

Research Article

An experience with laparoscopic totally extraperitoneal repair of inguinal hernias, a hospital based study.

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Abstract: Background: The treatment of hernia has passed through an extensive evolution ever since Eduardo Bassini performed the first tissue repair of inguinal hernia in later half of nineteenth century. There is no single repair that can be considered as a standard repair for inguinal hernia and the process is still evolving. We performed a study to evaluate the outcome of laparoscopic totally extraperitoneal prosthesis repair of inguinal hernia.

Method: The study is a prospective observational study conducted in a department of surgery, Govt medical college Srinagar from 2012 onwards. Patients having groin hernia presenting to the OPD of the SMHS hospital were randomly selected for this study. A total of 200 patients were considered for the study. After doing all base line investigations and proper pre anaesthetic check up patients were taken for TEP.

Results and Observations: In our study minimum and maximum age was 20 and 80 years for TEP with mean age of 46.76 ± 13.0 years; showing that no age is immune to inguinal hernia. In our study there were only male patients, a total of 200 patients were included in the study. Overall complications in our study were 12.5%. 7.5% cases were converted from TEP to other procedure. Seven patients had vascular injury (inferior epigastric artery) during the procedure. Hemostasis was achieved in 2 patients while as 5 patients were converted to open procedure and ligation of vessel was done. 5% of patients were converted to TAPP because of technical difficulties like loss of pre peritoneum, perforation of peritoneum.

Conclusion: We concluded that TEP is a safe and effective procedure of repair for inguinal hernias with minimum morbidity in expert hands with a comparable complication rate to other procedures but has a long learning curve and with experience, the complication rate also reduces.

Keywords:....

Introduction

The hernia occurs when an organ of fatty tissue squeezes through a weak spot in a surrounding muscle or connective tissue called fascia. Hernia is a common cause of bowel obstruction. Hernias may incarcerate and lead to strangulation of bowel. Strangulation occurs in 1% to 3% of all hernias and results in compromised blood flow to the entrapped contents.¹Groin hernia repairs are 8 to 10 times more common in men compared with women². Inguinal hernias occur 9 to 12 times more commonly in men whereas femoral hernias occur approximately 4 times more commonly in women³. Indirect hernias that occur in men are the result of a congenital defect called a patent processus vaginalis. The processus vaginalis is an out-pouching of the peritoneum. The internal ring is a defect in transversalis fascia allowing for the passage of the spermatic cord in men and the round ligament in women. . Indirect hernias are more commonly found on the right, which

is attributed to delayed descent of the right testicle in men and subsequent delay in the atrophy of the processus vaginalis that normally follows this descent.¹Direct hernias result from a weakened transversalis fascia and protrude directly through the abdominal wall. Direct hernias occur in Hesselbach's triangle made up laterally by the inferior epigastric vessels, medially by the lateral edge of the rectus muscles, and inferiorly by the inguinal ligament. The treatment of hernia has passed through an extensive evolution ever since Eduardo Bassini performed the first tissue repair of inguinal hernia in later half of nineteenth century. After passing through a number of modifications from tissue repairs to mesh repairs to hernia prolene systems to present day laparoscopic repairs. There is no single repair that can be considered as a standard repair for inguinal hernia and the process is still evolving. We performed a study to evaluate the outcome of laparoscopic totally extraperitoneal prosthesis repair of inguinal hernia.

Material and Methods:

The study is a prospective observational study conducted in a department of surgery, Govt medical college Srinagar from 2012 onwards. Patients having groin hernia presenting to the OPD of the SMHS hospital were randomly selected for this study. A total of 200 patients were considered for the study. After doing all base line investigations and proper pre anaesthetic check up patients were taken for TEP.

Exclusion criteria:

- Patients not fit for general anaesthesia.
- Patients not given consent for laparoscopic repair of hernia
- Age below 18 years.
- Previous lower abdominal or pelvic surgery.
- Complicated hernia.
- Patients with psychiatric disorders

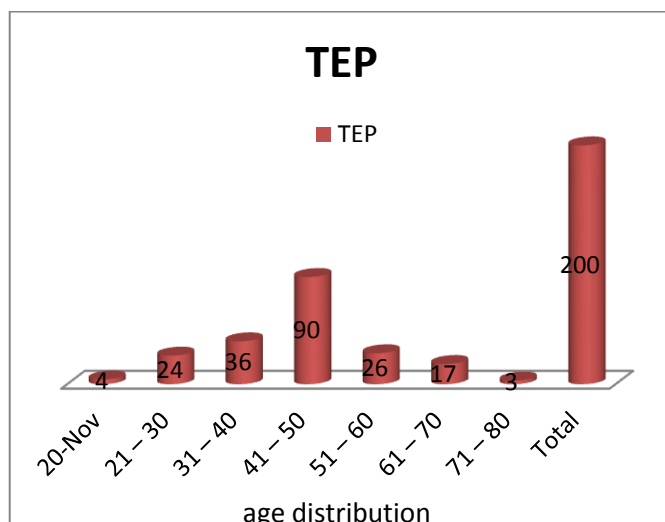
The initial incision is made horizontally, slightly inferior to the umbilicus. Subcutaneous tissue is dissected until the anterior rectus sheath is exposed. The anterior rectus sheath is opened away from the linea alba to expedite identification of the rectus abdominis. The rectus muscle was retracted laterally and hassons trocar was inserted in the pre peritoneal space. The space was created using camera dissection with high pressure CO₂ insufflations. Carbon dioxide was then maintained at a pressure of 15 mmHg in pre peritoneum. Two additional 5-mm trocars are placed in the lower midline. One is placed suprapubically, while the other is placed immediately distal to the structural balloon or triangulation of instruments are done. The patient is then placed in a Trendelenburg position and the operation proceeds in an identical fashion to a TAPP. During the course of the operation, an inadvertent rent may result in the peritoneum leading to loss of working space. Usually, the intra-abdominal and preperitoneal pressure will equilibrate with no loss of exposure. However, if the preperitoneal space becomes limited from billowing of the peritoneum, the defects may be closed using an endoloop. Alternatively, the operation can be converted to a TAPP; however, this is rarely necessary. The tears in the peritoneum should be repaired before conclusion of the operation to prevent mesh erosion or bowel obstruction. Following mesh placement, the preperitoneal space is desufflated slowly and in a deliberate manner under direct vision to ensure proper mesh positioning. Once trocars are removed, the anterior rectus sheath is reclosed with interrupted sutures

Results and Observations:

1. Age Distribution:

The age distribution of patients in our study is depicted in the following figure:

AGE GROUP	TEP
11-20	4
21 – 30	24
31 – 40	36
41 – 50	90
51 – 60	26
61 – 70	17
71 – 80	3
Total	200



2. Sex Distribution:

The sex distribution of patients in our study is depicted in the following pie figure.

PROCEDURE	MALE	FEMALE
TEP	200	0

Distribution of cases.

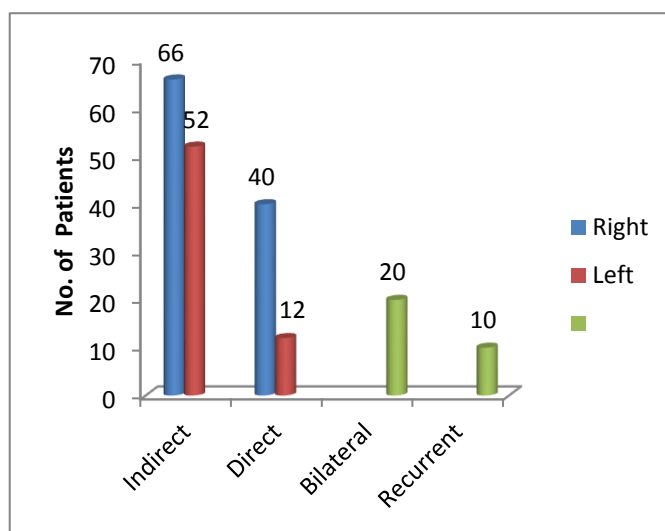
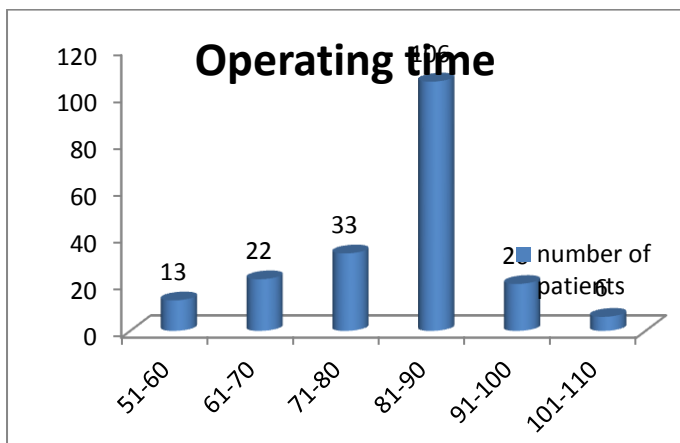


Fig. 3: Distribution of cases in our study.

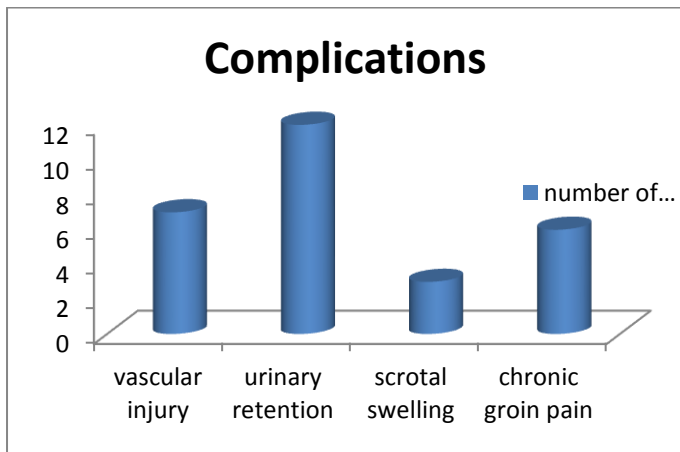
3. Operating time.

The figure below shows the operating time of the procedure in our study. The average operative time in our study was 55 - 108 minutes with mean of 80.8 ± 11.97 minutes



4. Complications.

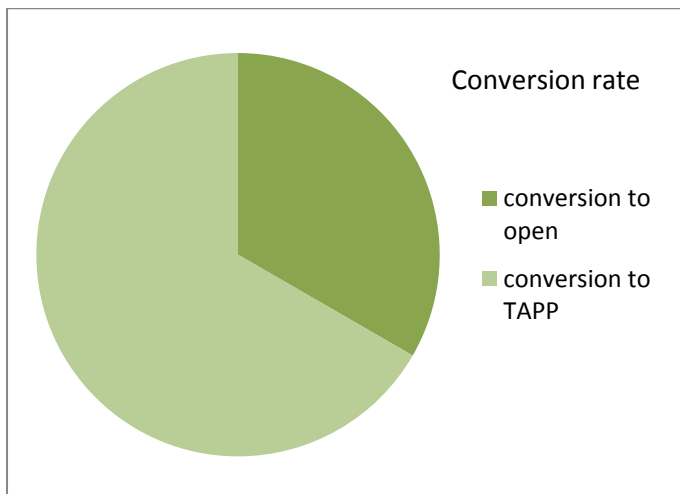
The most common complication noted in our study was urinary retention in 12 patients. 7 patients had vascular injury and 6 developed chronic groin pain. Figure below



5. Conversion rate

In our study 2.5% patients were converted to open in view of severe vascular injury while as 5% of patients were converted to TAPP because of technical difficulties like loss of pre peritoneum, perforation of peritoneum etc.

Figure below



The mean hospital stay of patients in our study was 21.23 ± 6.58 hrs.

There were only two recurrences in our study after 4 years of follow up.

Discussion:

Inguinal hernia repair is one of the most common elective procedures performed in General surgery. The goal of hernia repair include minimizing intraoperative and postoperative complications, achieving effective repair, lowest possible recurrence, rapid return to normal life, cost effectiveness and better cosmetic results. For these reasons various methods of inguinal hernia repair have been utilized over the past. The technique of herniorrhaphy has progressed from open to various laparoscopic techniques.

We performed the study to analyse the outcome of totally extra peritoneal prosthetic repair of inguinal hernia in a hospital with limited available equipment.

Age:

In our study minimum and maximum age was 20 and 80 years for TEP with mean age of 46.76 ± 13.0 years; showing that no age is immune to inguinal hernia. This result is in accordance with study done by ZEINELDIN A. According to his study minimum and maximum age of patients was 19 and 82 years (average-49years) in TEP group.

Sex Distribution:

In our study there were all male patients and no female patient was included in our study. GONG K, et al reported in their study that no female patient was presented TEP group.

Operating Time:

In our study we concluded that the range of operating time was 55 -108 minutes with mean of 80.8 ± 11.97 minutes. KRISHNA A et al concluded in their study that mean operating time in TEP group 72.3 ± 25.9 (30-130 min.). Also GASS M et al concluded in his studies that mean operating time in TEP group 59.0 minutes.

Complications:

Overall complications in our study were 12.5%. Twelve patients in our study developed urinary retention in post-operative period which required catheterization. Retention was because of pain and psychological reasons. 3.5% patients in our study had vascular injury and 3% had chronic groin pain COHAN RV et al; reported overall 13% complications in TEP group.

Conversion Rate:

It was done in 7.5% cases in our study. Seven patients had vascular injury (inferior epigastric artery) during the procedure. Hemostasis was achieved in 2 patients while as 5 patients were converted to open procedure and ligation of vessel was done. 5% of patients were converted to TAPP because of technical difficulties like loss of pre peritoneum, perforation of peritoneum. VAN HEE et al, reported that

conversion to open in laparoscopic TEP procedures 7% respectively. The conversion rate in our study was higher than reported in the literature because of the limited availability of equipment. Also the conversion rate was higher during the early years.

Conclusion:

We concluded that TEP is a safe and effective procedure of repair for inguinal hernias with minimum morbidity in expert hands with a comparable complication rate to other procedures but has a long learning curve and with experience, the complication rate also reduces.

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