

Surgical Outcome of Totally Extra Peritoneal (TEP) Laparoscopic Repair Versus Tension Free Mesh Repair (Lichtenstein) in Inguinal Hernias

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Introduction: This project was aimed to determine the results of totally extraperitoneal (TEP) versus Lichtenstein repair for inguinal hernia in west surgical ward, Mayo hospital / Lahore.

Objective: To study the outcome of laparoscopic (TEP) versus tension free mesh Lichtenstein repair in terms of hospital stay, patients recovery, morbidity and recurrence.

Study design: It is a Quasi experimental design to compare the surgical outcome of TEPP versus Lichtenstein repair in inguinal hernias.

Place and Duration: The study was carried out in west surgical ward, Mayo hospital Lahore over a period of more than one year from 1st January 2009 to 10th February 2010.

Materials and methods: 60 patients of inguinal hernias were included in this study, all were males, two groups were formed each containing 30 patients. Group "A" underwent laparoscopic mesh repair while group "B" had Lichtenstein repair. All the patients ranged from 25 – 60 yrs. The data was collected on a preformed proforma and the results were analyzed in terms of percentage.

Results: Post-operative pain in laparoscopic hernia repair was less as compared to lichtenstein repair, the hospital stay after laparoscopic hernia was 24hrs while in lichtenstein repair it was 48hrs. The recurrence rate was 3% in laparoscopic repair while in lichtenstein repair no recurrence was seen. There were no septic complications seen in both groups in 1 year follow up time.

Conclusion: Early recovery, less hospital stay and less post-operative pain was observed in laparoscopic repair while in terms of recurrence no significant difference was seen.

Keywords: Inguinal hernia, TEP, Lichtenstein, mesh repair.

Introduction

Protrusion of a viscus or its part through an abnormal opening in the walls of its containing cavity in which it is contained is described as a hernia. The commonest types are inguinal, femoral and umbilical, accounting for 75% of cases.¹ Inguinal hernias are more common in males. In normal individuals the strength of the posterior wall and the shutter mechanism of the inguinal canal during raised intra abdominal pressure prevents the formation of hernia.²

Inguinal hernia is of two types Direct and Indirect. Direct inguinal hernia makes up about 15% of the inguinal hernias. Indirect inguinal hernia enters into the inguinal canal through deep ring and is lateral to the inferior epigastric vessels. While direct inguinal hernia comes within the Hasselbach's triangle and passes medial to inferior epigastric vessels.³

Surgery is the only treatment for hernia, if a hernia is uncomplicated then surgery is performed on elective basis. If the hernia becomes complicated, surgery must be done earliest possible. The advantages of laparoscopic hernia includes less post-operative pain and early return to work as compared to the open repair but it is more expensive and sometimes carries serious complications.⁴

Recurrence rate varies between 0.2% and 15% and it depends on the technique applied, only a better technique mainly concentrating on strengthening of the posterior wall can reduce the recurrence rate less than 2%.¹ Laparoscopic surgery has shown recurrence rates as less as 0.25% to 2%.⁵ In case of any previous abdominal surgery, laparoscopic surgery is not possible. Recurrence is usually seen within 5 yrs after surgery. In terms of short term results laparoscopic surgery is better than the open mesh repairs but the long term results of laparoscopic and open mesh repairs are still awaited.⁶ The Laparoscopic repairs are better in terms of complications and pain associated factors however for further evaluation well structured trials will improve the techniques and surgeons expertise.⁷

Lichtenstein mesh repair hernia is an effective and easy method with low morbidity and recurrence rate and it can be performed under local anesthesia.⁸

Materials and Methods

This is a randomized clinical trial including 60 patients of inguinal hernias all were males, divided into two groups containing 30 patients in each group. Group 'A' underwent laparoscopic mesh repair while group 'B' had Lichtenstein

repair. The study was conducted for the period of 1 year in west surgical ward, Mayo Hospital, Lahore. All the patients with inguinal hernias both Direct and Indirect included, ranged from 25-60yrs. Patients having previous abdominal surgery were not considered for TEP repair. The data was collected on a preformed proforma and the results were analyzed in terms of percentage.

Results

In group ‘A’ TEP and in group ‘B’ lichtenstein repair was done. Post-operative pain in group ‘A’ with laparoscopic repair showed less pain as compared to group ‘B’ patients with lichtenstein repair. The assessment of post-operative pain was done by the analgesic dose and recovery time. The dose of analgesia both NSAIDS and narcotic analgesic varied from patient to patient but laparoscopic repair had shorter recovery period and less analgesia dose. The hospital stay period in laparoscopic hernia repairs was almost 24 - 36 hrs while in Lichtenstein repair it was 48-72 hrs so laparoscopic hernia repair had shorter hospital stay.

Table 1: Characteristics of patients related to both groups ‘A’ and ‘B’.

Sr. No.	Variable	Group A (n = 30)	Group B (n = 30)
1.	Mean age	40 years	40 years
2.	Gender :		
	Males	30	30
	Females	none	none
3.	Types of hernia:		
	Direct	10	12
	Indirect	20	18

As far as recurrence, there were only two patients (6.6%) who had recurrence in TEP group while no recur-

Table 2: Outcome of group ‘A’ and group ‘B’

Sr. No.	Outcome	Group A	Group B
1.	Dose of analgesia in early post op period (24 hrs):		
	Narcotic	15 – 20 mg	25 – 30 mg
	NSAIDS	225 mg	225 – 300 mg
2.	Duration of hospital stay	24 hrs	48 hrs
3.	Recovery period	2 – 3 weeks	4 weeks
4.	Recurrence:	02	None
5.	Scrotal hematoma	01	01
6.	Stitch sinus	01	None
7.	Infection	none	none

rence was seen in Lichtenstein group.

In group ‘A’ scrotal hematoma was seen only in one patient (3.3%) in early post-operative period and one patient (3.3%) presented with stitch sinus from the port site after four months. In group ‘B’ only one patient (3.3%) had scrotal edema in early post-operative period, which was resolved after one week. Infection was not observed in both the groups during one year follow up.

Discussion

It was a comparative study carried out on 60 patients in two groups. In group ‘A’, hernias were repaired laparoscopically and in group ‘B’ Lichtenstein repair was done. In this study it was seen that post-operative pain was less in group ‘A’ as compared to group ‘B’ patients and the analgesia dose required in group ‘A’ patients was much less as compared to group ‘B’ patients. Similar results were seen on study carried out by Dr. Snehal Fegade and Prof. Dr. R.K. Mishra published in current medical journal of India.⁹ Another study carried out by R.S. Chung and D.Y. Rowland in department of surgery in East Cleveland, USA on 2471 patients showed that the post-operative pain after laparoscopic and tension free mesh repairs showed no significant advantage.¹⁰ His results were different from our study as there might be some difference between the technique and surgeon’s expertise.

In terms of post-operative hospital stay and recovery, TEP repair showed early recovery period and less hospital stay. The mean time discharged from the hospital was 24-36hrs in TEP while 48-72hrs in Lichtenstein repair. A study carried out on 239 patients by Bringman Sven et al published in annals of surgery in January 2003 showed that all the patients were discharged within 24hrs and in TEP the median sick leave period was 5 days while in Lichtenstein repair it was 7 days.¹¹ Patients with open mesh repair were kept in ward for 48-72hrs to give I/V antibiotics and analgesics as post-operative recovery in group ‘B’ was longer than group ‘A’ patients.

The infection rate was almost zero in both the groups. In group ‘A’ patient only one patient (3.3%) had scrotal hematoma and one patient (3.3%) presented with stitch sinus. In group ‘B’ one patient (3.3%) showed scrotal edema which resolved spontaneously after one week. A study conducted by George H Sakorafas, Ioannis Hali-kias et al. in department of surgery at Air Force Hospital, Athens, Greece on 540 patients, observed that no patient developed infection related to foreign body i.e., mesh.⁸

In terms of recurrence, in this study out of 60 patients, two patients repaired laparoscopically showed recurrence (6.6%). One patient had a true recurrence while the other had a false recurrence. In group ‘B’ no recurrence was observed in one year follow up period. Study carried out in

department of surgery, Oulu University Hospital, Finland in September 2003 on 123 patients showed recurrence only in five patients (8%) in TEP repair and two patients (3.2%) in Lichtenstein group.¹² Another study by Bringman, Sven published in *Annals of Surgery* in January 2003 in 299 patients showed two recurrence (0.7%) in TEP and two (0.7%) in open mesh repair.² In terms of recurrence, laparoscopic repairs showed more recurrence than the Lichtenstein repair because laparoscopic hernia repairs are technically more difficult to perform and is associated with longer learning curve so the results are variable in different hands. Our recurrence rate is however quite comparable to the international studies.

Conclusion

The laparoscopic hernia repairs are better as compared to the Lichtenstein mesh repair hernias in terms of post-operative pain, hospital stay, less median sick leave time. As far as infection and recurrence is concerned, Lichtenstein and TEP repair showed comparable results.

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