Inguinal hernia repair was the classic instance of a surgical operation that was done most often. The Lichtenstein tension-free mesh repair was traditionally regarded as the technique of choice but the worries based on the mesh complications led to the exploration of the tissue-based option like the one of Desarda. Comparative analysis of these two methods was necessary to help establish the relative effectiveness and safety of these methods in clinical practice.

Objective: The researchers proposed to compare results of the repair done by Desarda and Lichtenstein in patients that underwent inguinal hernia repair.

Methods: Classification of the 5-day post-surgery patient was used to select the study participants from June 2025 to September 2025 after approval of the synopsis in the Department of Surgery, Chaudhary Muhammad Akram Teaching and Research Hospital, which is affiliated with Azra Naheed Medical College, Lahore. Sixty primary unilateral inguinal hernia patients were randomly selected and divided into two equal groups: in Group A, Desarda repair was performed, and in Group B, the Lichtenstein repair was performed. Measures of outcome were operative time, postoperative pain, early postoperative complications, length of hospital stay, time to resume normal activities and recurrence on follow up. Proper statistical tests were conducted on the data and the p-value of less than 0.05 was taken to be significant.

Results: The two groups were similar in age, gender composition, and hernal traits. In the Desarda group, the mean operative time was low as compared to the Lichtenstein group. The pain scores of patients who received Desarda repair during the process was significantly lower after surgery. Desarda group experienced lesser levels of early postoperative complications such as seroma and wound infection. The duration of stay and time to resume normal daily functions was also less in Desarda group. They did not recur in both groups throughout the follow-up period.

Conclusion: The repair used by Desarda was shown to be safe and effective to use as an alternative to Lichtenstein repair in the inguinal hernia and the benefit included, lower postoperative pain, less complications, and better recovery. The process was a viable mesh-free alternative especially in environments where mesh-based problems or scarcity of resources were issue of concern.

Keywords: Inguinal hernia, Desarda repair, Lichtenstein repair, randomized controlled trial, postoperative.

INTRODUCTION:

Inguinal hernia was among the most prevalent operations that were met across the world and constituted a substantial percentage of the general surgery. It was manifested by the bulge through the abdominal content in a weakened section of the inguinal canal and was more common in males because of anatomical and physiological conditions. A swoleness, pain, or discomfort in the groin was a common presentation of patients with inguinal hernia, the presence of which might negatively impact daily life and quality of life [1]. Operative repair was considered as the cure of the permanent treatment since the conservative management did not offer any lasting relief and the complication that may occur was incarceration and strangulation.

Various surgical measures were previously invented over the previous decades to repair inguinal hernia with the major objectives being the low rate of recurrence, less pain on the surgery, length of stay, and ability to resume normal life other than otherwise [2]. Out of them, tension-free mesh repair methods were widely accepted and became the standard of care in most centers. One of the most commonly performed open procedures was the Lichtenstein repair that entailed the overlay of synthetic mesh over the wall of the inguinal canal in the back. It was preferred by being simple, reproducible and low recurrence [3]. Nevertheless, in spite of its wide usage, there had been apprehensions about mesh complications, such as persistent groin pains, feeling of a foreign body, mesh infection, groin sermas, and in extreme cases, mesh displacement.

All these concerns led to the re-examination of tissue-based repair methods which were later advanced into viable alternatives to mesh repair. The repair by Desarda was a new release free and tension-free no mesh procedure, whereby an aponeurosis of the external oblique was placed abacus of repairing the back wall of the inguinal canal [4]. This approach was to maintain the dynamic physiology of the abdominal wall and not contribute to the complications that come together with the prosthetic materials. The repair proposed by Desarda was claimed to be technically easy, affordable, and especially beneficial in the environments where mesh was not readily available and in cases when the probability of mesh-related diseases was significant [5].

Multiple studies had tested the results of the repair by Desarda and compared them to the Lichtenstein technique and endorsed inconsistent outcomes. Although some of the authors reported similar rates of repetition and shorter operating period with Desarda, some of the authors indicated less postoperative pain in their individual patients and earlier working rates in patients that underwent tissue-based repair. On the other hand, the Lichtenstein technique had continuously low rates of recurrence, and was used to compare methods that came afterward [6]. The variability of the current evidence and dissimilarities in the study designs, patient groups, and length of follow-up required additional comparative assessments.

Cost of mesh and management of mesh complication proved to be yet another challenge to the developing countries with straining resources of healthcare including in settings of resource-constrained countries. Thus, the therapeutic significance of safe, effective and economical operation methodology was significant in a clinical context [7-9]. Comparison of Desarda and Lichtenstein repairs was necessary in order to make surgical decisions and ensure the maximization of patient outcomes, especially in big hospital settings [10].

The aim of conducting this study was to compare the outcome or results of a repair done to an individual with inguinal hernia on Desarda and Lichtenstein repair. The outcomes determined were operation time, pain following operation, complications, stay, resumption of normal activity, and rate of recurrence. Through a systematic analysis of these parameters, the study was expected to add to the existing evidence literature and help surgeons to choose the most suitable surgical method depending on the needs of the patient, resources they have, and predicted clinical outcomes [8].

MATERIALS AND MTHODS:

The study was done in the Department of Surgery, Chaudhary Muhammad Akram Teaching and Research Hospital, which is a part of Azra Naheed Medical College, Lahore. This randomized control trial was conducted from June 2025 to September following ethical approval from institution ethical review committee. The study was aimed at comparing clinical outcomes of Desarda repair as compared to Lichtenstein mesh repair in patients who were to undergo an operation to correct inguinal hernia.

The study was done on 60 patients who were serged by a simple non-probability consecutive sampling method according to primary unilateral inguinal hernia diagnosis. Included werewise, patients between 18 and 65 either gender. A selection was only done among those patients who were fit to undergo elective surgery either with spinal or general anesthesia. The study did not include patients with a history of recurring inguinal hernia, bilateral hernias, strangulated or obstructed hernias, and past lower abdominal surgeries as well as patients having severe comorbid conditions (i.e., uncontrolled diabetes mellitus, chronic liver diseases and renal failure), active infection and those not willing to take part.

The participating patients were randomly assigned into two equal groups through the application of the computer-generated randomization sequence after being provided with an informed written consent. Selection concealment was taken care of by using closed opaque envelopes. Group A comprised of 30 patients who had the tissue-based repair of Desarda, whereas Group B comprised 30 patients receiving Lichtenstein tension-free mesh repair. Surgical interventions were all conducted by consultant with over five years of post-fellowship experience to reduce bias in the operation of the operators. The two techniques were done using standardized operative protocols.

The repair of Desarda was done using a strip of external oblique aponeurosis and no prosthetic mesh was used, thus repairing the wall of the저 Segment and providing a tension-free repair of the posterior wall. However, the Lichtenstein repair, which included the insertion of a polypropylene mesh around the back of the inguinal canal, held in place with non-absorbable sutures. Controlled through prophylaxis Prophylactic antibiotics were used to every patient during anesthesia induction. Standardization of postoperative analgesia and postoperative antibiotic trials was made in both groups.

The main outcome measures were postoperative pain, surgical site infection, development of a seroma or hematoma, hospital length of stay, time to resume normal daily activities as well as hernia recurrence. Visual Analog Scale (VAS) was used to measure postoperative pain 24 hours, 72 hours and 7 th postoperative day. The criteria in the knowledge of Centers of Disease Control (CDC) was used to define surgical site infection. The number of days was noted as a stay in hospital between the time slated to be operated on and the time of discharge. The measure of returning to normal activities was through the self-report of the patient during the follow-up visits.

The outpatient department involved following up patients at 1 week, 1 month, 3 months, and 6 months after the surgery. The patients were established as clinically problematic during every visit with regard to the identification of such complications like long-term groin pain, feeling of foreign body, wound-infection, and recurrence. The recurrence of Hernias was considered as the re-occurrence of a groin swelling that was either reducible or irreducible at the site of operation.

The information was wrote on a designed structured proforma and the data were inputted to the SPSS version 26 to be analyzed. Those variables that are quantitative (age, pain level, length of stay) were indicated using mean, standard deviation, whereas qualitative ones (gender, complications, recurrence) indicated using frequencies and percentages. Continuous variables were compared by means of the independent sample t-test, which was applied when comparing the two groups, and the chi-square test was implemented in cases of categorical variables. Any value of 0.05 or below was taken to be statistically significant.

RESULTS:

The synopsis was approved subsequently and the randomized controlled trial was carried out at the Department of Surgery, Chaudhary Muhammad Akram Teaching and Research Hospital, in the affiliation of Azra Naheed Medical College, Lahore, after the six months period of randomization. The sample of 60 individuals with primary unilateral inguinal hernia was recruited and divided into two equal groups randomly. Group A (n = 30) was subjected to tissue-based repair of Desarda, and the same (Group B) (n = 30) to Lichtenstein mesh repair. No loss of follow-ups was found and all patients attended the study.

Baseline Characteristics

The demographic and clinical factors of the patient in the two groups were equal on the baseline. The average age of Group A was 44.311.2 years whereas Group B was 45.610.8 years. There was dominance of male patients in both categories as the epidemiology of inguinal hernia is normally male dominated. Most of the patients were presented with indirect inguinal hernia. The age composition, gender, and side of hernia and type of hernia showed no statistically significant difference between the two groups, which means that the randomization was successful (Table 1).

Table 1: Baseline Characteristics of Patients (n = 60):

Variable	Desarda Group (n=30)	Lichtenstein Group (n=30)	p-value
Mean age (years)	44.3 ± 11.2	45.6 ± 10.8	0.68
Male : Female	28 : 2	27 : 3	0.64
Right-sided hernia	17 (56.7%)	16 (53.3%)	0.79
Left-sided hernia	13 (43.3%)	14 (46.7%)	
Indirect hernia	21 (70.0%)	20 (66.7%)	0.78
Direct hernia	9 (30.0%)	10 (33.3%)	

There was significant difference between the two methods in operative and postoperative outcomes. Mean operation time was low in Desarda (41.5 himself, 6.8 norms, 41.5 minutes) in contrast with Lichtenstein (52.4 himself, 7.3 norms, 52.4 minutes; $p < 0.001$). The Desarda group had a lower rate of early postoperative pain which was determined

via the Visual Analogue Scale (VAS) at 24 hours. Patients who had Desarda repair also exhibited previously mobilized and reduced hospital stay.

The two groups had complications after the surgery but the latter was more common among the Lichtenstein group. The incidence of seroma was observed in two cases (6.7) in Desarda group as opposed to five cases (16.7) in Lichtenstein group. One patient in the Group A and 4 patients in Group B encountered surgical site infection (3.3 and 13.3 respectively). Many mesh-related complications were not witnessed in the Desarda group, as this was by design, whereas mesh-related foreign body sensation was reported in 4 (13.3) patients within the Lichtenstein group. During the short-term follow up, there was no recurrence in both groups (Table 2).

Table 2: Comparison of Operative and Postoperative Outcomes:

Outcome	Desarda Group (n=30)	Lichtenstein Group (n=30)	p-value
Operative time (minutes)	41.5 ± 6.8	52.4 ± 7.3	<0.001
Mean VAS pain score (24 hrs)	3.1 ± 1.0	4.5 ± 1.2	0.002
Hospital stay (days)	1.6 ± 0.5	2.3 ± 0.6	<0.001
Seroma	2 (6.7%)	5 (16.7%)	0.22
Surgical site infection	1 (3.3%)	4 (13.3%)	0.16
Chronic groin pain	1 (3.3%)	6 (20.0%)	0.04
Early recurrence	0	0	—

In general, the results of the repair by Desarda showed promising short-term results in terms of the decreased time in the operation room, the decrease of postoperative pain, reduction of the time in the hospital, and the number of complications in relation to the Lichtenstein repair. The two methods were considered to be safe and effective in the case of inguinal hernia repair among the population that was being used.

DISCUSSION:

The current paper involved the comparison of the results of Desarda and Lichtenstein repair in patients that underwent an operation to repair the inguinal hernia and has shed some light on the effectiveness, safety, and post donor centralization of the two methods. The results indicated the two procedures were successfully used in repairing hernias, with reasonable results; some significant differences were found in postoperative pain, postoperative profile, and complication [11].

The repair of Desarda used in this study showed good results in terms of early postoperative pain as compared to Lichtenstein repair. Patients having undergone the repair of Desarda reported lesser pain during the immediate postoperative period which could be explained by the lack of synthetic mesh and less foreign body reaction [12]. The physiological methodology of the technique that was adopted by Desarda, which used the outer oblique aponeurosis to strengthen the posterior wall, seemed to maintain normal anatomy and avoid tissue damage. In comparison, patients undergoing Lichtenstein repair were more likely to report scores of higher pain, which could be attributed to the presence of mesh and fixation being the position of the mesh and the irritation of nerves that were noted as a result in the former studies.

Both groups had postoperative complications, but these were not similar in frequency. The surgical site infection rate was also less in the Desarda repair group which could be explained by the use of no-prosthetic material [13]. Mesh complications associated with mesh-over -and mesh-under-repair were more frequent in seroma formation, sensation of foreign bodies, and permanently unsettled pain along the groin. These were in agreement with older reports that had reported mesh-related morbidity to be a limitation to tension-free mesh repairs. It was however also stated that the repair done by Desarda did not go without its own share of complications as minor wound related complications and short lived discomfort were also reported despite having reduced frequency [14].

Desarda had a definite advantage with regard to the hospital stay and returning to regular activities. The patients of this category were discharged sooner and were brought into normal everyday activities earlier than the ones who underwent Lichtenstein repair. Higher rate of recovery might have been due to less pain during postoperative period and less wound related complications. When resources might pose a problem (the cost and the availability of mesh may be troublesome in certain circumstances), the repair of Desarda seemed to provide a viable and relatively low-cost alternative that does not impact the results of the surgeries [15].

The rates of the recurrence were insignificant and equal in both groups in the period of the study follow-up. The above finding implied that Desarda repair was no worse than Lichtenstein repair regarding results of repair durability. The support of the posterior wall with self-tissue patients appeared to have sufficient strength to avoid another episode (at least, immediately in the short-term and in the medium-term) [16]. With longer follow-up times would however have to be done in order to statistically ascertain long term recurrent patterns.

Another critical patient satisfaction and quality of life determinant was reported to be chronic groin pain more so among patients undertaking Lichtenstein repair. Fibroses resulting as a result of mesh and entrapment of the nerves

were thought to be contributory factors. The repair by Desarda that lacked mesh implantation would seem to lessen the chances of chronic pain and consequently enhanced patient comfort and satisfaction [17].

Although these are some positive results, there are some weaknesses to the research study. Its sample size was quite small and the study follow-up might not have been long enough to determine long-term results in detail. Moreover, surgeon skills and learning curve might have affected the outcomes especially in the case of repair on Desarda who needed to learn sound anatomical knowledge and methodology.

To summarize, the paper has established that Desarda repair was safe, effective and cost-efficient in comparison to Lichtenstein repair in the management of inguinal hernia. It had the benefit of lessening postoperative pain, speeding up recovery and decreasing the number of mesh complications and continuing to have relapses similar to the ones. These results justified the repair of Desarda, particularly in young patients and in the environments, where the use of the mesh was restricted or unwanted.

CONCLUSION:

In this paper, the researcher concluded that both repair methods of Desarda and Lichtenstein were successful reparative procedures with a similar success rate overall of dealing with inguinal hernia. The repair performed by Desarda was linked with lowering the postoperative pain, an earlier re-entering routine, and prevented the development of synthetic mesh complications, which is why it can be considered a favorable choice among the selected patients. Instead, Lichtenstein repair had proven solid results and low recidivism as well as the technique was well established and practiced. Seroma, wound infection, and chronic groin pain were found to occur less often among the patients operated by Desarda in repair but it did not indicate any statistical differences in all parameters. There was no difference between hospitals stay and recurrence rates between the two groups. In general, these results indicated that Desarda repair was a cost-efficient, safe, and physiologically adequate option to the Lichtenstein repair, especially in resource-deprived locations and in patients, where the use of mesh was not desirable.

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