Original Article

Early outcome of laparoscopic total extraperitoneal inguinal hernia repair

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Objective: To determine the early outcome of Laparoscopic total extra peritoneal repair for inguinal hernia.

Methodology: This descriptive study was conducted from March 2010 to February 2012, at Department of Surgery Chandka Medical College Teaching Hospital, Larkana, Pakistan. A total of 164 patients with unilateral, incomplete, reducible inguinal hernia underwent laparoscopic total extraperitoneal repair. Patients were followed postoperatively for early outcome of laparoscopic repair. Statistical analysis was carried out using SPSS version 17.

Results: All patients were male. Mean age was 42 years. Mean operative time was 50±21 minutes (range 25-90). Postoperatively at 1st 24 hours the pain was mild in 110(67%), moderate in 38(23.2%) and severe in 16(9.8%) patients; while pain at 48 hours was mild in 140(85.4%), moderate in 22(13.4%) and severe in 2(1.2%).Early postoperative complications were acute urinary retention in 8 (4.9%) patients, scrotal seroma in 6(3.7%), scrotal hematoma in 4(2.4%) and wound infection in 7(4.3%) patients.

Conclusion: Laparoscopic totally extraperitoneal repair is a new and safe technique for inguinal hernia repair with acceptable rates of morbidity. (Rawal Med J 2014;39: 52-54).

Key words: Inguinal hernia, herniorrhaphy, totally extraperitoneal.

INTRODUCTION

A hernia is a protrusion of a viscus through an opening in the wall of the cavity in which it is contained and occurs more often in males.[1] Between 80-90% of abdominal hernias are in inguinal region; the two main types are direct and indirect inguinal hernias[2]and recurrencescan occurr.[5] Various repair procedures for inguinal hernia fall into two categories: Fascial repairs (Bassini, Bassini with Tanner's slide, McVay, Ferguson, Shouldice) and tension free prosthetic (polypropylene or polyester) repairs. The fascial repairs are the oldest and their only advantage is the avoidance of the prosthetic material, which may become infected, but they carry the highest incidence of recurrence particularly the Bassini operation. The laparoscopic approach has a number of advantages that include less postoperative pain, earlier return to full activity and work, and reduced incidence of persistent groin pain.[3]

The total extra peritoneal (TEP) hernia repair represents the laparoscopic counterpart to the open preperitoneal mesh repair. The risk of neuralgia is eliminated because staples are not used. The complications and the early recurrent rates have been favorable. However, the technique has a longer learning curve and is more costly than the open anterior mesh repair.[6]The aim of this study was to determine the early outcome of laparoscopic TEP repair for inguinal hernia.

METHODOLOGY

This descriptive study was carried out at Department of General surgery Chandka Medical College Teaching Hospital, Larkana, Pakistan from March 2010 to February 2012. A total of 164 patients were included by Non-probability purposive sampling. All patients aged between 18 to 70years with unilateral, incomplete and reducible inguinal hernia were included in the study.

Patients with previous lower abdominal surgery, patients unfit for general anesthesia with co-morbid conditions like major cardiac, respiratory, renal or liver dysfunction, uncontrolled diabetes and morbid obesity and with recurrent inguinal hernia with history of previous open herniorrhaphy were excluded.

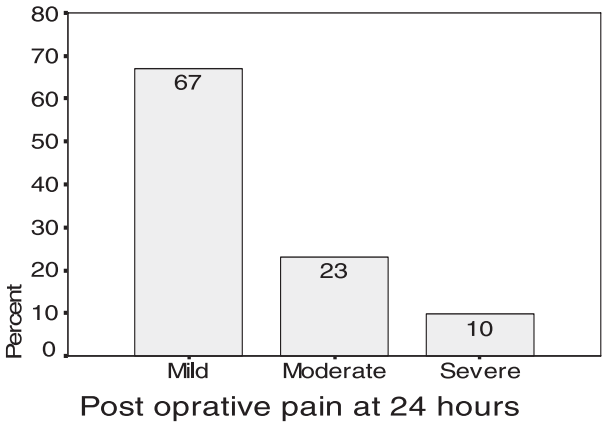
All patients were admitted and written informed consent was obtained from the patient or first degree relatives. All surgeries were performed under

general anesthesia by consultant surgeon having experience in laparoscopic surgery. Prophylactic cefotaxime 1gm was administered at the time of induction of anesthesia and then repeated at 8 hourly intervals. Duration of surgery was documented. Post operative pain was recorded at 24 and 48 hours using verbal rating scale. Complications like acute urinary retention, scrotal hematoma, seroma, or wound infection were noted. After discharge, follow up was done on 7th day and on 14th day of surgery. Statistical analysis was done on SPSS version 17.

RESULTS

All patients were male. The mean age was 42.30±15.46 years (average 18 to 70).105(64%) had hernia on right side and 59(63%) had left sided hernia. 87(53%) had direct hernia while 77(47%) had indirect variety. Mean operative time was 50±21 minutes (range 25-90).

Fig 1. Pain at 24 hour after surgery.



At 1st 24 hours postoperatively the pain was mild in most cases (Fig 1).Pain at 48 hours was mild in 140(85.4%),moderate in 22(13.4%) and severe in 2(1.2%).

Table 1: Post operative complications.

Event	Number	Percent
Acute urinary retention	8	4.9
Scotalseroma	6	3.7
Scrotal hematoma	4	2.4
Wound infection	7	4.3
None	139	84.8
Total	164	100.0

In early postoperative phase, acute urinary retention was found in 8(4.9%), scrotal seroma in 6(3.7%),scrotal hematoma 4(2.4%) and wound infection in 7(4.3%) patients (Table 1).

DISCUSSION

More than 20 million inguinal herniorraphies are performed every year worldwide annually.[4] The procedure is relatively safe and straight forward.[5] The aims of surgery are to eliminate the swelling, to relieve pain and discomfort and to remove the risk of strangulation. Laparoscopic repair seems to be the favored approach for most type of inguinal hernias and TEP is preferred over TAPP. Laparoscopic repair has less postoperative pain, shorter convalescence and earlier return to work.[6]Open inguinal herniorrhaphy is time tested, safe and well understood operation with a high success rate while laparoscopic repair is fairly recent.[7]

In this study, age ranged from 18 to 70 years. This is consistent with other studies.[8,9] Out of 164 patients, 87 had direct inguinal hernia and 77 had indirect hernia. Another study reported that 88% patients had direct hernia and 12% had indirect hernia.[10] Laparoscopic technique usually take more time when compared to open technique.[7,11,12] Mean operative time in this study was 50 minutes (range 25-90) for unilateral hernias. Mean operative time in other studies were 40,[8] 67.85±21.66,[13] 75.72±31.6,[7] 50±13.2[11] and 88 minutes.[14]

Among early complications, retention of urine occurred in 8 (4.9%) patients, which resolved spontaneously or following a period of catheter drainage. It was seen in 4%[8] and in 2.11% patients[14] in other studies. Urinary retention has been reported in 2.08%,[15] 1%,[16] 4.5%,[17] 5.18%[18] and 7.7%[19] in various studies.

Postoperative pain in this study was mild in 85.4%, moderate in 13.4% and severe in 1.2%.Mild to moderate pain was controlled withdiclofenac sodium, however opiates were given in severe pain and to patients who did not respond to diclofenac sodium. Mean pain score was 2.64(mild) in one study,[7] and it was in 12%[8] and 1.05% in other study.[14] There is less postoperative pain in laparoscopic procedure as compared to open repair.[7,11,20,21] Scrotal

seroma occurred in 6 (3.7%) patients and wound infection in 7(4.3%) patients. These are consistent with other studies.[8,17,22]

CONCLUSION

Laparoscopic TEPinguinal hernia repair was safe technique with acceptable rates of morbidity.

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REFERENCES

1. Wantz GE. Abdominal wall hernias. In: Schwartz SI, Shires GT, Spencer FC, Husser WC eds. Principles of surgery. USA: McGraw-Hill, 1994; 1517-1543.
2. Moore KL, Dalley AF. Abdomen. In: Moore KL, Dalley AF. Clinically oriented anatomy. Philadelphia: Lippincott Williams Wilkins 2006; 129-354.
3. Simons MP, Aufenacker T, Bay-Nielsen M,Bouillot JL, Campanelli G, ConzeJ,et al.European Hernia Society guidelines on the treatment of inguinal hernia in adult patients.Hernia. 2009;13:343-403.
4. Jonathan D, Spitz, Arregui ME. Laparoscopic totally extraperitoneal repair for inguinal hernias. In: Bendavid R, Ibrahamson J, Arregui ME, Filament JB, Philips PH. "Abdominal wall hernias" principle and management. Newyork: Springer 2001; 472-480.
5. Sherwinte DA. Laparoscopic Inguinal Hernia Repair [internet] 2011; Available from: http://emedicine.medscape.com
6. Dulucq JL, Wintringer P, Mahajna A. Laparoscopic totally extraperitoneal inguinal hernia repair: Lessons learned from 3,100 hernia repairs over 15 years. SurgEndosc 2009;23:482-6.
7. Takata MC, Duh QY. Laparoscopic inguinal hernia repair. SurgClin North Am 2008;88:157-78.
8. Myers E, Browne KM, Kavanagh DO, Hurley M. Laparoscopic (TEP) versus Lichtenstein inguinal hernia repair: a comparison of quality-of-life outcomes. World J Surg 2010;34:3059-64.
9. Lal P, Kajla RK, Chander J, Saha R, Ramteke VK. Randomised controlled study of laparascopic total extraperitoneal versus open Lichtenstein inguinal hernia repair. SurgEndosc 2003;17:850-6.
10. Khalid M, Wahid Khan A, Fazal Khan A. Laparoscopic inguinal herniorrhaphy: analysis of initial experience. Pak J Med Sci 2006;22:70-3.
11. Shirazi MH, Marsh P, Keane MG, Khushal A, Insall R.Laparoscopic total extra-peritoneal inguinal hernia repairs by a surgeon experienced at laparoscopic cholecystectomy JPAMA2012;62:1301-4.
12. Farooq O, Batool Z, Din A, Amman Ullah A, Butt Q, Kibrya R. Anterior tension free repair versus posterior preperitoneal repair for recurrent hernia. J Coll Physicians Surg Pak 2007;17:465-8.
13. Lau H, Patil NG, Yuen WK. Day case endoscopic totally extraperitoneal inguinal hernioplasty versus open Lichtenstein hernioplasty for unilateral primary inguinal hernia in males: a randomized trial. SurgEndosc 2006;20:76-81.
14. Srsen D, Druzijanic N, Pogorelic Z, Perko Z, Juricic J, Kraljevic D, et al. Quality of life analysis after open and laparoscopic inguinal hernia repair-retrospective study. Hepatogastroenterology 2008;55:2112-5.
15. Subwongcharoen S. Outcome of inguinal hernia repair total extraperitoneallaparascopic hernia repair versus open tension free repair(Lichtenstein technique). J Med Assoc Thai 2002;85:1100-4.
16. Bencini L, Lulli R, Mazzeti MP. Experience of laparoscopic hernia repair in a laparoscopically oriented unit of a large community hospital. J LaparoendoscAdvSurg Tech A 2007;17:200-4.
17. Ahmad H, Nadaam A, Malik AM. Inguinal hernia repair: a comparasion of Lichtenstein and darn techniques. Pak Armed Forces Med J 2007;57:23-7.
18. Nazaar AA, Arshad S, Waheed A, QureshiMS.The outcome of darning method of inguinal hernia repair using polypropylene in Sir Ganga Ram hospital Lahore. Ann King Edward Med Uni 2006;12:243-4.
19. Farooq O, Rehman B, Batool Z. Prolene Darn: safe and effective method for primary inguinal hernia repair. J Coll Physicians Surg Pak 2005;15:358-61.
20. Samieullah, Ali M, Israr M, Ali L, Zada N. Inguinal hernia repair with polypropylene darn :safe and cost effective. Med Channel 2006;12:19-21.
21. McCormack K, Scott NW, Go PM, Ross S, Grant AM. Laparascopic techniques versus open techniques for inguinal hernia repair. Cochrane Database Syst Rev 2003;(1):CD001785.
22. Wullstein C, Strey C, Woeste G, Bechstein WO. Inguinal hernia: laparoscopic or open surgery? ZentralblChir 2008;133:433-9.