

AN EXPERIENCE COMPARING INGUINAL HERNIA MESH REPAIR VS DARN REPAIR

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ABSTRACT

Background: Several methods for fixing inguinal hernias have been documented. Anterior or posterior approaches, open or laparoscopic procedures, may be used for hernia repair. While the technique of darn repair first presented by Moloney is still a useful treatment for inguinal hernias, polypropylene mesh repair has gained popularity lately because of the remarkable outcomes shown by Lichtenstein. In elderly guys, inguinal hernias account for 50% of cases. Older treatments like darn repair have become less common with modern techniques like laparoscopy and mesh for correcting inguinal hernias. But in underdeveloped nations like Pakistan, where affordability is a top priority, the darn repair is still well-liked and often used for inguinal hernia repairs. This research aimed to compare the early results of darned repair with Lichtenstein repair.

Objectives: Comparing inguinal hernia mesh repair vs. Darn repair evaluates postoperative discomfort, healing, hernia recurrence, and patient satisfaction. This informs patients and doctors about the pros and cons of each inguinal hernia surgery.

Study design: A descriptive cross-sectional study

Duration and place of study: this study was conducted in the Surgical unit of Bacha Khan Medical Complex, Swabi, from April 2017 to April 2018.

Methods: This descriptive cross-sectional research included 121 male patients, ages 18 to 60, who had been reported for elective or emergency Mesh/Lichtenstein or indirect or direct inguinal hernias with open surgical repair between April 2017 and April 2018. Comparing the duration of hospital stay, surgery site infection, and hernia recurrence using various procedures was the main goal.

Results: For the patients who had Lichtenstein repair, their stay in the hospital was longer, with (5.3%) superficial site infection and no deep wound infection, and Darn repair (3.5%) Superficial surgical site infections and 1.7% deep infection were noted. Complications of recurrence in Lichtenstein repair were zero at 1-year follow-up compared to Darn repair, which had a recurrence of 1.7%.

Conclusion: Compared to Darn Repair regarding the recurrence of inguinal Hernia, the results of Lichtenstein repair are more promising.

Keywords: Darn repair, Mesh Repair, Inguinal hernia

INTRODUCTION

With a frequency of 25% in men and 2% in females, inguinal hernias are still the most

prevalent kind of congenital or acquired hernias.¹ According to literature sources, inguinal hernias are more common in old age, affecting 50% of older guys each year.² Inguinal hernia repair is the most frequent surgical treatment done in the United States, with over 600,000 cases performed yearly.³ When it comes to intervention, this is the largest burden inside the health-care system.⁴ Despite recent technical breakthroughs, recurrence rates may still reach 15%.⁵ To bridge the hernia rather than seal it with sutures like the Bassini and other surgeries, Lichtenstein created mesh prosthe-

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sis in 1987. This should lead to a decreased recurrence rate because there will presumably be less instances of suture ripping out during a less traumatic procedure.^{6,7}

The gold standard for hernia repair continues to be the use of prosthetic polypropylene meshes worldwide.⁸ A Lichtenstein procedure is now the preferred technique in the majority of affluent nations. Because commercial prosthetic mesh is costly and clinics have limited resources, traditional Bassini operations are still carried out in underdeveloped nations.⁹ P.P. meshes that are lightweight may lower The prevalence of devel and groyne symptoms, as well as the chance of persistent groyne discomfort.¹⁰ To prevent issues, it has been suggested to utilise absorbable meshes, such as those composed of lactic acid polymer or lactic and glycolic acid copolymers. The inflammatory response, which totally breaks down the implanted prosthetic material via a hydrolytic reaction, may expose the patient to an unavoidable hernia recurrence.^{11,12} After the introduction of prosthetic mesh-based tension-free surgical repair, recurrence rates have been found to be less than 5%. Additionally, patient comfort has significantly improved when compared to conventional tension-producing procedures.^{13,14} Numerous studies have shown that a host of problems, including as infection, adhesions, shrinking, chronic discomfort, intestinal erosion, and inflammation, are linked to synthetic mesh repairs.^{15,16}

Our major goal was to compare the difficulties involved in tension-free Darn repair with Lichtenstein repair. We also examined the duration of hospital stay, the recurrence of the hernia, the time it took to return to regular activities, and the surgical site infections.

METHODOLOGY

Between April 2017 and April 2018, a descriptive cross-sectional research was carried out at the surgical unit of the Bacha Khan Medical Complex in Swabi. The age range of 18 to 60 years old who reported elective or emergency herniorrhaphy (darn repair or Mesh repair; Lichtenstein) and direct or indirect inguinal hernia repair with open hernioplasty were the inclusion criteria. Patients having a history of bilateral hernias, prior inguinal operations, recurrent inguinal hernias, ascites, A.S.A. class III or higher, gangrenous bowls as content of sac, and female patients were among the exclusion criteria. The hospital's ethics committee granted ethical permission. Every patient gave their informed permission after being informed

about the research. Following a thorough evaluation of the patients that included a history, examination, and pertinent investigation, the patients were split into two groups (Group A and Group B) by lottery. Patients in group A had mesh repair therapy, whereas those in group B received darn repair therapy. Every patient was operated on by the same surgeon. Cefotaxime, a prophylactic antibiotic, was given to all trial participants in two groups thirty minutes before to surgery and again every twelve hours thereafter. Every patient had their skin scrubbed with alcoholic chlorohexidine on the operating table

Group A

Hernioplasty and Lichtenstein tension-free mesh replacement procedures. To reveal and deliver a spermatic cord, the subcutaneous fat and Scarpa fascia were sliced in a line of the incision, and the external oblique aponeurosis was divided in lines of its fibres. The sac was located, worked out, turned inside out, cut, and tied off. To allow for some tension-free laxity, the synthetic mesh was positioned in the inguinal canal's posterior wall and secured to the defect's borders using prolene sutures. It was irrigated with regular saline prior to the inguinal canal closing gradually.

Group B

Tension-free continuous presence (0–1) suture between the conjoined tendon and inguinal ligament with apposition between these tissues was performed on these patients as part of a Darn Repair procedure. All of these individuals were operated on by the same surgical team. When the patients' conditions improved to a sufficient level, they were released.

Follow up

They were seen for the first time on the tenth day after their release, and then again six months and a year after the surgery. The research team merely performed a clinical examination on the participants. Complications from the two operations were noted as soon as possible (within 14 days), early after surgery (within 6 weeks), and late after surgery (within 1 year). SPSS software version 18.01 (SPSS Inc. Chicago, Illinois) for Windows was used to conduct the statistical analysis; the χ^2 test was used to analyse ordinal data and the Fisher exact test was used to analyse nominal variables..

RESULTS

One hundred twelve male patients were enrolled in this study. Demographic characteristics, i.e., age, B.M.I., A.S.A. score, comorbidities, and types of inguinal hernia, in A & B cohorts are shown in Table I

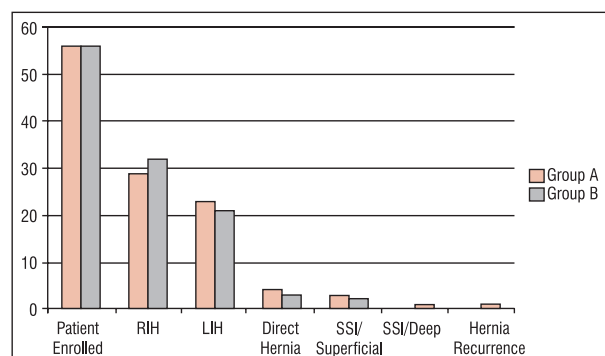


Figure 1

Table 1: Demographic Characteristics of patients in both the groups

Characteristics	Group A	Group B
Patients enrolled	56	56
Age (Mean, years)	44.3	46.8
Range	22-58	18-60
ASA (n%) I	40	37
ASA (n%) II	16	19
Controlled Diabetes Mellitus	3	9
COPD	7	6
History of smoking	18	20
R.I.H (Indirect)	29	32
L.I.H (Indirect)	23	21
Direct	4	3

Table 2: Outcome in both Groups

Characteristics	Group A	Group B
SSI / Superficial	3	2
SSI / Deep	0	1
Length of hospital stay days	1 - 4	1 - 2
Time taken to return to daily activities	14-40	14-21
Hernia recurrence	0	1

Groups did not vary significantly in terms of age, B.M.I., or A.S.A. score. Between the two groups, almost equal percentages of patients had elective or emergency surgery. In cohort B, there were a few diabetic individuals, but their numbers were under control. Both groups had postoperative pain that varied in severity and duration for up to two weeks; patients receiving Lichtenstein repair needed greater analgesics, which resulted in longer hospital admissions for those patients. Pain during mobility and the postoperative return to regular activities were noted more in a patient following Lichtenstein repair. Compared to Cohort B, which had 3.5% of superficial surgical infections, Cohort A had 5.3% of them. After a year of follow-up, there were no recurrence complications in Group A and 1.7% in Group B. Groups did not vary significantly in terms of age, B.M.I., or A.S.A. score. Between the two groups, almost equal percentages of patients had elective or emergency surgery. In cohort B, there were a few diabetic individuals, but their numbers were under control. Both groups had postoperative pain that varied in severity and duration for up to two weeks; patients receiving Lichtenstein repair needed greater analgesics, which resulted in longer hospital admissions for those patients. Pain during mobility and the postoperative return to regular activities were noted more in a patient following Lichtenstein repair. Compared to Cohort B, which had 3.5% of superficial surgical infections, Cohort A had 5.3% of them. After a year of follow-up, there were no recurrence complications in Group A and 1.7% in Group B. i.e., 1 patient had a recurrence.

DISCUSSION

Inguinal hernia repair ranks as the most frequent surgical operation (10–15%) carried out globally after an appendectomy.¹⁷ Many operational approaches have been documented since Bassini’s repair in 1887, but none is universally regarded as the finest. The content used is still debatable. While some of these methods are being used today, others are no longer relevant. Even with this constantly evolving trend of approaches, surgical acumen revolves on “tension-free repair as the best course of action.”¹⁹ According to thorough studies on inguinal surgery, the anterior abdominal wall is weak and deficient in this area. Fascia transversalis nonetheless incurs a cost in order to manage the intra-abdominal pressure, which leads to a hernia.²⁰ It seems sense that repair and posterior wall strengthening are required.²¹ In contrast to mesh-less

surgery, a randomised experiment shows no advantages for laparoscopic and open mesh repairs over open tension-free polypropylene mesh repair (Lichtenstein).¹² Therefore, the purpose of this research was to discuss our experience and compare the two widely used approaches (Lichtenstein V/S Darn). Similar to earlier research from Pakistan, the peak age for inguinal hernia in both groups in this study was between 20 and 48 years old.²² In neither group did we find any hematoma or seroma. Nevertheless, 5.3% and 3.5%, respectively, of the wound infections in Groups A and B—which were characterised as superficial and deep infections—were treated conservatively. In their research, Shillcutt et al. discovered 4.4% hematoma and 1.7% wound infections.²³ However, there are several studies in the medical literature with varying hematoma and infection rates.^{6,24} Consistent with previous research, Group A A-A & B's hospital stays lasted one to four days and one to two days, respectively.^{19,23} In comparison to Group B, Group A required more time to resume regular activities. This might be as a result of the extended duration and increased discomfort felt by mesh repair patients.²⁵ We have seen one patient with a straightforward Darn repair and zero in Lichtenstein, with recurrences in two distinct operations recorded. They were only monitored for a single year, however. Compared to Lichtenstein repair, there is a greater probability of vascular and ileoinguinal nerve damage, which might account for the increased rates of recurrence. These findings align with previous research as well.^{21,23} This clinical trial's design was well-thought-out and implemented to identify the logical endpoints between two procedures. Our results may thus be compared to those of other series.

CONCLUSION

We have discovered that the Lichtenstein repair has more promise than the Darn repair when it comes to the recurrence of an inguinal hernia. Nonetheless, this group required more analgesics and had longer hospital stays, which contributed to their increased rates of hospitalisation. This group of individuals also had somewhat greater rates of superficial surgical infections.

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