

FREQUENCY OF COMPLICATIONS OF LAPAROSCOPIC TOTAL EXTRA PERITONEAL INGUINAL HERNIOPLASTY AT MINIMAL INVASIVE SURGICAL CENTRE, JAMSHORO

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ABSTRACT

Background: There are several different techniques for the treatment of inguinal hernias. The objective of this study was to identify and evaluate the frequency of complications of inguinal hernia repair with a totally extra-peritoneal mesh placement.

Material & Methods: This descriptive study was done in the Minimal Invasive Surgical Centre, Jamshoro and General Surgical Department, Dow University Hospital, Ojha Campus, Karachi, from January 2014 to December 2014. The sample size was 43. All patients of age >20 years were evaluated, diagnosed with symptomatic inguinal hernia and included in the study. Patient with congenital groin hernia, long standing scrotal hernia, unfit for general anesthesia and previous open surgery for prostate, morbidly obese, elderly patients with co-morbidities complete and complicated hernias were excluded from the present study. The patients were explained the advantages and disadvantages of both the techniques (open and TEP repair techniques).

Results: The mean age was 39.3 ± 5.6 , ranging between 20 to 60 years. Most of the patients had right sided hernia 28(65.11%) while patients having left sided hernia were 11(25.58%) and patients of bilateral hernia were 4(9.3%). Direct inguinal hernia was mostly observed in old aged patients and they were 19(44.18%) patients while remaining were of indirect hernia 24(55.81%) patients. Intraoperative complications of total extra peritoneal (TEP) inguinal hernioplasty were during port insertion tear, the peritoneum 2(4.6%) cases, bleeding in extra-peritoneal space during dissection 02(4.6%) cases, obscure the anatomy 3(6.9%) cases, inability to reduce the sac completely 4(9.3%) cases, bleeding during separation of sac from cord structures 3(6.9%) cases, femoral nerve injury 1(2.32%) and sub-cutaneous insufflation 1(2.32%) cases.

Conclusion: We conclude that laparoscopic hernia repair is one that enables faster time safe, effective recovery and return to productive activity, with a rate of procedural complications TEP is low.

KEY WORDS: Inguinal hernia; Hernioplasty; Complications.

This article may be cited as: Abbasi MR, Sangrasi AK, Shaikh U, Shaikh AR. Frequency of complications of laparoscopic total extra peritoneal inguinal hernioplasty at Minimal Invasive Surgical Centre, Jamshoro. *Gomal J Med Sci* 2015; 13: 226-9.

INTRODUCTION

Repair of inguinal hernia is one of the most common surgical procedures. Laparoscopic inguinal

hernia repair is a recent development in addressing common operating problems. Many studies support its superiority over an open hernia repair in terms of postoperative pain, earlier return to normal activity, work, and recurrent hernia.¹ The totally extra peritoneal (TEP) repair, though technically difficult but it is a kind of laparoscopic hernia, which is gaining popularity and acceptance around the world.^{2,3}

The totally extra-peritoneal inguinal herniorrhaphy (TEP) combines the advantages of a power

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outage through the reinforcement mesh in the groin and those of laparoscopic surgery, which reduces postoperative pain and as soon as play time, avoiding the need trans-abdominal approach.³ For these repairs, there are many kinds of mesh and fixation methods. Complications of laparoscopic and open repairs with fixing have been well described, including nerve, vascular, bladder and bowel injury and chronic pain and recurrence of the hernia.⁴

A new technique partially absorbable and self-gripping mesh is designed to open and laparoscopic techniques, which may eliminate the need for any fixing. So many different materials have been developed for hernia barriers in recent years which are used for open and TEP techniques. The base was polypropylene mesh. Although most references advocate mesh fixation but there have been some reports of successful use of these traditional barriers.^{5,6} The objective of this study was to identify and evaluate the frequency of complications of inguinal hernia repair with a totally extraperitoneal mesh placement.

MATERIAL AND METHODS

This descriptive study was conducted at Minimal Invasive Surgical Centre, Jamshoro and General Surgical Department, Dow University Hospital, Ojha Campus, Karachi, from January 2014 to December 2014. This study consists of 43 male patients admitted through the outpatient department, as well as from casualty department. All patients of age >20 years were evaluated, diagnosed with symptomatic inguinal hernia were included. Patient with congenital groin hernia, long standing scrotal hernia, unfit

for general anesthesia and previous open surgery for prostate, morbidly obese, elderly patients with co-morbidities complete and complicated hernias were excluded from the study. The patients were explained the advantages and disadvantages of both the open and TEP repair techniques.

RESULTS

The mean age of the patients was 39.3±5.6 years ranging between 20 to 60 years. Most of the patients were having right sided hernia 28 (65.11%) followed by left sided 11 (25.58%) patients and bilateral hernia 4 (9.3%) patients. Direct inguinal hernia was mostly observed in 19 (44.18%) while indirect hernia was observed in 24 (55.81%) patients. (Table 1)

Table 1: Demographic variables of study patients

Variable	No. of patients	Percentage
Age		
• 20-35 years	19	44.18%
• 36-50 years	18	41.86%
• 51-60 years	6	13.95%
Site of hernia		
• Right side	28	65.11%
• Left side	11	25.58%
• Bilateral	4	9.3%
Type of Hernia		
• Direct	19	44.18%
• Indirect	24	55.81%

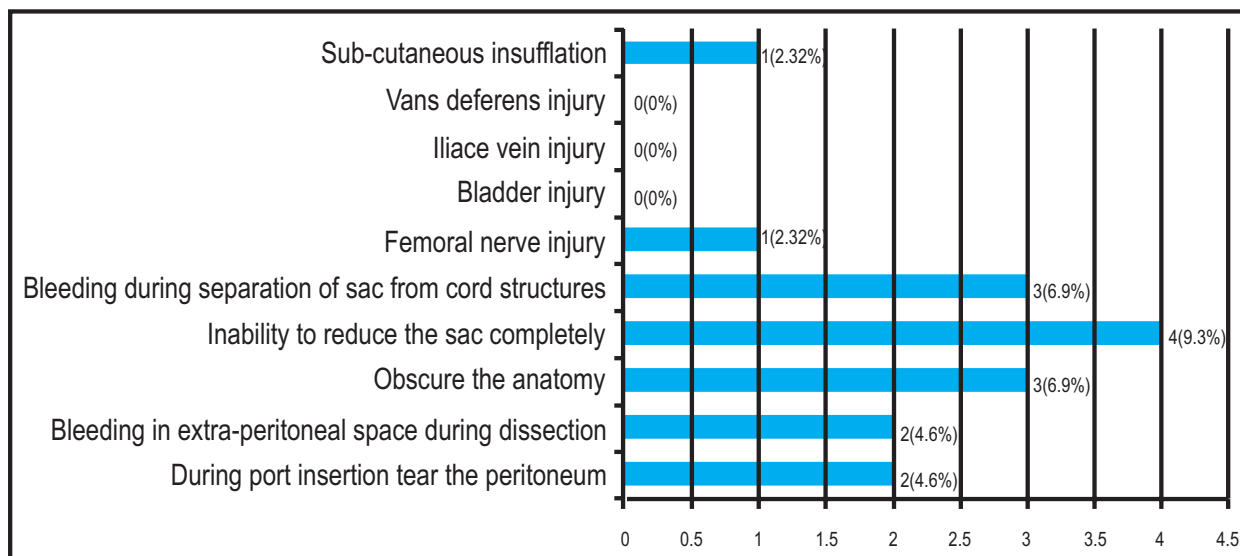


Figure 1: Frequency of complications of laparoscopic inguinal hernioplasty.

Intraoperative complications of total TEP inguinal hernioplasty were during port insertion tear, the peritoneum 2 (4.6%) cases, bleeding in extra-peritoneal space during dissection 2 (4.6%) cases, obscure the anatomy 3 (6.9%) cases, inability to reduce the sac completely 4 (9.3%) cases, bleeding during separation of sac from cord structures 3(6.9%) cases, Femoral nerve injury 1 (2.32%) and sub-cutaneous insufflation 1 (2.32%) cases. (Fig. 1)

DISCUSSION

Laparoscopic total extraperitoneal (TEP) repair gains access to the preperitoneum without the associated pain and morbidity of a larger incision, and it potentially allows for a more rapid recovery.⁷ Still controversies are reported in hernia repair, although many of the techniques are in practice. Laparoscopic inguinal hernia repair is a recent, but less conventional phenomenon, but is gaining popularity all over the world on the basis of these facts lower recurrence rate, less postoperative pain, faster recovery and return to work, the low rate of early and late complications.⁸

In the present study, the maximum age recorded was 65 years and a minimum of 20 years, whereas maximum numbers of cases were seen in 3rd and 4th decade and least number was seen in 6th decade and onwards. In the study conducted by Marcelo de Paula Loureiro⁹ the mean age of patients undergoing totally extraperitoneal endoscopic inguinal hernia repair was found to be 50 ± 32 years where as in our study the mean age of patients was 39.3 ± 5.6 , ranging between 20 to 60 years.

Inguinal hernias are also more common in the right sided (almost 55%).¹⁰ A study by Devajit Chowlek Shyam et al¹¹ also shows a similar trend with 31.57% left sided, 59.64% right sided repairs and 8.77% bilateral repairs. In our study direct inguinal hernia were mostly observed in old aged patients 19 (44.18%) patients while remaining indirect hernia 24(55.81%) patients. However in international study direct hernia was seen in 30 patients (52.63%) and indirect hernia was seen in 27 (47.36%) patients.¹¹

The trocars should be short and operated proportionately less working space and ensure a perfect fit, respectively.¹² The skin incisions should be enough to grab the trocar and prevent slipping. The patient should empty his bladder before surgery. The pressure in the preperitoneal space must be such as to offer adequate resistance when inserting the trocar to prevent perforation of the peritoneum.¹² In our study observed low complication rate were during

port insertion tear, the peritoneum 02(4.6%) cases, bleeding in extra-peritoneal space during dissection 02 (4.6%) cases, while in the study of Arshad Malik¹³ who has reported that peritoneal breach during port insertion was in 07(10.44%) cases and bleeding during dissection in extra-peritoneal space was in 04(5.97%) cases.

As in any laparoscopic surgery, laparoscopic hernia also received much conflict about a long learning curve, increasing the time and new operating approach to anatomy, in particular as regards laparoscopic (extraperitoneal) hernia repair. The next most important and crucial step in any surgery of hernia is the correct identification of anatomical landmarks. It is difficult for beginners because anatomy is different from that seen in open surgery. The first most important step is to identify the pubic bone. After this step, the remaining back benchmarks is to keep this as a reference point. One is advised to keep away from the triangle of doom, which contains the iliac vessels and to avoid placing tacks in the triangle of pain laterally.¹² In our study obscure the anatomy was in 03(6.9%) cases. However in an international study it is reported that difficulty in identifying the anatomy was in 07(10.44%) cases.¹³

One patient developed pain and numbness in the area of the femoral nerve injury due to heat. The lateral dissection is performed from the top down to the psoas muscle laterally-bottom, exposing the nerves in the "lateral triangle of pain." The lateral space contains loose cellular tissue which is dissected completely and unequivocally. We learned to avoid the use of diathermy during this dissection. In our study femoral nerve injury observed in one case 2.32%, while in the study of Alberto Meyer reported femoral nerve injury in 1 (0.02%) case.^{14,15}

CONCLUSION

The complication rate of the procedure TEP is low. Laparoscopic hernia is reproducible and is still our preferred technique. We conclude that laparoscopic hernia repair is one that enables faster time safe, effective recovery and return to productive activity.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.