

A COMPARISON OF LAPAROSCOPIC TRANSABDOMINAL PRE-PERITONEAL (TAPP) VERSUS LICHTENSTEIN REPAIR FOR INGUINAL HERNIAS – A RETROSPECTIVE STUDY

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ABSTRACT

Background: Inguinal hernia is undoubtedly the commonest type of hernia and has got a significant burden of morbidity and mortality posed by its symptoms and complications, especially if left untreated. Mesh hernioplasty is a well-established cure commonly done by the open method (Lichtenstein) and less so by the laparoscopic method (TAPP).

Objectives: To compare the outcome of TAPP and Lichtenstein repair for inguinal hernias.

Methods: In this study, data from the last one year was taken from the Dept of Surgery, LGH, Lahore. Eighty patients with mean ages of group-A (40.4±10.69) and group B (40.52±11.03) years based on inclusion criteria were selected. In group A, TAPP repair was done. In group B, Lichtenstein repair was done. All research parameters were recorded and calculated to get results.

Results: Mean operative time was significantly lower for Lichtenstein Repair as compared to TAPP, i.e. 44.05 vs. 52.27, P-Value = 0.001. The mean hospital stay was significantly short for TAPP as that Lichtenstein repairs i.e. 2.05 days vs. 3.02 days, p-value=0.000. However, the postoperative infection rate was higher in patients in the Lichtenstein Repair group i.e. TAPP: 10% vs Lichtenstein: 17.5%.

Conclusion: TAPP is more effective than Lichtenstein repair by offering the patients a shorter hospital stay and less postoperative infection for treating inguinal hernia but has a little longer operative time.

Keywords: Laparoscopic, Transabdominal Preperitoneal (TAPP), Lichtenstein (Open), inguinal hernias, Operative time, Hospital stay, post-operative infection.

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INTRODUCTION

Inguinal hernia is a result of the weakness of the lower abdomen wall in the inguinal region with bulging of abdominal contents into the inguinal region. Whether

direct or indirect, it has troublesome symptoms of pain, discomfort, inability to move freely and do work causing significant morbidity. Moreover, if left untreated it sometimes causes intestinal obstruction and even perforation having a high mortality⁴⁻⁵. Inguinal hernia repair owing to high prevalence of inguinal hernia is one of the most common surgical procedures traditionally done by Lichtenstein (Open) method. However, recently transabdominal preperitoneal (TAPP), a laparoscopic hernia repair, has gained popularity for its advantage of lesser pain, shorter hospital stays and reduced postoperative complications. Both these methods are

done in routine for inguinal hernia repair. Rationale of this study was to delineate the advantages and disadvantages of laparoscopic TAPP versus Lichtenstein repair for inguinal hernias⁴⁻⁵.

METHODS

This was a retrospective study carried out at Department of Surgery Unit-III, LGH / PGMI / AMC, Lahore, extends over a period of 12 months from Mar, 2018 to Mar 2019. A total of 80 male patients of ages 20-60 years having inguinal hernia diagnosed clinically and confirmed on inguinoscrotal ultrasound scan with ASA grade I and II were selected who had no inguinal surgery done before. While those with obstruction, strangulation and perforation or a previous history of such complications were excluded. All patients with hydrocele, lymphadenopathy, malignancies weather inguinal or elsewhere and female patients were also excluded. Half of the patients underwent TAPP (Laparoscopic) added it Group A and the other half Lichtenstein (Open) added in Group-B. The demographic information like name, age, ASA status and duration of hernia was recorded. In the group-A, TAPP repair was done by creating a preperitoneal space laparoscopically and closing this space using a titanium tacker with a prolene mesh placed in it. In the group-B, Lichtenstein (Open) repair was done via suprainguinal approach by placing a mesh in inguinal canal between it's anterior and posterior walls. All surgeries were done by a single surgical team with assistance of researcher. Same technique of repair and medication were used in all patients to eliminate bias. Duration of surgery, total stay at hospital and infection at 7th day post-op were noted.

RESULTS

Mean duration of hernia in TAPP and in Lichtenstein repair group was 3.40±1.87 and 3.50±1.69 months respectively. Patients with small duration (1-2 Months, p-value=0.275) did not show any significant difference for operative time in both treatment groups. However, patients with longer duration of disease showed significantly higher operative duration for patients in TAPP group.

Patients for whom the duration of disease was 1-4 months among them mean hospital stay was significantly short in TAPP group. However, patients for whom duration of disease was 5-6 months among them hospital stay was although short in TAPP group but it was not statistically significant.

Hospital stay was significantly short for TAPP in patients with ASA status II. However, patients with ASA status I also had short hospital stay in TAPP group but it was not statistically significant.

Table-1: Operative Time comparison

Minutes	TAAP	Lichtenstein
N	40	40
Mean	52.27	44.05
SD	10.01	10.26
Minimum	36.0	30.0
Maximum	70.0	60.0
p-value	0.	001

Table-2: Hospital stay comparison

Days	TAAP	Lichtenstein
n	40	40
Mean	2.05	3.02
SD	.90	1.42
Minimum	1.0	1.0
Maximum	3.0	5.0
p-value	0.	000

Table-3: Post-OP infection comparison

	TAAP	Lichtenstein	Total
Post-OP Yes	4(10.0%)	7(17.5%)	11
Infection No	36(90.0%)	33(82.5%)	69
Total	40	40	80
Chi-Square Test = 0.949		p-value= 0.330	

Table-4: Hospital stay stratified for ASA

ASA	Group	Mean	SD	p- value
I	TAAP	2.13	.88	0.120
	Lichtenstein	2.83	1.65	
II	TAAP	1.94	.93	0.001
	Lichtenstein	3.18	1.22	

Table-5: Hospital stay stratified for duration of Hernia

Duration	Group	Mean	SD	p-value
1-2	TAAP	1.93	.96	0.001
	Lichtenstein	3.38	1.04	
3-4	TAAP	1.83	.83	0.050
	Lichtenstein	2.86	1.68	
5-6	TAAP	2.38	.86	0.370
	Lichtenstein	2.83	1.46	

DISCUSSION

Inguinal hernia repairs is undoubtedly one of the most common operations in general surgical practice. In addition to the classic open repair technique by Lichtenstein a recent minimally invasive approach is being increasingly preformed to manage groin hernias. However, the optimal surgical option still remains a controversy.¹ Proponents of TAPP (Laparoscopic) and Lichtenstein (Open) repair are still in untiring debate for deciding superiority of one over the other¹²⁻¹³. Those in favor of laparoscopic method claim that it is less scaring, less painful, less off time from work, ideal for bilateral

hernia and recurrent hernias, with fewer complications. Those advocating open surgery are of opinion that it can be performed under local anesthesia as day case surgery without involving the abdominal cavity and is cost effective too in comparison.

In this study TAPP was compared with Lichtenstein's method in terms of the operative time, hospital stay and postoperative infection. Mean value of the operative time was significantly lower for Lichtenstein repair as compared to TAPP. i.e. 44.05 vs. 52.27, P-Value = 0.001 and mean hospital stay was significantly short for TAPP as that Lichtenstein repair. i.e. 2.05 days vs. 3.02 days, P-Value = 0.000. No significant difference was seen for postoperative infection for TAPP and Lichtenstein repair. However postoperative infection rate was higher in patients in Lichtenstein repair group i.e. TAPP: 10% vs. Lichtenstein repair: 17.5%, p-value=0.330. Recently a local study from Bahawalpur reported similar findings i.e. shorter operative time for Lichtenstein repair and shorter hospital stay with TAPP.¹⁰

Akhtar M.S findings are also consistent with the results of this study in terms of shorter hospital stay (1.8 days & Lichtenstein repair:2.5 days, p-value<0.001), less postoperative infection, higher operative time (Open:39.3 min & TAPP:51.4 min, p-value<0.001) for the laparoscopic approach.²

The present study affirms the view that laparoscopic (TAPP) mesh repair of inguinal hernias offers substantial advantages in comparison with the open (Lichtenstein) mesh repair and should be available option for all patients requiring elective hernioplasty.

CONCLUSION

This study has confirmed that TAPP (Laparoscopic) is more effective than Lichtenstein (Open) repair in terms of shorter hospital stay and less postoperative infection for treating inguinal hernia. While the operative times were a little more in case of a TAPP repair.

ETHICAL APPROVAL

The study was approved by the Institutional Review Board of Postgraduate Medical Institute / Ameer- ud-Din Medical College/ Lahore General hospital, Lahore via Ref. No. 00-32-22 Dated January 01, 2022

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AUTHOR'S CONTRIBUTIONS

AJ: Manuscript writing (Introduction), Supervision
FSM: Literature Review, Inclusion & exclusion criteria
MK: Procedures detail, Operative methods
SA: Methodology, Discussion
MA: Manuscript writing, Editing
MA: Thesis writing, Data collection