Original Article

Laparoscopic inguinal hernia repair: analysis of early 58 patients

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Objective: To report our experience with laparoscopic total extra-peritoneal (TEP) inguinal herniorrhaphy at our institution.

Methodology: This retrospective study was carried out from 1st January 2007 to 31st December 2010 at Department of General Surgery, Pakistan Institute of Medical Sciences Islamabad, Pakistan. It included 58 consecutive patients who underwent laparoscopic TEP repair of inguinal hernia at our unit.

Results: All patients were male with a mean age of 46 years (range 25 to 67). During the study period, 69 laparoscopic inguinal hernia repairs were performed in 58 patients. Bilateral hernia repair was done in 19% (n=11). Of the 69 procedures; 12% repairs (n=7) were done for recurrent hernias. In 20% of the patients, the procedure was performed as a day case surgery. Minor complications occurred in 32% of patients, whereas major complication occurred in two patients who developed recurrence in the immediate post operative period. The median time to normal physical activity was 8-11 days for unilateral and 11-16 days for bilateral hernia repair.

Conclusion: Laparoscopic TEP herniorrhaphy is a good alternative to open hernia repair. However, further studies are needed to strengthen this conclusion. (Rawal Med J 2013;38:290-293).

Keywords: Inguinal hernia, laparoscopy, total extra-peritoneal.

INTRODUCTION

Repair of inguinal hernia is one of the commonest surgical procedures all over the world and constitutes a major part of health care. Open method has stood the test of time for decades and different methods indicate that the ideal technique has not been found. With recent advances in laparoscopic surgery, Mesh repair is used for the repair of inguinal hernias. The first laparoscopic herniorhaphy was performed by Ger in 1982.[1] Since then three laparoscopic techniques were evolved, and include transabdominal preperitoneal, intraperitoneal on lay and totally extraperitoneal (TEP) methods of repair.[2] Among them, TEP is accepted as the most ideal method because it can avoid entry into the peritoneal cavity, which can cause intraperitoneal complication such as bowel injury or obstruction.

Today in the developed world, 5-15% of hernia repairs are done laparoscopically.[3] Several studies reported a trend towards an increase in hernia recurrence following laparoscopic hernia repair compared with conventional hernia repair, but this difference was not significant.[4,5] The advocates of laparoscopic repair believe that it has less postoperative pain, a shorter recovery time and better cosmesis.[4] This method of inguinal hernia repair is less addressed in our region. Hence, to evaluate our experience with laparoscopic inguinal mesh repair in terms of full recovery, return to work, complications and recurrence rate, we retrospectively reviewed our patients who had laparoscopic TEP repair for their inguinal hernias.

METHODOLOGY

We retrospectively reviewed a series of patients who underwent laparoscopic TEP repair of inguinal hernia at Surgical Unit III, Pakistan Institute of Medical Sciences, Islamabad, Pakistan from January 2007 to December 2010. The study consisted of 58 patients and TEP approach was used in all patients. Patients with large complete inguinal hernias, obstructed or strangulated inguinal hernias, which had previous pelvic surgeries like appendicetomy and those with co morbid who were unfit for general anaesthesia were excluded from the study. Written informed consent was taken from all patients. Preanesthesia evaluation was done for all patients and all operations were performed by a single surgeon.

Operative findings and time taken for each operation, postoperative analgesia and any complication during hospital stay were recorded. Patients were followed in surgical outpatient department after 15 days and six weeks or earlier in case of complication. At these visits, the history regarding general health, return to normal physical activity and work were recorded. Wound was examined for evidence of infection, condition of the scar, port site hernia and recurrence. Last follow up was done after six months. Data was analyzed by using SPSS v 16.

RESULTS

Out of 58 patients, recurrent inguinal hernias were seen in 12% (n=7) and all had history of open operation for the repair. Five patients had chronic obstructive pulmonary disease and were receiving medical treatment. Bilateral hernias were seen in 19% of patients and seven of them had a history of benign prostatic hyperplasia, so a total of 69 repairs were done. In 20% of the patients the procedure was completed as a day case surgery. Patients' demographics and hernia characteristics are presented in Table 1.

Table 1: Patients' demographics and hernia characteristics

Variable	Value
Number of patients	58
Mean age, years (range)	46.13 (range 25-67)
Mean BMI, kg/m^2 (range)	22.3 (16.8-26.6)
Site of hernias (58 patients)	
Right	27 (48)
Left	20 (35)
Bilateral	11 (19)
Type of hernias	
Indirect	36 (62)
Direct	22 (38)
Recurrent	07 (12)

Values are presented as mean or number (%).

The mean operative time for unilateral hernia repair was 51 minutes; while for bilateral hernia repair was 93 minutes. A reduction in mean operative time was seen with increased operator's experience. Intra operative and post operative complications are summarized in Table 2. Minor complications were seen in 32% of cases and were managed conservatively in most cases. Early major complication was noted in two cases that developed recurrence in first 24 hours of surgery. Upon reexploration, displaced mesh was found in both cases.

Table 2: Details of Complications (n=58)

Complication	Number	Percentage
Port site bleeding	03	05%
Pneumoperitoneom	13	22%
Conversion to open	06	10%
Seroma	09	15.5%
Difficulty in urination	05	8.6%
Testicular pain	01	1.7%
Numbness in groin	03	5.1%
Wound infection	02	3.4%
Recurrence	04	6.8%

Values are presented as number (%).

Mean hospital stay was 2 days for unilateral and 3.5 days for bilateral hernia repair. Six months follow up was done in 79% (n=46), rest were lost to follow-up. The median time to normal physical activity was 8-11 days for unilateral and 11-16 days for bilateral hernia repair. 8.6% (n=5) patients were not satisfied with the procedure.

DISCUSSION

Laparoscopic TEP repair for inguinal hernia is still a new technique in our region. Our initial experience of Laparoscopic TEP repair with encouraging results is consistent with trends in the literature.[5] Our study showed an early recurrence rate within 24 hours of 3.4% and the median time to normal physical activity was 8-11 days for unilateral and 11-16 days for bilateral hernia repair. Five patients were not satisfied with the operation.

With this approach, access to the preperitoneal space is gained without the associated pain and morbidity of large incision, and it potentially allows for a more rapid recovery.[6] Several studies have suggested that laparoscopic TEP repair for inguinal hernia is safe and effective method, and the advantages over open repair are less surgical trauma, quick recovery, short hospital stay, reduced risk of infection, less post operative pain, better

cosmesis and earlier return to work.[7-10] Yet many surgeons feel difficulty in performing laparoscopic TEP repair as the pelvic anatomy is unfamiliar and the working space is narrow. Further, the learning curve for laparoscopic TEP repair is long and steep, and the technique is difficult.[11]

The mean age of our patients was 46 years which is favorable with other studies.[12,13] Inguinal swelling was the commonest presentation (57%) and inguinoscrotal swelling in 43% of cases in our study, while other reported 60% and 40% respectively.[14] The pain was not severe but dragging in nature and occurred in 26% patients. In others studies, incidence of pain were 25% and 30%.[14-17] Other associated symptoms were urinary symptoms (15%), cough (18%) and constipation (17%).

Recurrence rate after inguinal hernia repair is traditionally considered to be the single and most important outcome measure that may require the need for additional operations.[18] Our recurrence rate of 2% compares favorably with other reported series.[1,2] Most recurrences developed in first year postoperatively and were result of surgical error of technique.[5,11,19-21] Our recurrences were also due to some faulty techniques. Two cases presented with recurrence within 24 hours of repair. Upon reexploration, displaced mesh in an interior direction was found in both cases. Hence, follow up time is critical to document the true recurrence rate. Most studies pick short term recurrence rate due to their short follow up period and underestimates their true recurrence rates.[22]

Besides recurrence other complications were also noted during the study. The most common was seroma formation followed by difficulty in urination, wound infection, testicular pain and numbness in groin. All were successfully treated by conservative measures. Regarding postoperative pain, a patient frequently visited our surgical outpatient department with pain in inguinal region after three months of surgery. Several studies reported that in general, pain was less in patients who underwent laparoscopic TEP compared to open repair.[23-25]

Analysis of our mean operating time versus the number of cases performed reported that operating time was 1 hour and 42 minutes for the first ten patients and 51 minutes for the next 33 patients. Further, as the number of cases increased per year, the rate of complications reduced proportionally. Many studies reported that method of repair for inguinal hernia has no impact on mean hospital stay.[22] Several factors affect this outcome measure like hospital routine discharge policy, day case surgery, type of anesthesia (spinal or general) and the time of day the procedure done. Mean hospital stay in our study was 2 days for unilateral and 3.5 days for bilateral hernia repair.

TEP is more advantageous than open repair as it offer a significantly faster return to work. This is due to reduced postoperative pain, decreased infection rates and fewer chronic complications.[22] In our study, the median time to normal physical activity was 8-11 days for unilateral and 11-16 days for bilateral hernia repair. Patient satisfaction is another important outcome measure when one is using a new technique for the surgery. Five patients (8.6%) in our study were not satisfied with the operation. Eklund et al.[23] suggest that increasing experience with the technique decreases the operation times. Langeveld et al.[24] showed that laparoscopic surgery is now cheaper than open surgery. This indicates that a global increase in laparoscopic surgery experience may be improving its cost effectiveness.[26] Limitations of the study include retrospective nature of study, small number of cases studied with limited follow up. Comparison of cost of laparoscopic repair versus conventional open repair was not done.

CONCLUSION

Laparoscopic TEP herniorrhaphy was a good alternative to open hernia repair and initially should be done in selected patients.

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Analysis and interpretation of the data: S H Waqar
Drafting of the article: S H Waqar
Critical revision of the article for important intellectual content: M A Zahid
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