

# Assessment of Efficacy of TEP Hernia Repair in Routine Surgical Practice and its Peri and Postoperative Complications

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## ABSTRACT

**Introduction:** The extraperitoneal laparoscopic hernia repair has various advantages. Lessened postoperative agony, healthy muscle quality, early recuperation, and a little scar are the primary points of interest proffered by the methodology. The present investigation assesses the efficacy of TEP hernia repair in routine surgical practice and its peri and postoperative complications.

**Material and methods:** The present study was performed in the Department of General Surgery, Government Medical College and Rajindra Hospital. We selected 30 cases of uncomplicated inguinal hernia admitted to the department. The surgery was performed successfully on all the patients after induction of anesthesia. Perioperative complications and postoperative complications observed were managed properly and noted for further evaluation.

**Results:** No perioperative complications like major vessel injury, bowel or bladder injury, spermatic cord injury or nerve injury, minor bleeding was observed in 2 patients (6.67%). The patients who suffered from either moderate or severe pain were given oral Diclofenac and intravenous injection Diclofenac respectively. We observed that there is no complication during the hospital stay of the patient. Postoperatively, two patients develop seroma and one patient had recurrence of hernia.

**Conclusion:** Based on the results of present study, we conclude that inguinal hernia TEP repair is a safe procedure to perform as day care surgery because of fewer peri and post-operative implications.

**Keywords:** Hernia, Laparoscopy, TEP

## INTRODUCTION

The extraperitoneal laparoscopic hernia repair has various advantages. Lessened postoperative agony, healthy muscle quality, early recuperation, and a little scar are the primary points of interest proffered by the methodology. Be that as it may, these alluring properties are to a great extent dominated by specific drawbacks, conspicuous among which are the cost of the system to a great extent identified with the cost of a stapler, the requirement for general anesthesia and in-doctor's facility confirmation, and the uncommon however expanded danger of genuine complexities in unpracticed hands.<sup>1-3</sup>

An expansion in the pattern of customary inpatient laparoscopic ads up to extraperitoneal inguinal hernia repair being executed as outpatient surgery has been accounted for in the Western literature. Universal extrapolation of the distributed Western experience to creating nations is conceivably risky without devoted outpatient focuses, low education rates, absence of sufficient transportation and correspondence frameworks, and the nonattendance of group nursing, which keep the effective presentation of significant surgeries into outpatient settings. In addition, few reports exist on the personal satisfaction of patients in the initial couple of days after outpatient release

following laparoscopic hernia repair, which is basically the feeble period.<sup>4,7</sup> The present investigation assesses the efficacy of TEP in routine surgical practice and its peri and postoperative complications.

## MATERIAL AND METHODS

The present study was performed in the Department of General Surgery, Government Medical College and Rajindra Hospital. The ethical approval for the study was obtained from ethical committee of the college prior to commencing the study. We selected 30 cases of uncomplicated inguinal hernia admitted to the department. An informed written consent was obtained from each patient and procedure and advantages of the study were explained to them.

### Inclusion Criteria for the study were:

- Uncomplicated direct/ indirect inguinal hernia
- Medically fit and stable patients {ASA I, II, III (well controlled)}

### Exclusion Criteria were:

- Complicated direct/ indirect inguinal hernia
- History of laparoscopic Herniorrhaphy
- History of pelvic node resection
- Systemic diseases like coagulation disorders.

After complete check up, a proper diagnosis was obtained and patients were advised total extra peritoneal repair under day care anesthesia setting. On the day of surgery premedication was given to the patient. The surgery was performed successfully in all patients after induction of anesthesia. Perioperative complications observed were managed properly and noted for further evaluation. Postoperatively pain was scored using Visual Analogue (VAS) Scale by the patients. Postoperative complications observed were managed properly and noted for further evaluation. The data observed was analysed.

## STATISTICAL ANALYSIS

The statistical analysis of the data was done using SPSS software version 11.0 for windows. Chi-square test and Student's t-test were used to check the significance of the data. A p-value <0.05 was predetermined to be statistically significant.

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### RESULTS

Table 1 shows perioperative complications in the surgical procedure. We observed no perioperative complications like major vessel injury, bowel or bladder injury, spermatic cord injury or nerve injury, minor bleeding was observed in 2 patients (6.67%). No statistically significant association was observed in patients having perioperative complications with co morbidities, ASA level, and diagnosis at admission, white blood count, perioperative finding, and operative time (Figure 1).

Table 2 shows postoperative pain experienced by the patients. The patients who suffered from either moderate or severe pain were given oral Diclofenac and intravenous injection Diclofenac respectively. However none of patient complains of any significant post op. nausea and vomiting.

Table 3 shows postoperative complications of the surgical procedure. We observed that there is no complication during the hospital stay of the patient. Postoperatively, two patients develop seroma and one patient had recurrence of hernia (Figure 2).

### DISCUSSION

Considering the demands, inguinal hernia repair, one of the most common procedures done today, is now started to be considered for day care surgery; thanks to laparoscopy which has main contribution in that. We set out to assess the efficacy of TEP hernia repair in routine surgical practice and its peri and postoperative complications. TEP is a safe procedure. Our early results are encouraging and indicate that such an offer is practical.

The present study was conducted at a public sector hospital in Punjab, India to assess the efficacy of TEP hernia repair in routine surgical practice and its peri and postoperative complications in 30 patients. The patients undergoing Day Care TEP were selected according to preset inclusion criteria. The patients, who satisfied the conditions for discharge, were discharged from the hospital on the very same day of surgery. Out of the 30 patients selected for Day care TEP, 29 patients were discharged from the hospital, on the same day of the surgery, 1 out of 30 patient could not be discharged from the hospital due to patient preference. Thus we were able to achieve a success rate of 90% in our study which is comparable to all international standards. Younger and healthier patients seemed to be more suitable for the concept of Day Care surgery. The criteria of including ASA I, II and ASA III(controlled),seemed to be valid from the conducted study. Though our criteria for selection and discharge seem to be valid, more strict guidelines and scales need to be devised for better patient selection and improved results. Early patient counseling and adequate risk explanation have led to a better patient acceptability. The importance of this need to be emphasized because in Day Care surgery the postoperative care of the patient shifts to the patients home. So it is utmost important that the patient should be explained in detail procedure related complications along with their signs and symptoms.

Day care surgery is a cost effective method, which not only reduces the hospital expenses but also decreases the patient morbidity with an early routine normal activity. Day care surgery has also led to decrease in the wait list of patients for elective surgery with better hospital bed utilization. Thus, providing better health care facilities. So, more patients should

Perioperative complications n = 30	No. (%)
Port site bleeding	0
Bleeding	2 (6.67%)
Bowel/Bladder injury	0
Major vascular injury	0
Nerve injury	0
Spermatic Cord Injury	0

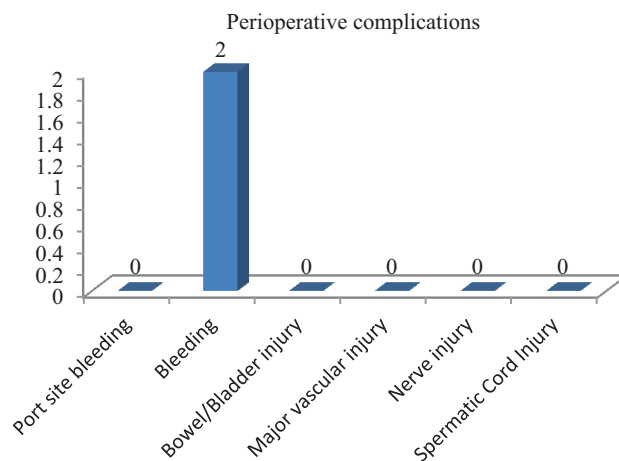
**Table-1:** Peri-operative complications of the surgical procedure

Pain	No. of patients		
	Immediate Post operative	At Discharge	10 <sup>th</sup> day follow up
VAS score 1	10	21	Nil
2	17	8	Nil
3	Nil	Nil	Nil
4	3	Nil	Nil

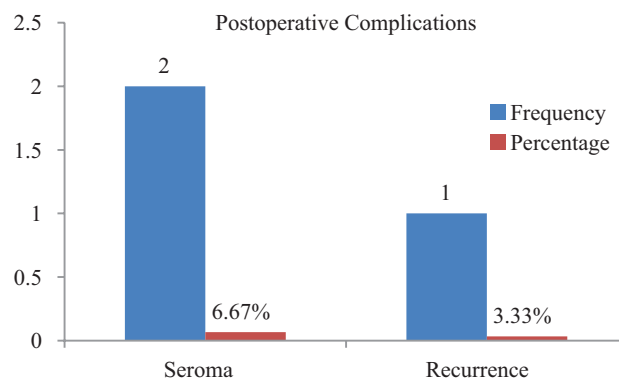
**Table-2:** Postoperative pain experienced by patients after surgical procedure

Complication	No. of patients
Seroma	2
Reccurence	1

**Table-3:** Postoperative complication of the surgical procedure



**Figure-1:** Showing perioperative complications of the surgical procedure



**Figure-2:** Showing Postoperative complication of the surgical procedure

be encouraged to join this program of Day Care surgery. More studies should be done in public sector hospitals across India to

validate this concept and make it a regular feature of our health care system. As it will lead to better utilization of our health care resources. Through our study we found that Day Care TEP is a safe and feasible procedure in a public sector hospital in carefully pre-selected patients. No perioperative complications like major vessel injury, bowel or bladder injury, spermatic cord injury or nerve injury, minor bleeding was observed in 2 patients only. No complication during the hospital stays of the patient was seen. Postoperatively, two patients developed seroma and one patient had recurrence of hernia.

Winslow ER et al led an examination to survey perioperative results and problems of open versus laparoscopic extraperitoneal inguinal hernia repair in a developed surgical practice. Information from all patients experiencing TEP repair since 1997 and open mesh repair (OPEN) since 1999 were gathered tentatively. Choice of surgical approach depended on neighboring hernia components, anesthesia hazard, history of stomach surgery, and patient choice. TEP repairs were performed in 147 patients and open repairs in 198 patients. Patients in the OPEN gathering were essentially more seasoned and had a higher ASA. TEP repairs will probably be completed for two-sided (33% TEP, 5% OPEN) or intermittent hernias (31% TEP, 11% OPEN) than were open repairs. Simultaneous systems went with 31% of TEP and 12% of OPEN repairs ( $p < 0.01$ ). Agent times (min) were altogether shorter in the TEP bunch for both one-sided (63 +/- 22 TEP, 70 +/- 20 OPEN;  $p = 0.02$ ) and reciprocal (78 +/- 27 TEP, 102 +/- 27 OPEN;  $p = 0.01$ ) repairs. Mean agent times diminished after some time in the TEP gather for both one-sided and two-sided repairs. Patients experiencing TEP were more probable to create urinary maintenance, yet were more improbable to have skin deadness or delayed inconvenience in groin area. The creators inferred that regardless of a higher extent of patients experiencing reciprocal repairs, intermittent hernia repair, and simultaneous strategies, agent times are shorter for laparoscopic TEP repair than for open mesh repair.<sup>8</sup>

Kallianpur AA et al assessed the achievability of outpatient release after laparoscopic add up to extraperitoneal inguinal hernia repair done in mix with in-healing center administrations and its effect on personal satisfaction. Forty patients were considered who had uncomplicated inguinal hernias and satisfied the determination criteria. Personal satisfaction was assessed by utilizing the SF-12 survey. 90% of patients could be released as outpatients. Four patients required confirmation. No real complexities or readmissions happened. Physical segments of personal satisfaction decayed in the prompt postoperative period however enhanced to above preoperative levels inside one month. A transient weakening in subgroups of the psychological well-being segment was watched, which recuperated to typical in under seven days. There was no huge adjustment in the enthusiastic part. There has been no repeat at a middle follow-up of 25 months. It was directed that it was possible to securely perform outpatient TEP in mix with routine in-clinic administrations without expanding complexities or bringing on any unfavorable effect on personal satisfaction. This was conceivable subject to adherence to appropriate determination and release criteria. Bansal VK et al thought about TEP versus TAPP strategies of laparoscopic inguinal hernia repair regarding these long haul outcomes. This study was directed from May 1,

2007 to March 30, 2012. Patients with uncomplicated inguinal hernia were randomized to transabdominal preperitoneal (TAPP) or absolutely extraperitoneal (TEP) systems. An aggregate of 160 patients were randomized to assemble I (TEP) and 154 patients to bunch II (TAPP). Torment was surveyed with Visual Analog Scale (VAS) preoperatively and postoperatively at 24 h, 1 week, a month and a half, 3, 6, and 12 months, and yearly from that point. Personal satisfaction was evaluated with Short Form-36 adaptation 2 (SF 36v2) preoperatively and postoperatively at 3 months take after up. Demographic, clinical profiles, intraoperative, and early postoperative parameters were all around coordinated. There was essentially higher intense torment following TAPP repair; in any case, the interminable crotch torment was similar in both TEP and TAPP. Preoperative torment and quick postoperative torment had noteworthy relationship with ceaseless inguinal torment. Noteworthy change from preoperative to postoperative personal satisfaction was seen in both TEP and TAPP repairs, yet there was no distinction amongst TEP and TAPP in postoperative period. Time to come back to ordinary movement likewise was comparable between the two gatherings. The authors concluded that the TEP and TAPP procedures of laparoscopic repair of inguinal hernia have similar long haul results as far as occurrence of unending crotch torment, personal satisfaction, and resumption of typical exercises. Perpetual crotch torment had a noteworthy connection with preoperative torment and early postoperative agony. In any case, TAPP was related with fundamentally higher frequency of early postoperative torment, longer agent time, and string edema, while TEP was related with a noteworthy higher rate of seroma arrangement. The cost was practically identical between the two.<sup>9,10</sup>

## CONCLUSION

Based on the results of present study, we conclude that inguinal hernia TEP repair is a safe procedure to perform as day care surgery because of fewer peri and post-operative implications.

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