(e) ISSN Online: 2321-9599

(p) ISSN Print: 2348-6805

# ORIGINAL ARTICLE

## EVALUATION OF SAFETY AND FEASIBILITY OF DAY CARE TEP INGUINAL HERNIA SURGERY

Darshanjit Singh Walia[1], Rupesh Nagori[2], Anand Singla[3], Deeksha Singla[4], Karanvir Singh[5], Harmanpreet Tiwana[5]

[1]Assistant Prof, Surgery, [3]Senior Resident, Surgery, [4]Senior Resident, Pediatrics, GMC, Patiala, Punjab, India, [2]Senior Resident , Surgery, GGS medical College, Faridkot, Punjab, India[5] Gian Sagar Medical College and Hospital Rajpura

**ABSTRACT:**

**Background:** TEP has emerged as a safe procedure due to its potential advantages of reduced postoperative pain, unimpaired muscle strength, early recovery and a small scar. The current study is planned to evaluate safety and feasibility of day care TEP inguinal hernia surgery. **Materials and method:** The study was conducted in the Department of General Surgery, Government Medical College and Rajindra Hospital. Thirty cases of uncomplicated inguinal hernia admitted in Rajindra Hospital were selected. Patients, who gave informed consent after full explanation of day care surgery process, underwent Total extra peritoneal repair under day care anesthesia setting after proper diagnosis and complete work-up. Patient's data (demographic, disease, treatment, outcome, and follow-up) was collected on pre-designed performa attached and the observations obtained will be tabulated and analyzed using appropriate statistical methods. **Results:** Age of patients was 37.4 years. All the patients were male with ASA-I grade 26 (86.6%), and ASA-II 4 (13.3%). Presenting symptoms of were Inguinoscrotal swelling (93.33%) and chronic groin ache (6.67%). Mean operative time for TEP was 64.17 minutes. Mean hospital stay after surgery was 8.67 hours. **Conclusion:** 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.

**Keywords:** Daycare surgery, General surgery, Inguinal Hernia.

Corresponding author: Dr. Anand Singla, Senior Resident, Surgery, GMC, Patiala, Punjab, India

This article may be cited as: Walia DS, Nagori R, Singla A, Singla D, Singh K, Tiwana H. Evaluation of safety and feasibility of day care TEP inguinal hernia surgery. J Adv Med Dent Scie Res 2017;5(6):58-62.

| Access this article online | |
|---|---|
| Quick Response Code | Website: www.jamdsr.com |
| | DOI: 10.21276/jamdsr.2017.5.6.15 |

## INTRODUCTION:

An inguinal hernia is a weakness in the wall of the abdominal cavity that is large enough to allow escape of the body tissue or internal organs, especially a part of the intestine. It usually appears as a lump in the inguinal region and in some people only causes pain, discomfort, limit daily activities and the ability to work. If the bowel strangulates or becomes obstructed it can be life-threatening.[1] The most frequent of all hernias is inguinal hernia, which occurs in 73% of all the hernia cases and is 20 times more frequent in males than females.[2] Inguinal hernia most probably has been a disease ever since mankind existed.[3] Inguinal hernia repair remains one of the most commonly performed surgical operations. General surgeons perform around 800,000 inguinal and 100,000 ventral hernia repairs a year in the United States.[4] There are various approaches for inguinal hernia repair. The fact that there are various approaches, no one is perfect. Controversies will continue to reside over the optimal approach for hernia repair into the next century. There have been several improvements in surgical technique together with the development of new prosthetic materials in this century. The various procedures ranged from simple incision with healing by secondary intention through surgical castration to exceedingly complicated plastic repair where multiple flaps were swung from various areas of abdominal wall to effect closure of hernia defect.[5] Day care surgery is described as the admission of selected patients to hospital for a planned surgical procedure, returning home on the same day.[6] The ability to provide high quality and cost effective care has made outpatient surgery one of the fastest growing areas in health care delivery system and the ability to perform more extensive operations on an outpatient basis has focussed more interest on outpatient (ambulatory) anesthesia. TEP has emerged as a safe procedure due to its potential advantages of reduced postoperative pain, unimpaired muscle strength, early recovery and a small scar.[7]An increase in the trend of traditional inpatient Laproscopic total extraperitoneal (TEP) inguinal hernia repair being performed as outpatient surgery has been reported in the westsern literature.[8-11] Hence, the current study is planned to evaluate safety and feasibility of day care TEP inguinal hernia surgery

## MATERIALS AND METHODS:

The study was conducted in the Department of General Surgery, Government Medical College and Rajindra Hospital.The protocol for the study was approved from the ethical committee of the college before starting the study. Thirty cases of uncomplicated inguinal hernia admitted in Rajindra Hospital were selected. Patients, who gave informed consent after full explanation of day care surgery process, underwent Total extra peritoneal repair under day care anesthesia setting after proper diagnosis and complete work-up. Investigations included Haemoglobin, B.T., C.T., T.L.C., D.L.C., Serum Na+, Serum K+, Blood Sugar, Blood urea, S. creatinine, ECG, USG, Liver function-if indicated. Close monitoring was done during post-operative period in terms of vitals, post-operative complications, morbidity, total hospital stay and complications in follow-up.

A total of thirty (n = 30) patients were selected for day care laparoscopic (TEP) Inguinal hernia repair according to a present selection criteria

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

### Exclusion Criteria:

- Complicated direct/ indirect inguinal hernia
- Prior laparoscopic Herniorraphy
- Prior pelvic node resection
- Multiple co-morbid diseases, coagulation disorders, adverse anaesthetic history.
- Suspected/proven malignancy.
- ASA III (uncontrolled) or IV.
- Unavailability of competent adult to accompany the patient.
- Age <14 and >60years.
- Body mass index >35.
- Long distance from home (>30min travel).

The selected patients were between 15-59 years of age, all of them were male. (28 out of 30) patients presented to the surgery outpatient department with Inguinoscrotal swelling while 2 of them were having chronic groin ache. They were counseled and motivated for day care surgery. All the patients underwent routine investigations and a pre anesthetic check up to get the fitness for surgery. Patients were sent home after checkup and called next day for the surgery and patients were planned to discharge on same day of surgery in the evening. Patients with ASA grade I, II and III (well controlled) were selected for the study.

Patient's data (demographic, disease, treatment, outcome, and follow-up) was collected on pre-designed performa attached and the observations obtained will be tabulated and analysed using appropriate statistical methods.

The statistical analysis of the data was done using SPSS software for windows. The confirmation of data for significance was done using Chi-square test and Student's t-test. Statistical significant value for p was predefined to be less than or equal to 0.05.

## RESULTS:

**Table 1** shows mean age of patients was 37.4 years. All the patients were male with ASA-I grade 26 (86.6%), and ASA-II 4 (13.3%). Presenting symptoms of were Inguinoscrotal swelling (93.33%) and chronic groin ache (6.67%)**[Fig. 1 & 2]**. All patients were admitted in the OPD for elective surgery and underwent TEP. **Table 2** shows operative procedure and peroperative findings. All the selected patients underwent TEP Inguinal hernia repair. No conversion to open hernia repair was done in any case. Mean operative time for TEP was 64.17 minutes. Mean hospital stay after surgery was 8.67 hours and 29 of the patients were discharged on the same day of surgery. One patient could not be discharged due to patient's preference.

**Table 1:** Demographic data and presenting symptoms

| Demographic data *n* = 30 | No. |
|---|---|
| **Age** | |
| **Mean** | 37.4 |
| **Range** | 15–59 yrs |
| **Sex** | |
| **Male** | 30(100%) |
| **Female** | 0(0) |
| **ASA** | |
| **ASA- I** | 26 (86.6 7%) |
| **ASA- II** | 4 (13.33%) |
| **Presenting symptoms** | |
| **Inguinoscrotal swelling** | 28 (93.33%) |
| **Chronic groin ache** | 2(6.67%) |
| **Admission** | |
| **Elective** | 30 (100) |

**Figure 1:** Age distribution of patients

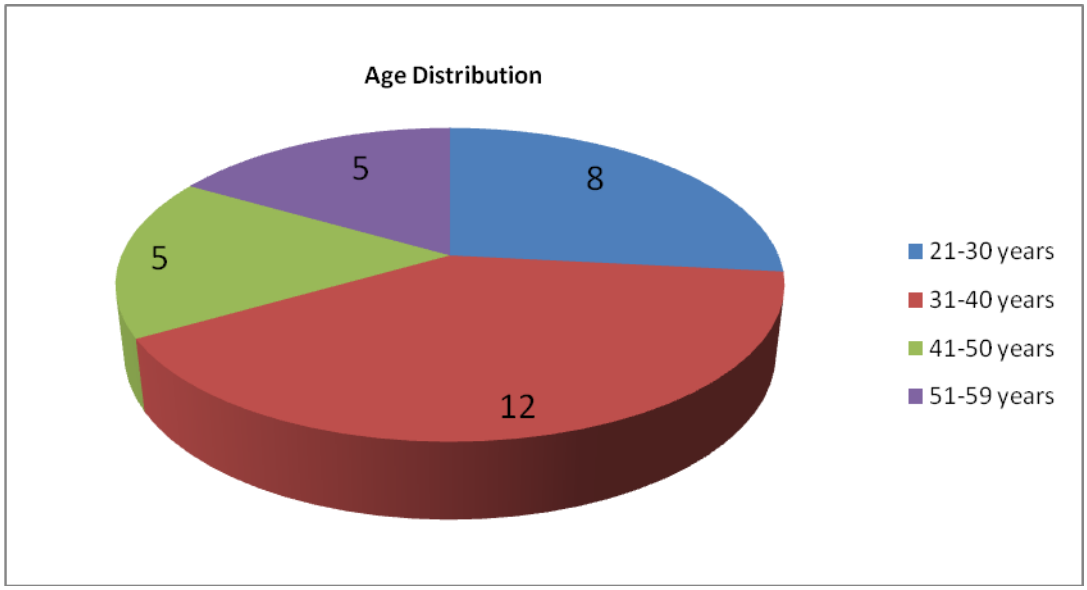


**Figure 2:** Presenting symptoms of the patients

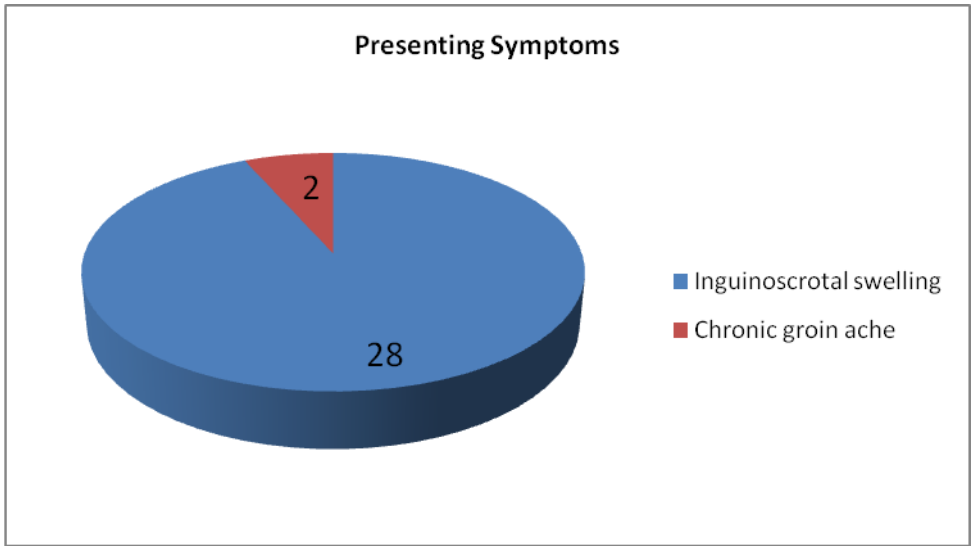


**Table 2:** Operative procedure and peroperative findings

| **Per operative data *n* = 30** | **No. (%)** |
|---|---|
| **Operative procedure** | |
| **TEP Inguinal hernia repair** | 30 (100) |
| **Per operative diagnosis** | |
| **Indirect hernia** | 28 (93.33) |
| **Direct hernia** | 2(6.67) |
| **Open hernia repair** | 0 |
| **Mean operative time (minutes)** | 64.17 |
| **Mean hospital stay (hours)** | 8.67 |

**DISCUSSION:**

Open hernia repair is routinely performed as an outpatient procedure, but many patients are denied the benefits of laparoscopic repair, which is usually done as an inpatient procedure due to unavailability of beds. 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 determine the feasibility of offering laparoscopic hernia repair (TEP) as a day care procedure. TEP is a safe procedure. Our early results are encouraging and indicate that such an offer is practical.

A crucial aspect in the development of safe day care surgery programme is the criteria for the patient selection. Appropriate patient selection lowers the failure rate. Usually, patients with ASA grade I, II and well controlled ASA III are selected. We also preferred the same and this resulted in successful adaptation of day care TEP Inguinal hernia repair in 96.66% of patients. In our study, unplanned readmission was none. There was recurrence of hernia in 1 patient and 2 patients had post operatively seroma formation for which patient was not admitted but followed up in OPD and seroma resolved without any complication. In the study by O'riordainDS et al complication included were cord hematoma 2 (4%) and seroma 3 (6%)[8] .In the study by Lau et al, complication were seroma in 12 patient, scrotal brusing in 2 and fever in 1.[9] In the study by Kallianpur AA et al 5 patient had seroma (12.5%).[7]

Overnight stay is usually a joint decision made by the surgeon, the patient and his attendants. As patient has to participate in self care after discharge, their comfort, preference, and safety need to be considered in the assessment for discharge. In our study, one patient was admitted overnight. There was no readmission or emergency visit postoperatively. The higher rate of overnight admission due to social reasons explained the fear and lack of proper knowledge among the people of lower socioeconomic status which forms the main bulk of ours hospital setup. In the study of Lau et al,[9] 3 (out of 102) were admitted overnight because the medical indications dictated admission in 2 (1.96%), due to ecg changes and 1(.98%) due to dizziness. In study by Kallianpur AA et al 2 (out of 40) were admitted overnight because of urine retention, 1 (out of 40) due to prolonged surgery, 1(out of 40) due to social reasons.[7] In the present study there was 1(3.33%) remain admitted overnight due to patient preference. The viability of our inclusion criteria and the feasibility of Day Care surgery in our practice was analysed using successful discharge, post operative symptoms readmission and complication rates, ease and accuracy of follow up and the potential benefit to our surgical service as Day Care surgery based on Day Care TEP Inguinal hernia repair as a study model was examined.

Though the onus of reaching the hospital for perioperative problems was on the patient, our results suggest a satisfactory outcome if patients and relatives understand the issues related to day care surgery and the response expected from them. It also appears that domiciliary perioperative care, even in our set-up, is feasible and reliable. Provided the pathways of care are clearly defined and understood, similar results can probably be achieved in most situations. In this context, our selection criteria appear to be both valid and practical.

Our study can be criticised on the grounds that patients were exposed to unwarranted risks by use of criteria that had not been validated. This criticism is valid and we concede that there should be better ways of undertaking feasibility studies. Unfortunately, there were no objective methods or models available to determine the safety of early discharge. There should be more strict and set pair of guidelines, especially where experience is small. It must be pointed out, however, that even minimally literate patients respond satisfactorily to the demands and responsibilities of day care surgery and should not be eliminated for this reason alone.

The findings of the present study regarding the effectiveness of TEP as day care procedure are consistent with previous researches. Our results demonstrated that Day care TEP Inguinal hernia repair is safe with high success rate in carefully selected patients with uncomplicated Inguinal hernia and has the advantage of cost effectiveness.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 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.

**CONCLUSION:** 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.

**REFERENCES:**


1. Wake BL, McCormack K, Fraser C, Vale L, Perez J, Grant A. Transabdominal pre-peritoneal (TAPP) vs totally extraperitoneal (TEP) laparoscopic techniques for inguinal hernia repair. Cochrane Database of Systematic Reviews 2005, Issue 1. Art. No.: CD004703. DOI: 10.1002/14651858.CD004703.pub2
2. Kingsnoth AN, Porter CS , Bennett DH, Walker AJ , Hyland ME, Sodergen S. Lichtenstein patchor prefix plug and patch in inguinal hernia: A prospective double blind randomized controlled trial of short term outcome . Surgery 2000; 127 : 276-283
3. Amid P, Shulman AG, Lichtenstein I. The Lichtenstein open tension-free Hernioplasty. In: Arregui ME, Nagan RF. eds. Inguinal hernia. Advances or Controversies? Oxford &N.York: Radcliffe Medical Press, 1994; p.185-190.
4. Rutkow IM. Demographic and socioeconomic aspects of hernia repair in the United States in 2003. SurgClin North Am. 2003;83:1045-1051.
5. Glassgow F: Short Stay surgery for repair of inguinal hernia. Ann R CollSurgEngl 1976;58:133-139
6. Naresh RT and Begani MM. Ambulatory surgery: The Indian perspective. The Indian Association of Day Surgery, 74/78, Lady Ratan Tata Medical Centre, Cooperage, Mumbai.
7. Kallianpur AA, Parshad R, Dehran M, Hazrah P. Ambulatory Total Extraperitoneal Inguinal Hernia Repair: Feasibility and Impact on Quality of Life. JSLS 2007;11:229-34.
8. O'Riordain DS, Kelly P, Horgan PG, Keane FB, Tanner WA. Laparoscopic extraperitoneal inguinal hernia repair in the daycare setting. SurgEndosc. 1999;13(9):914-7.
9. Lau H. Outpatient endoscopic totally extraperitoneal inguinal hernioplasty. Laparoendosc Adv Surg Tech A. 2004;2:93–96.
10. Voitk AJ. The learning curve in laparoscopic inguinal hernia repair for the community general surgeon. Can J Surg. 1998;41(6):446-50.
11. McKernan JB. Extraperitoneal prosthetic inguinal hernia repair using an endoscopic approach. Int Surg. 1995;80(1):26-8.


**Source of support:** Nil **Conflict of interest:** None declared