

Research Article**A study of repair of inguinal hernia comparing open with laparoscopic transabdominal preperitoneal.****Mohammad Afzal ud din¹, Mohammad Muttahiruddin², Syed Badir Duja³, Ramendra Talukdar⁴, Ajay Verma⁵***Mohammad Afzal ud din...Associate Professor, department of surgery, Alfalahschool of medical sciences and research, India**Mohammad Muttahiruddin...Registrar, department of community medicine, Government Medical College Handwara.**Syed Badir Duja, Resident emergency medicine, Dammam**Ramendra Talukdar... Prof and HOD Department of surgery, Department of surgery, Alfalah School of medical sciences and research, Haryana**Ajay Verma, Professor, Department of surgery, Department of surgery, Alfalah School of medical sciences and research, Haryana***Address for correspondence:** *Dr Mohammad Afzal Uddin, Associate Professor, department of surgery , Alfalahschool of medical sciences and research, India***ABSTRACT**

Background: The surgical repair of inguinal hernia has advanced significantly over last few years from open hernioplasty to laparoscopic hernioplasty. But studies are needed in order to compare the results of open hernioplasty versus laparoscopic hernioplasty. We tried one such study.

Aim: to compare the results of open hernioplasty versus TAPP repair in inguinal hernia.

Methods: it was a prospective study of patients who underwent open inguinal hernia repair and laparoscopic repair (TAPP) done in our hospital from September 2025 to March 2026.

Results: we did 40 patients of which we did 20 as TAPP and others (20) by open surgical method. There is significant difference between the two groups in terms of postoperative pain. Also, there is shorter duration of hospital stay in TAPP group. The post-operative complication was less in TAPP group. The duration of surgery was more in TAPP group.

Conclusion: The laparoscopic hernioplasty (TAPP) is definitely better than open hernioplasty but the open inguinal hernioplasty takes lesser operative time.

Key words: hernia, mesh, hernioplasty, TAPP, laparoscopic

Introduction

Inguinal hernia being the most common hernia which occurs in about 15% of adult population and inguinal hernia repair is one of the most performed procedure in surgical practice(1).

Hernia repair has undergone a paradigm change from open to laparoscopic approach in the era of minimally invasive surgery(2). In this article we will try to analyze the difference between the two methods in terms of benefits to the patient.

Aims and Objectives: The objective of this study is to compare the results of open inguinal hernioplasty versus laparoscopic hernioplasty (TAPP) in terms of operation time, patient comfort, duration of hospital stay, post operative pain etc

Mohammad Afzal ud din et al / A study of repair of inguinal hernia comparing open with laparoscopic transabdominal preperitoneal

Methods

It was a prospective study conducted from September 2025 to March 2026 on patients admitted on regular basis for the management of uncomplicated inguinal hernias in the department of surgery of our hospital. The study included a total of 40 patients between 20–72 years of age who

presented with uncomplicated unilateral inguinal hernias who were divided in two comparative groups. Out of these, 20 patients were operated on by Lichtenstein's open mesh repair technique and another 20 patients by laparoscopic TAPP mesh repair technique.

Results

Category	Mean age
TAPP	45
OPEN	46

Table 1 showing the mean age of patients in each category

Category	Right side	Left side	bilateral
TAPP	12	5	3
Open	11	6	3

Table 2 showing the side of hernia

Category	Indirect hernia	Direct hernia
TAPP	18	2
Open	16	4

Table 3 showing type of hernia

Category	Mean Time duration
TAPP	63
Open hernioplasty	54

Table 4 showing time taken for surgery (p value=less than 0.001 by independent t test). Open surgery was significantly faster by a mean of 9.1 minutes.

Category	Number (Percentage) who complained severe pain
TAPP	5(25 percent)
Open	10(50 percent)

Table 5 shows number of patients who had postoperative pain (p value=0.099 by fishers exact test). The percentage of patients who had pain was double in the open group but not statistically significant. (p=0.099)

Complication	Number
Hematoma	1
Wound infection	0
Mesh infection	0
Seroma	0

Mohammad Afzal ud din et al / A study of repair of inguinal hernia comparing open with laparoscopic transabdominal preperitoneal

Table 6 showing the complications in post op in TAPP category

Complication	Number of patients
Hematoma	3
Wound infection	1
Mesh infection	0
Seroma	1

In hematoma p value=less than 0.299 by fisher's exact test. No significant difference between laparoscopic surgery and open hernioplasty.

Table 7 showing complications in postoperative period in open category

Category	Average number of days in which patients returned to work
TAPP	9
Open	14

Table 8 showing time taken return to work(p-value is less than 0.001 as per independent t test). Patients returned to work 4.8 days earlier on average in TAPP group

Category	Mean hospital stay in days
TAPP	2
Open	4

Table 9 showing median hospital stay (p-value=less than 0.001 by Mann Whitney test)

Discussion

A total of 40 patients were studied with 20 belonging to each category. We found that open surgery is significantly faster, potentially allowing higher theater output. In case of post op recovery lap surgery offers substantial advantages. In case of clinical outcome trends favor laparoscopic surgery for pain, though not statistically significant in this sample size.

The age distribution in in our study was almost same. In our study it was also observed that mean duration required to return to work was 14 days and 9 days in open and laparoscopic inguinal hernioplasty groups respectively which was statistically significant and consistent with other studies (3,4)

While comparing a group of TAPP patients with open mesh plug repair they concluded that TAPP for bilateral primary inguinal hernia achieved better results than Mesh plug relative to postoperative pain and the use of medication for pain relief without increasing complication and recurrence rates (5)

The retrospective analysis of 216 patients in one study who underwent open or laparoscopic repair using a study revealed no significant difference scores between the two groups. (6)

In another study the comparative long-term results at 5 years of randomized controlled trials between open and laparoscopic mesh repair of primary inguinal hernia show almost the same recurrence rate (open; 3%-5% vs laparo; 2%-4% (7)

Mohammad Afzal ud din et al / A study of repair of inguinal hernia comparing open with laparoscopic transabdominal preperitoneal

A Roman study showed that there were no significant differences between the two methods in terms of duration of surgery. (8)

To conclude, our study has shown that laparoscopic inguinal hernioplasty (TAPP) is superior to open inguinal hernioplasty in terms of lesser intra operative and post-operative complications, lesser post-operative pain, shorter duration of hospital stays with early resumption to regular activities and better subjective and objective cosmetic results in short term follow-up. However, duration of surgery was prolonged on comparison with Lichtenstein open inguinal hernioplasty. (9)

In our study it was observed that there was no significant difference in post op hematoma among the study groups. Even though the incidence of hematoma and seroma was higher in open hernioplasty group, p value was not found to be statistically significant. This classical finding was consistent with study done in Egypt and Rome showing lesser post-operative complications in laparoscopic group. (8,10)

In our study it was also observed that mean duration required to return to work was 4 days in open surgery and 2 days in laparoscopic inguinal hernioplasty groups respectively. In other studies, values show a different picture. In some the duration is longer (3, 11). While in others the duration of stay has been found to be shorter (12).

In our study it was found that mean operating time in open inguinal hernioplasty group was 54 minutes and mean operating time in laparoscopic inguinal hernioplasty group was 63 minutes showing significant difference between the two comparison groups which is comparable to other studies. In our study, duration of surgery was limited to unilateral hernia repair, the duration of surgery taken for the other side (in bilateral cases) was excluded from the time period. This finding was in accordance with other

studies which showed a longer operative time in laparoscopic group. (13,14,,15,)

Conclusion

Our study has shown that laparoscopic inguinal hernioplasty (TAPP) is surely superior to open inguinal hernioplasty in terms of lesser intra operative and post-operative complications, lesser post-operative pain, shorter duration of hospital stay with early return to work and better results in short term follow-up. However, duration of surgery was more in laparoscopic surgery in comparison with open inguinal hernioplasty.

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Mohammad Afzal ud din et al / A study of repair of inguinal hernia comparing open with laparoscopic transabdominal preperitoneal

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