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A Study of Enhanced View Total Extraperitoneal Laparoscopic Hernioplasty (E-tep) For Inguinal Hernia In Tertiary Care Hospital

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Abstract

Background: Generally, TAPP and TEP has been done, but it gives both technically less space to surgery and there is a need to suture the mesh. In our new study we get more space to operate and no sutures required.

Objectives: To study enhanced view total extraperitoneal laparoscopic hernioplasty (e-tep) for inguinal hernia

Methods: The data for this prospective study was obtained from 21 patients undergoing Laparoscopic hernioplasty (21 from E-TEP) in Osmania General Hospital, Hyderabad, Telangana between November 2019 to May 2021 inclusive of a follow up period of 6 months. Consent for the procedure was obtained. E-TEP procedure were performed using Polypropylene mesh.

Results: Minor complication rate was 26.66% for ETEP group. There was one case of converted from ETEP to TAPP method. The recurrence in E-TEP is zero. The hospital stay in E-TEP was 2.27 days.

Conclusion: ETEP is the best method of hernioplasty for a primary inguinal hernia. However largescale study and long term follow up studies are required.

Keywords: ETEP, TEP, Lichenstein Meshplasty, Inguinal Hernia.

Introduction

Inguinal hernia the most common abdominal wall hernia and consequently inguinal hernia repair rank among one of the most often performed surgical procedure. It is estimated that more than 20 million groin hernia repairs are performed every year worldwide.[1] Despite the frequency of this procedure no surgeon has ideal results and complications such as postoperative pain, infection, early return to work, recurrence remain.[2]

Advancements in perioperative anesthesia and operative technique have made this an outpatient ambulatory operation with low recurrence rates and morbidity. Given this success, quality of life and the avoidance of chronic pain have become the most important considerations in hernia repair.[3]

Approximately 70% of femoral hernia repairs are performed in women; however, inguinal hernias are five times more common than femoral hernias. The most common subtype of groin hernia in men and women is the indirect inguinal hernia. Inguinal hernias form because of a defect in the myopectineal orifice that allows intra-abdominal contents to protrude into the groin. The anatomy can be difficult to grasp, however, before performing inguinal hernioplasty, the surgeon must understand inguinal anatomy to avoid complications such as chronic pain and recurrence.[4]

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Five laparoscopic techniques are currently available for repairing an inguinal hernia: totally extraperitoneal (TEP) repair, extended view totally extraperitoneal (ETEP), transabdominal preperitoneal (TAPP), intra-peritoneal on lay mesh (IPOM), and reduction of the sac with or without closure of the ring.[5] It is our philosophy that surgeons interested in a laparoscopic approach should be skilful in all of the available techniques to accommodate the needs of all patients and to be able to convert to a different technique when necessary.

Materials and Methods

Study design: Prospective observational study.

Study setting: Upgraded department of general surgery, Osmania general hospital.

Duration of study: 18 months.

Sample size: 21

Inclusion criteria:

1. All age groups in males.
2. All inguinal hernias include.
   a) Direct & indirect
   b) Complete and incomplete
   c) Reducible

Exclusion criteria:

a) Patients who are unfit for general anesthesia.
b) Previous history of pelvic surgeries.

The data for this prospective study was obtained from 21 patients undergoing Laparoscopic hernioplasty (21 from E-TEP) in Osmania General Hospital, Hyderabad, Telangana between November 2019 to May 2021 inclusive of a follow up period of 6 months. Consent for the procedure was obtained. E-TEP procedure were performed using Polypropylene mesh.

Statistical analysis: The SPSS 22 software was used to analyze and the data was presented in the form of means and percentages.

Observation and Results

The study was conducted at Osmania general hospital from November 2019 to May 2021 in Department of general surgery. The study involved 21 male patients who satisfied inclusion criteria. 21 patients were subjected to ETEP repair.

Table 1: Distribution based on Age Distribution.

Age Distribution (yr)	Number(n)	Percentage (%)
21-30	6	28.57%
31-40	3	14.2%
41-50	4	19.04%
51-60	3	14.2%
61-70	3	14.2%
>70	2	9.52%
Total	21	100%

The cumulative prevalence of inguinal hernia in males is 28.56% for age 21-30yrs,14.2% for age 31-40yrs,19.04% for age 41-50yrs ,14.2% for age 51-60yrs,14.2% for age 61-70yrs, 9.52% for age >70yrs. Inguinal hernias occurs eight time as often in men as in women and consequently approximately 90% of all inguinal hernias repair performed in male patients.

Table 2: Distribution based on Side and type of hernia

Side of Hernia	Number(n)	Percentage (%)
Rt. Side	12	57%
Lt. Side	9	43%
Type of Hernia		
Direct	6	29%
Indirect	15	71%

Among 21 cases studied 12 cases were found to have inguinal hernia whereas 9 cases were left sided hernia.

Among 21 cases studied, 15 cases had Indirect inguinal hernia and 6 had direct inguinal hernia. Although all cases were preoperatively evaluated most of the diagnosis on the type of hernia was made intra operatively.

Diabetes was the common comorbidity in the present study group, other comorbidities include systemic hypertension

Intraoperative complications:

Intraoperative complications like major vessel injury or bladder injury were observed. No intraoperative complications were encountered during the study period in the above 21 cases.

Duration of surgery:

The Duration of surgery was observed to be longer for indirect hernia and shorter in direct hernia. Shortest

duration recorded is 90 minutes and longest is around 120 minutes**.** Mean duration of surgery in ETEP is 100 minutes.

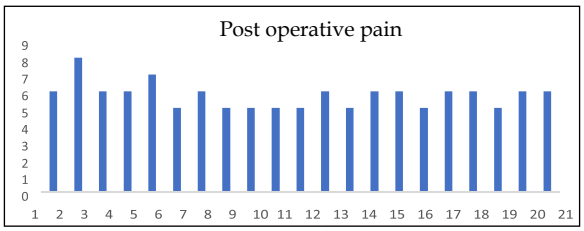

Figure 1: Post operative pain

The post-operative pain was measured using Visual Analog Scale (VAS) 6 hours after the surgery. The patient was given a dose of Injection Tramadol 100mg in after the surgery. The next dose of analgesic was given based on the VAS score. ETEP procedure mean post operative pain is 5.76 which is usually less.

Table 3: Distribution based on Seroma

Seroma	Number(n)	Percentage (%)
Seroma	2	10%
Normal	19	90%

Post operative seroma was observed only in 2 cases. This cause prolonged hospital stays and prolonged antibiotic usage and late return to work. Seroma was subsided within 1 month completely.

Hematoma: Post operative hematoma were observed. There is no post operative hematoma seen.

Port site infection: Post operative port site infection were observed. There is no single case of port site infection seen.

Length of hospital stay (time of discharge): Length of hospital stay usually less in ETEP procedure with mean duration is 2.28 days. In ETEP we can discharge early.

Time to return to work: Time taken to return for work is depend on variable factors like profession and patient related factors. ETEP mean time taken to return for work is 7.7 days.

Recurrence: Post operative recurrence were observed. there is no single of recurrence is seen in follow up period.

Discussion

Inguinal hernia repair is one among the most commonly performed operation in India, owing to a significant lifetime incidence and variety of successful treatment modalities. Advancements in perioperative anaesthesia and operative technique have made this an outpatient ambulatory operation with low recurrence rates and morbidity. Given this success, quality of life and the avoidance of chronic pain have become the most important considerations in hernia repair.

Approximately 75% of abdominal wall hernias occur in the groin. The lifetime risk of inguinal hernia is 27% in men and 3% in women.[6] Of inguinal hernia repairs, 90% are performed in men and 10% in women.[7] The incidence of inguinal hernias in males has a bimodal distribution, with peaks before the first year of age and after age 40. Abramson demonstrated the age dependence of inguinal hernias in 1978.[8] Those age 25 to 34 years had a lifetime prevalence rate of 15%, whereas those age 75 years and over had a rate of 47%.[9]

Primary unilateral inguinal hernias without complications can be treated with ETEP.[10] Although no major intraoperative complications were noticed in present study, literature shows evidence of major vessel organ damage, even mortality following laparoscopic procedure. ETEP has lesser complication rates and early discharge and early return to work and less post operative pain.[11] Hence according to the present study ETEP is the best method of hernioplasty for a primary inguinal hernia. However, large scale studies and long-term follow-up studies are required to evaluate for the chronic pain, recurrence rates and learning curve in laparoscopic hernia repair.[12] Our study supports the view that ETEP repair of inguinal hernia is safe and efficacious, but long-term Randomised Control Trials with enhanced sample size and reduced confounding factors are still required to standardize the procedure of ETEP.

Conclusion

ETEP is the best method of hernioplasty for a primary inguinal hernia. However largescale study and long term follow up studies are required.

Ethical Clearance: The ethical clearance was obtained from Osmania Medical College and General Hospital prior to the commencement of the study.

Conflict of Interest: Nil

Source of Funding: Self

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