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Research Article

**EFFICACY OF MESH REPAIR IN INGUINAL HERNIA AND
ITS COMPLICATIONS**Muhammad Izhar¹, Ziyad Ahmad²¹Khyber Medical College, Peshawar izharlala4@gmail.com, ²Mardan Medical Complex, MTI
ziyadamc228@gmail.com**Abstract:****Objective:** To estimate the effectiveness of mesh repair in inguinal hernia.**Study design:** A Prospective study.**Place and Duration:** In the department of Surgery for one-year duration from June 2020 to June 2021 in the Khyber Medical College and teaching hospital Peshawar.**Method:** A total of 112 patients underwent Mesh repair of 116 inguinal hernia, as 04 patients had bilateral hernias.**Inclusion Criteria:** Patient with clinical presentation of inguinal Hernia either primary or recurrent in nature.**Exclusion Criteria:** Patient with other types of groin and extra- groin hernia. Patient, too feeble to withstand surgery.**Results:** 112 patients were operated on and included in the study. The follow-up period was one-year, the follow-up rate was 75.0%, 83.03% (n: 93) belonged to the urban area, and 16.97% (n = 19) from remote areas. The age of the patients varies from 21 to 70 years. They were all men. With the main percentage of 31.25% (n = 35) in the 21-30 age group. The incidence of this type of hernia was first clinically diagnosed and finally confirmed during surgery. 85 patients (75.89%) had an indirect inguinal hernia and 27 (24.10%) had a direct inguinal hernia. There were no serious intraoperative complications or postoperative death. 36 (32.14%) complications were observed. They were all managed conservatively.**Conclusions:** Inguinal hernia is very common in men, and Lichtenstein repair can be performed safely, quickly, without stress in surgical departments with excellent results, with low postoperative complications and with very minimal chances of recurrence.**Keywords:** Inguinal Hernia, Lichtenstein repair, Propylene mesh, Open hernia repair**Corresponding author:****Muhammad Izhar**Khyber Medical College, Peshawar izharlala4@gmail.com

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INTRODUCTION:

The hernia comes from the epoch meaning "bud or shoot". A Hernia is a protrusion of a viscous or part of a viscous through an abnormal opening in the walls of its containing cavity [1-2]. Inguinal hernia is the protrusion of the contents of the abdomen through the inguinal region. It is divided into direct and indirect varieties [3]. Hernia growth rate is highest in the USA (280 / 100,000) 180 and 100 are grown especially in Australia and England. Inguinal hernia can occur at any age and shows a distinct advantage in men (20: 1) [4]. In general, all hernias should be repaired unless local or systemic conditions in the patient prevent a safe treatment outcome. There are many different techniques for inguinal hernia repair. Whichever method is used, meticulous technique is essential [5-6]. The foundations of a modern approach to hernia repair were laid by Marcy in 1871, Bassini in 1884 with Shouldice in 1951. Bassini repair remained the gold standard in hernia repair until 2002, when Liechtenstein was recognized as the gold standard [7]. Bassini's repair consists in bringing the defect of the posterior abdominal wall, the deep inguinal ring closer together and bringing the fused tendon closer to the inguinal ligament. Lichtenstein repair requires the use of a net on the back wall, thus strengthening the back wall without stressing it [8]. The principles of repair are excision or reduction of the hernial sac and repair of the back wall of the inguinal canal. The inguinal hernia remains one of the most common general surgical procedures, with approximately 10 to 20% being performed because of a relapse [9]. Relapses were a serious problem after hernia surgery. Prosthetic materials are increasingly used to treat hernias to prevent recurrence. Their use is associated with several advantages, such as less post-operative pain, quick recovery, low relapse rate. Mesh repair is recommended by several specialized hernia centers, showing a recurrence rate of less than 2 percent. Reviews by specialized hernia centres show that mesh repair has a recurrence rate of 0.2 percent [10-11].

MATERIAL AND METHODS:

He was not involved in inclusions and retention: • Until the first recurrent inguinal hernia structure was clinically revealed. • Extra lingual hernias remain in the other groin until excluded from the study. • Invalids to ASA 4 and 5. Entered service through the entire polyclinic.

All patients were operated on according to the planned list. A detailed interview and physical examination were performed in each case. A

preoperative examination of patients was performed with a complete blood test, a complete urinalysis, and blood glucose levels. In a patient aged 45 years and older, ECG and chest X-ray were performed and the circulatory and respiratory status was assessed. P / R and ultrasound examinations of the prostate gland were performed to assess the urine status of patients over 50 years of age. All data was saved in a pre-designed Proforma. All operations were performed under spinal anaesthesia. Hernias were classified as direct or indirect according to their anatomical positions. Data on operational and postoperative complications were recorded. Patients were admitted to the outpatient clinic one week after surgery in order to detect possible complications of the wound and after 1 month, 6 months, 1 years after surgery. Pre-operative preparation included shaving the operating field, intravenous antibiotics during induction, followed by 48-hour maintenance, and prophylaxis of deep vein thrombosis. Clexane 20 mg s / c OD for obese patients. This prophylactic L.M.W heparin was continued until the patient was mobilized. Postoperative antibiotic dose, anaesthesia and early mobilization were taken care of. Patients were discharged from the hospital after 24 to 72 hours without pain or complications. The sutures were removed on the eighth postoperative day on an outpatient basis. The wound and inguinal area of the scrotum were also examined for possible complications. Complications occurring in the hospital and in the first month after surgery were designated as early complications, and complications occurring 1 month after surgery as late complications. Patients were advised to resume daily life after 1 week with light work instructions such as office work and hard work after a month and a half.

RESULTS:

A total of 112 patients underwent surgery and were included in this study. The follow-up period was 1 year, and the follow-up rate was 75.0%. During this initial follow-up, it was especially interesting to learn about the patients' own assessments of their physical limitations in the first month after surgery. 83.03% (n: 93) are in urban areas and 16.97% (n: 19) in remote areas. Effort during defecation and urination was the main predisposing factor for hernia formation, i.e. 35.71% (n: 40). Other factors contributing to hernia formation include smoking 24.10% (n: 27), chronic cough 14.28% (n: 16), weight lifting 10.71% (n: 12), and obesity 6.25% (n: 7). No identified contributing factors were found in ten patients. The age of the patients ranged from 21 to 70 years as shown in the table one.

Table 1: Age Distribution of Patients

Age Group	Frequency	Percentage
21-30	35	31.25
31-40	21	18.75
41-50	22	19.64
Above 51	34	30.35
Total	112	100

Table 2: Type of Hernia

Type of Hernia	Frequency	Percentage
Direct	27	24.10
Indirect	85	75.89
Total	112	100

Table 3: Post Operative Complications

Complications	Frequency	Percentage
Wound Hematoma	07	6.2
Wound infection	08	7.1
Seroma	04	3.5
Testicular atrophy	Nil	--
Urinary Retention	04	3.5
DVT	Nil	--
Scrotal Edema	07	6.2
Mesh Infection	Nil	--
Recurrence	Nil	--
Post operative neuralgia	06	5.3
Total	36	32.14

The frequency of the types of hernias is presented in Table 2. There were no serious intraoperative complications or postoperative deaths. 36 (32.14%) complications were observed. All of them were treated conservatively and are presented in Table 3. Fifty-six patients were discharged in two days, i.e. 50%, 36 (32.14%) in three days, 14 (12.50%) in four days, and 06 (5.35%) stayed long in hospital. Up to one year, the disease did not recur and there were no significant complications related to the operation.

DISCUSSION:

The history of inguinal hernia treatment has evolved from life-saving procedures for strangulated hernias in the past to short-term elective surgery for uncomplicated hernias today [10-11]. In this new era of evidence-based medicine, any hernia repair procedure must be carefully evaluated for its benefits and costs [12]. Benefits must be measured clinically, socially and economically. Similarly, benefits are assessed across the patient environment and healthcare system [13]. It is no longer appropriate to

demonstrate that certain procedures are working. These procedures should be evaluated in appropriately conducted randomized controlled trials to eliminate collective variables [14]. The most popular operations among surgeons today are shouldice repair, Lichtenstein repair, and laparoscopic transabdominal preperitoneal repair and retroperitoneal-only repair. Shouldice and Lichtenstein repairs have distinct advantages, such as being performed under local anaesthesia, a low rate of postoperative complications, and a low rate of distant recurrences [15]. An additional benefit of Lichtenstein repair is that it is a simpler operation with a shorter learning curve than Shouldice repair. Lichtenstein repair is currently the most appropriate surgery for primary inguinal hernias. In the hands of non-specialized surgeons, it is associated with excellent treatment outcomes and results in less post-operative pain, earlier return to normal activities, and fewer relapses compared to suture repair [16]. The basic principles of the standard Lichtenstein tension free hernia mean that its primary purpose is to overcome adverse effects such as abdominal pressure gradient and mesh contraction. Drye's study of abdominal pressure showed an average pressure of 8 cm H₂O in the supine position compared to 12 cm H₂O in the standing position [17]. Various activities, such as exertion and vomiting, raised the pressure above 80 cm H₂O. According to our laboratory and clinical studies reported in 1996, the mesh after implantation shrinks by about 20% in both directions, as confirmed by Klinge et al in 1998.

The study, which is a prospective study, included 112 patients over a two-year period. I did not experience inguinal hernias in women during this period, but in another study conducted at the Rawalpindi Combined Military Hospital, the male-to-female ratio was 46.5:1. If we analyze the literature, we find that twenty percent have bilateral inguinal hernias and is the most common type of indirect hernia [18]. In my study, I found that only 4% had bilateral inguinal hernias and 76% had indirect inguinal hernias. In my study, I found it to be farther to the right of the patient, as noted in Bailey and Love (24th ed.). If we compare our relapse rate (0%) during the two-and-a-half-year follow-up with an international study by Peter Danielsson et al. in a regional hospital in Sweden, they obtained the same result, i.e. zero relapse rate over a one-year period. Another study in Queensway, England, showed the same results after a one-year follow-up and recommended Lichtenstein repair as the treatment of choice for the treatment of an inguinal hernia because of the high patient satisfaction, minimal complications, and low recurrence rate in my study by 5.3% [18-19].

Therefore, the overall recurrence rate is the same over a 12–24-month follow-up period in local and international studies, but there are slight differences in the incidence of other complications. Inguinal hernias are very common in men. Most of the patients had a right inguinal hernia due to a delayed descent of the right testicle and an open vaginal process. Most patients have more than one risk factor that causes an inguinal hernia. Indirect inguinal hernia is common in young and middle age. The tension-free repair of the Lichtenstein mesh can be performed safely and is well-tolerated with minimal post-operative pain. The surgical procedure is usually simple. After the procedure, a minimal number of minor complications was observed. No patient required surgery to heal a complication. It did not recur with this type of treatment in our research period. Patients gladly accepted this procedure. Minimal disruption due to early return to normal life [20].

CONCLUSION:

Lichtenstein Repair can be performed in the surgical wards safely, quickly, without tension, with excellent results, few postoperative complications and a minimal chance of recurrence. Inguinal hernia repair with a mesh is much better than non-mesh repair in terms of relapses and chronic postoperative pain.

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