Outcome of External Oblique Hernioplasty; An Experience at MMC Mardan

Usman Ali[1], Naik Zada[2], Wajid Akbar[1], Shafiullah[3]

ABSTRACT

Background: Inguinal hernia repair is the most common general surgical procedure. External oblique hernioplasty utilizes the aponeurosis of external oblique muscle to strengthen the posterior wall of inquinal canal.

Objective: To assess the outcome of external oblique hernioplasty in terms of early complications and recurrence.

Material and Methods: The study design was descriptive and was conducted in MMC Mardan from 14th June 2015 till 20th June 2016. An informed consent about the procedure was taken. The patients conditions were optimized before surgery after conducting investigations. All patients fit for general anesthesia were included in the study. All the patients were operated by a experienced surgeons and postoperative complications were recorded. All the patients were followed up for a period of six months.

Results: All the 57 patients were operated and all were male suffering from inguinal hernia. In the early postoperative period 14% of patients had urinary retention. Chronic pain was observed in 14% of patients while 7% of patients reported with SSI.

Conclusion: Results of the procedure are comparable to the results of mesh repairs in terms of immediate postoperative period. Long term complications like recurrence are awaited.

Keywords: *Hernioplasty, External oblique repair, tension free repair.*

This article may be cited as: Ali U, Zada N, Akbar W, Shafiullah.
Outcome of External Oblique Hernioplasty; An Experience at MMC Marda. J Saidu Med Coll Swat 2019;9(2):220-4.

INTRODUCTION

Inguinal Hernia repair is the most frequently performed surgical procedure worldwide in general surgery[1].Inguinal hernia repair is the most common general surgical procedure in industrialized countries, with a frequency of about 200 operations per 100,000 persons per year[2] .

The repair procedure can be open or minimum invasive. Lichtenstein tension free repair is the most common technique for open inquinal hernia surgery[3] . The endoscopic procedure TEP and TAPP and open techniques Lichtenstein, plug and patch and PHS represent the gold standard in inguinal hernia repair recommended in guidelines of European Hernia Society and the European Association of Endoscopic surgery[4] .

External oblique hernioplasty utilizes the aponeurosis of external oblique muscle to strengthen the posterior wall of inquinal canal.Lichtenstein repair (mesh repair) is gold standard in open inquinal hernia surgery.The purpose of this study was to search for a procedure with results comparable to gold standard in terms of cost benefit postoperative complications and hospital stay.

1. *Department of Anatomy, Bacha Khan Medical College, Mardan*
2. *Department of Anatomy, Saidu Medical College, Swat*
3. *Department of Community Medicine, Bacha Khan Medical College, Mardan*

Correspondence: Usman Ali
Deartment of Anatomy, Bacha Khan Medical College, Mardan
Email: usalikan60@gmail.com

Received: April 22nd, ,2019, Accepted: August 10th, 2019

In this procedure herniotomy is followed by strengthening of posterior wall of inguinal canal by external oblique aponeurosis. Incision in this procedure is similar to mesh repair(inquinal incision).

The upper leaf of external oblique is sutured by nonabsorble sutures sutures to posterior lip of inquinal ligament posteriorizing the anterior wall . The sutured leaf of external oblique is incised about 3-4 cm above the sutured line. The upper incised edge of external oblique is also sutured by nonabsorble sutures, resulting in a wide band of external oblique aponeurosis stretch ing across the posterior wall of inquinal canal. The lower edge of external oblique is sutured to the upper non sutured leaf of external oblique. This procedure transforms weak posterior wall of inguinal canal into thick tough layer. Thus utilizing body own tissues avoiding foreign material as in mesh repair.

MATERIALAND METHODS

The study design was descriptive and was conducted in MMC Mardan from 14th June 2015 till 20th June 2016. All the patients presenting to outpatient with inguinal hernia were admitted after taking a thorough history. After admission an informed consent was taken about the procedure. All the comorbid conditions of patients were addressed and optimized before surgery. Patients were admitted without gender discrimination. Fitness for general anesthesia was inclusion criteria, so unfit patients were excluded from study. Patients with weak abdominal wall and

direct inguinal hernias with large defect requiring mesh repair were included in the study. Patients were investigated with routine investigations like X ray chest, full blood count and blood sugar . ECG, ECHO, and pulmonary function tests were performed in selected cases.

All the patients were operated by a senior consultant (Associate professor) and various parameters like operating time immediate post operative , early postoperative complications were recorded. The patients were followed for a period of one month.

All the complications were recorded processed and compared with complications of mesh repair in literature.

RESULTS

External oblique hernioplasty was performed in MMC Mardan in 57 patients . All the patients presenting with the problem of inguinal hernia were male. Majority of patients were suffering from indirect inquinal hernia . While 8.7% of patients were having recurrent problem (recurrent hernia). In our study the mean age of presentation was 26 years. The mean operation time was 47+/_10 minutes. The average length of stay in hospital was 2.5 days with minimum of 1.5 days and maximum of 4 days. Time to return to work was on average ten days for those who were self employed and 22 days for those patients employed by others. In the immediate postoperative period 21% of patients experienced pain and 14% had urinary retention . In the early postoperative period pain (10%) and scrotal swelling(8%) were important gadgets for assessment (Table 01). In the late postoperative period chronic pain was present in 14% of and SSI in 7% of our patients(Table 02). One month of follow up revealed no recurrence.

DISCUSSION

Mesh repair open or endoscopic still remain as gold standard [4] with least complications and variable cost. Eighty two percent of surgeons use the tailored approach, the differential use of several hernia repair techniques depending upon the findings of patients[4]. A mesh based repair is generally recommended, this seems reasonable in view of the pathogenesis of the condition, which involves an abnormality of extracellular matrix. Improvement in surgical techniques together with development of new prosthetic materials and a better understanding of how to use them have significantly improved outcomes for many patients[5]. Improvement in failure rates have occurred most notably in centers specializing in hernia surgery with some institutions reporting failure rates of less than 1%.

This study was designed to asses complications of external oblique hernioplasty and to compare it with the outcome of different tension free repairs in

Table 1. Immediate post operative complications

PAIN	6 PATIENTS	10%
BLEEDING / BRUISING	2 PATIENTS	4%
HEMATOMA/ SEROMA	3 PATIENTS	6%
SCROTAL SWELLING	5 PATIENTS	8%
HYDROCELE	2 PATIENTS	3.5%

Table 2. Late postoperative complications after 7 days

CHRONIC PAIN	6 PATIENTS	10.5%
SWELLING IN WOUND	1 PATIENTS	1.7%
SCROTAL SWELLING	4 PATIENTS	7%
HYDROCELE	2 PATIENTS	3.5%
SSI SURGICAL SITE INFECTION	4 PATIENTS	7%
RECURRENCE	0 PATIENTS	0%

literature. In our study a total of 57 patients were operated upon. All the patients in our study were male[5]. Similar observation about gender distribution was recorded by Burcharth J[6] . Indirect hernias constituted 64% of our patients. Right sided hernia (52%)dominated our study. Sigh RR recorded similar observations about right sided dominance in inguinal hernia[5]. Direct hernia constituted 27% of our study with no bilateral inquinal hernias while 9% patients had recurrent problem. In our study 38% patients were up to 20 years of age and 29% were up to 29 years of age. Young patients dominated our study. In another study the age range was 40-50 years of age[5] . Saxena et al recorded mean age as 56.

The mean operation time was 47±10 minutes. Saxena et al reported average operation time as 57 minutes[7]. Papazioqas recorded operation time as 75±10 minutes for open mesh repairs[8]. Karaca AS reported mean operation as 53±32 minutes[9].

Immediate postoperative complications were pain and urinary retention in 21% and 14% of our patients respectively[5]. Singh RR reported pain and urinary retention in 8% and 4% respectively[5]. Saxena et al reported urinary retention in 6% of patients receiving spinal anesthesia[7]. Salma U reported that majority of her patients were complaining of pain both in open and endoscopic surgeries[10]. Reiner MA reported urinary retention in 4% of patients [11].

Bruising and bleeding was observed in 6% of our patients, responded to conservative measures . Sexena et al reported echymosis in 4% of patients[7]. Hematoma and seroma were observed in 6% of our patients . Singh RR reported seroma in 12% of his patients[5]. Sexena et al observed seroma in 4% of his patients[7] . Reiner MA reported seoma formation in 3% of patients [11].

We observed scrotal swelling in 8% of our patients. Reiner MA observed scrotal swelling in 2% of his patients[11]. Singh RR reported scrotal swelling in 4% of his patients[5].

In our series we had 4 cases of superficial wound infection. No deep tissue infections were encountered. Singh RR observed infection rate as 4% , that responded to conservative measures and preserving the mesh. Reiner MA reported infection rate as 0.1% with no cases of mesh removal[11]. Froylich et al suggested that although previous experience have shown that obese patients have increased morbidity following open repairs ,the present results show that laparoscopic surgery were less likely to experience deep surgical site infection[12]. Zhang experienced more deep SSI in overweight in open repair group[3]. Willougby AD suggested that overall morbidity was greater in open repair group than laparoscopic repair group[13]. Karaca AS concluded that obese patients undergoing laparoscopic repairs are less likely to get deep SSI or wound dehesicence[8].

Chronic pain was present in six of our patients. Laparoscopic repairs are associated with faster return to usual activities less persistent pain and numbness[14]. HuangCS reported chronic disabling pain with PHS repairs [15] in 2.8% of his patients. He further concluded that prolene hernia system repair can de performed in shorter time and is associated with minor wound infection and quick return to daily activities. Authors have been working out how to reduce chronic pain which is a distressing symptom. Some of the authors recommend laparoscopic procedures to prevent chronic pain but the literature is not convincing enough. Suture less mesh self gripping mesh ,self adhesive mesh are the efforts devised to abolish chronic pain in open or laparoscopic repairs. Stay et al concluded that ultrasound guided nerve block procedure following mesh repairs provided better pain controll[16].

In our series there was no recurrence of hernias. Peitsch reported recurrence in 1.7% of elective and 2.3% of emergency patients [17]. In our set up all the patients were admitted through Out Patient Department with no emergency patients. Wujj concluded that elective hernia repairs in elderly has similar mortality as compared to general population in contrast to emergency surgery which carries high mortality[18]. Bucharth J reported overall recurrence rate of 5.2% while direct hernia recurrence was reported as 11%[19]. Direct hernia along with female sex and smoking were significant factor for recurrence[20].

CONCLUSION

External oblique hernioplasty has results comparable to mesh hernioplasty. Further studies are needed to evaluate long term results and cost effectiveness.



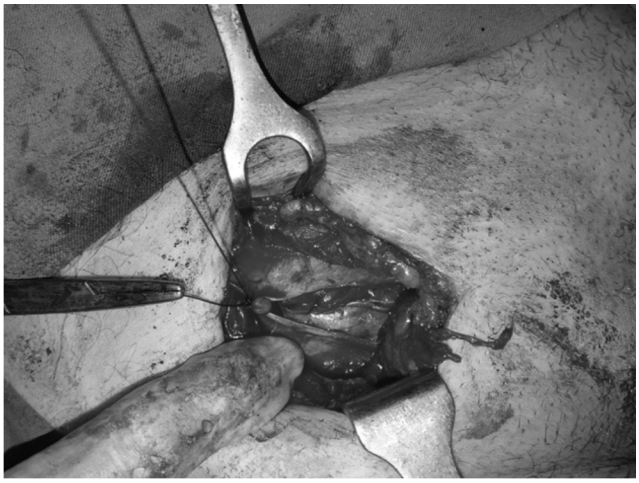
This pictures shows an artery clamp applied to inguinal ligament and bulging weak posterior wall of inguinal canal above the inguinal ligament



This picture shows upper leaf of external oblique sutured to inguinal ligament and artery clamp applied to lower leaf of external oblique. The bulging posterior wall is now supported by tough external oblique apponeurosis as there is no bulge



this picture shows a band of external oblique across posterior wall of inquinal canal with lower edge sutured to inguinal ligament and upper edge sutured to roof of inguinal canal. This repair creates a stronger posterior wall than mesh repair.



This picture shows shows closure of external oblique aponeurosis while in between the two leaves of external oblique the band of external oblique strengthening the posterior wall of inguinal canal is clearly visible

REFERENCE

1. Klobusicky P. Usage of self-adhesive mesh in TAPP hernia repair: A prospective study based on Herniamed Register, J Minimum Access Surg.2016;12(3):226-34.
2. Berger D. Evidence Based Hernia Treatment in Adults. Dtsch Arztebl Int.2016;113(9):150-7.
3. Zhang C. Self gripping versus sutured mesh for inguinal hernia repair: a systematic review and meta-analysis of current literature. J Surg Res 2013;185(2):653-60.
4. Kockerling F.Tailored approach in inguinal hernia repair decision tree based on the guidelines. Front Surg, 2014;1:20.
5. Sing RR. A Study about Inguinal hernia mesh repairs: plug and patch versus Lichtenstein mesh repair technique. Int. Surg.J.2016;3(4):1967-74.
6. Pradep Saxena. A prospective comparative study of Lichtenstein mesh hernioplasty performed under local and spinal anesthesia.Int.J.2016;3(3):1477-1485.
7. Burcharth J. The epidemiology and risk factors for recurrence after inguinal hernia surgery. Dan Med J. 2014;61(5):B4846
8. Papazioqas B. Tension free repair versus modified Bassini technique for strangulated inguinal hernia : a comparative study. Hernia 2005;9(2):156-9.
9. Karaca AS. Comparison of inguinal hernia repairs performed with Lichtenstein, Rutkow-robbins and gilbert double layer graft method. Indian J Surg.2015;77(1):28-33.
10. Salma U. A comparison of postoperative pain and hospital stay between lichtenstein's repair and Laparoscopic Transabdominal preperitoneal (TAPP) repair of hernia: A randomized controlled trial. Pak j Med Sci 2015;31(5):1062.
11. Reiner MA. Laparoscopic Total Extraperitoneal Hernia Repair Outcomes. JSLS.2016;20(3).
12. Froylich D. Laparoscopic versus open inguinal hernia repair in patients with obesity: an American College of Surgeon NSQIP clinical outcomes analysis. SurgEndosc 2016;21.

13. Willoughby AD. Open versus laparoscopic unilateral inguinal hernia repairs: defining the ideal BMI to reduce complications. SurgEndosc.2016;18.
14. McCormack K et al. Laparoscopic surgery for inguinal hernia repair: systematic review of effectiveness and economic evaluation. Health Technol Assess.2005;9(14):1-203.
15. Huang CS. Prolene hernia system compared with mesh plug technique : a prospective study of short to term- to mid-term outcomes in primary groin hernia hernia repair. Hernia 2005;9(2):167-71.
16. Stay A. Transversus Abdominis plane versus Illioinguinal and Illohypogastric Nerve Blocks for Analgesia Following Open Inguinal Herniorraphy. Rambam Maimonides Med J. 2016;28:7(3).
17. Peitsch WK. A modified laparoscopic hernioplasty (TAPP) is the standard procedure for inguinal and femoral hernias: a retrospective 17-year analysis with 1,123 hernia repairs.SurdEndosc.2014;28(2):671-82.
18. Wu JJ. Should we perform elective inguinal hernia repair in the elderly ? Hernia 2016;20.
19. Burcharth J. Direct inguinal hernias and anterior surgical approach are risk factors for female inguinal hernia recurrences. Langenbecks Arch Surg 2014;399(1):71-6.
20. Burcharth J. Patient-related risk factors for recurrence after inguinal hernia repair: a systematic review and meta-analysis of observational studies. Surginnov.2015;22(3):303-17.