Original Article

Inguinal Hernia's Repair

Tension-Free Mesh Repair of Inguinal Hernias; The Lichtenstein Technique – A Feasible Option

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ABSTRACT

Objective: The objective of study is to determine the feasibility, safety and effectiveness of Lichtenstein technique the tension free mesh repair of inguinal hernias and also to record the early and late postoperative complications of hernioplasty.
Study Design: Prospective study
Place and Duration of Study: This study was carried out at the Department of Surgery, Unit-I Glulam Muhammad Maher Medical College Teaching Hospital, Sukkur from May 2009 to April 2012.
Materials and Methods: Total 210 male patients with inguinal hernias admitted through OPD as an elective cases were included in this study .Exclusion criteria was patients with obstructed inguinal hernia came in emergency department. Clinically 20% patients had bilateral and 80 % had one sided inguinal hernias. Mean age of the patient was 45 years (range, 18– 70 years) .189 patients (90%) were operated under spinal anesthesia while remaining 21 patients (10%) under general anesthesia .All patients were follow-up for the period of 2 years in the out –patient department .
Results: The present study showed the early and late postoperative complications (morbidity = 8%) such as retention of urine in 4 patients (2%), Hematoma in 3 patients (1.5%), seroma formation in 2 patients (1 %) , Cord induration in 3 patients (1.5 %) and postoperative neuralgia in 4 patients(2%). After a follow-up for 2 years, there was no evidence of recurrence or mesh rejection.
Conclusion: This study showed that Lichtenstein tension- free hernioplasty is a simple, feasible and safe technique for repair of inguinal hernias with a low recurrence rate and low morbidity .
Key Words: Inguinal hernias, Lichtenstein tension free hernioplasty, Recurrence

Citation of article: Jat **MA. Tension- Free Mesh Repair of Inguinal Hernias; The Lichtenstein Technique – A Feasible Option. Med Forum 2016;27(2):7-9.**

INTRODUCTION

Hernia repair is one of the common surgical procedure performed in general surgical practice .Recurrence following repair of inguinal hernias without mesh is a common problem so to reduce the incidence of recurrence it is recommended that apply a mesh for repair of inguinal hernias .Tension –free hernioplasty, a term coined by Irving L. Lichtenstein, MD, began in June 1984 at the Lichtenstein Hernia Institute.[2] This technique is a tension free repair of inguinal hernias with a low recurrence rate.
The studies by stoppa, et al[3] and by Lichtenstein [4], as well as the innovation of laparoscopic hernia repair[5,6]showed that tension free hernioplasty has many advantages, such as simplicity, effectiveness, safety, rapid returned to normal activities and low recurrence rate . Recurrence, the ultimate nightmare to health care costs and pose a further economic burden .Berliner noted that follow –up of hernia is notoriously difficult; the dissatisfied patient will seek medical services elsewhere.[7]

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MATERIALS AND METHODS

The present prospective study was conducted in the Department of Surgery, unit-I at Ghulam Muhammad Maher Medical College Teaching Hospital, sukkur during the three years period from May 2009 to April 2012.
Inclusion criteria was 210 male patients with inguinal hernias admitted in surgical ward through OPD. Exclusion criteria was obstructed inguinal hernia came in emergency department. .On admission, all patients were clinically evaluated and findings were recorded on proforma. The mean age of patient was 45 years (range, 18–70 years). Clinically 20% patients had bilateral and 80 % had one sided Inguinal hernias. There were 95 (45%) right-sided hernias and 73 (35%) left sided hernias. In 189 patients (90%) hernioplasty was done under spinal anesthesia whereas 21 patients (10%) under general anesthesia. All operative findings and steps of operations were recorded in operative notes.

In Lichtenstein technique a polypropylene mesh (6 x 11 cm) was kept in the floor of the inguinal canal and sutured with 2/0 prolene. It is important to keep the mesh slightly relaxed and not to taut to compensate for the patient stand up and to compensate for the inevitable future shrinkage of approximately 20% .[8]To minimizing recurrence the mesh extending 2cm medial to pubis tubercle and 3 cm lateral to the internal ring . 13 All patients were given 1 doses of cefotaxime sodium 1 g intravenous as prophylactic antibiotics at the time of induction and then 2 dose postoperatively with interval of 8 and 16 hours. Postoperative analgesia was given in the form of paracetamol or NSAIDS. The duration of the hospitalization was 2 -3 days. Post operatively all patients were urged to attend the follow –up in out- patient department at 3 months, 6 months and then yearly .

RESULTS

Total of 210 male patients with inguinal hernias admitted in surgical ward through OPD were included. The mean age of the patient was 45 years (range, 18 – 70 years). The early postoperative complications occurred (morbidity = 8 %) such as acute urinary retention in 4 patients (2%), Seroma in 2 patients (1%) , hematoma in 3 patients (1.5 %) , Cord induration in 3 patients (1. 5 %) and postoperative neuralgia in 4 patients (2 %) patients .The Late complications such as Sinus formation , ischemic orchitis, and testicular atrophy were not seen in any case .After a follow-up for 2 years there was no evidence of recurrence or mesh rejection as showed in table 1 .

The average operating time was 40 minutes (range 30 – 60 minutes). The operative findings were recorded i.e indirect hernia in 60 % of cases (126) ,direct in 37 % (78) and of the pantaloons (mixed) type in 3 % (6) as shown in Table -2.

Table No.1: The early and late postoperative complications of hernioplasty .

Name of complication	No of patients	Percentage
Early		
Retention of urine	4	2 %
Seroma formation	2	1 %
Wound hematoma	3	1.5 %
Cord induration	3	1.5 %
Postoperative neuralgia	4	2 %
Late		
Testicular atrophy	0	0 %
Sinus formation	0	0 %
Recurrence	0	0 %
Mesh rejection	0	0 %

Table No.2: The distribution of hernia according to clinical and operative findings.

Types of hernia	Total patients n = 210	Percentage
On Clinical finding		
Rt sided hernias	95	45 %
Lt sided hernias	73	35 %
Bilateral hernias	42	20 %
On operative finding		
Indirect hernias	126	60 %
Direct hernias	78	37 %
Pantaloons hernias	6	3 %

DISCUSSION

Hernia repair is the common surgical procedure performed in the surgical practice.6Advanced surgical techniques, using prosthetic materials prolene mesh have significantly improved outcomes of patients. Edgardo Bassini (1844-1924) is credited for developing and performing the first modern hernioplasty. He had a clear insight into the anatomy and physiology of the inguinal region .He landmarks series ignited the enthusiasm of surgeons worldwide .[9] In reality the authentic Bassini operation includes deliberate and complete dissection to expose the anatomy in its entirety ,a repair in which the internal oblique muscle ,the transverses abdominal muscle ,and the transversalis fascia (Bassini triple layer) were approximated to both the femoral sheath and the enrolled edge of the inguinal ligament with interrupted sutures . [10] Pre –Bassini, best centers in Europe and North America reported mortality rates of 7% and recurrence rate after one year was 30-40 % .[11] Bassini s astounding result earned him the name of " Father of Modern Herniorraphy . The period 1880 to 1890 can justifiably be termed "the decade of hernia surgery ".He reported 206 cases with zero mortality and 5 years follow –up a recurrence of 2.7 %. 11 In 1953 Earle shouldice modified the pristine Bassini repair with less than 1% recurrence at 10 years .[12] It has become the " gold standard " worldwide , by which other hernioplasties are compared .The shouldice technique employs complicated double breasting repair , ,time consuming and stiches under tension cause pain with all movements and restricts physical activity for several weeks . Randomized trials shows recurrence rate of 4- 10 % and increase in the incidence (40 %) of femoral hernias following the shouldice repair. [13] Despite its popularity in the "80 and '90s less than 20 % consultant surgeons were employing this technique in the U.K.[14] The Lichtenstein technique is very simple ,effective, is associated with a very low recurrence rates (ranging from 0 to 2 % in the literature) and can be performed under local or regional anesthesia.[15,16] The method is simple, can be performed by all the surgeons – even those without special interest in hernia surgery. In this study the overall morbidity was 8% and recurrence rate was 0 %. In other studies

by G H Sakorafas, et al, and M Aurangzeb the overall morbidity was 2.5%, 12 % and recurrence rate (0.2 %), 0 % respectively.[17,18] Lichtenstein reported an infection rate of less than 0.3% so the belief that the risk of infection is high is unfounded .[19]

CONCLUSION

The present study showed that Lichtenstein tension free hernioplasty is a simple, safe, and feasible option with a very low recurrence rate and low morbidity. Therefore this technique can also be performed by non-hernia specialist General Surgeon.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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