LICHTENSTEIN REPAIR OF INGUINAL HERNIA

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ABSTRACT

Background: Inguinal hernia repair is one of the commonest procedures performed by surgeons. Lichtenstein hernioplasty is a tension-free mesh repair of inguinal hernia. The objective of this study was to share our experience of open tension free repair of inguinal hernia using Polypropylene mesh.

Material and Methods: This descriptive study was carried out at Surgical unit of Naseer Teaching Hospital, Gandhara Medical University, Peshawar, during the period from 1st February 2011 to 31st October 2013. Informed consent was taken from all the patients before including them in the study. The study excluded patients with obstructed or strangulated inguinal hernia, ASA class III and above and patients unwilling to participate in the study. Patients were followed up to 12 months. Important variables were patients' demographics, outcome of surgery, complications of surgery and postoperative pain. Postoperative pain was assessed on Visual Analogue Scale. The data was collected on a preformed proforma and analyzed on SPSS version 21.

Result: The study included 220 patients. Mean age was 53 years (18-75 years). Hernia was indirect in 57.73%and direct in 42.27%. Superficial surgical site infection occurred in two cases (0.91%), both patients responded to conservative measures. Seroma developed in 5 patients (2.27%). Postoperative pain was mild (< 50mm) in 68.18% (n=150), moderate (≥ 50mm ≤ 69mm) in 23.18% (n=51) and severe (≥ 70mm) in 8.64% (n=19). Chronic groin pain occured in 5 cases (2.27%). Recurrence was noted in two cases. Mean length of hospital stay was 2 days.

Conclusion: Open mesh repair of inguinal hernia is a safe technique with low risk of postoperative complications.

Key Words: Inguinal hernia, herniorrhaphy, Lichtenstein technique, mesh.

INTRODUCTION

Inguinal hernia repair is one of the commonest procedures performed by surgeons. Inguinal hernia accounts for 75% of anterior abdominal wall hernias.[1] Surgical treatment of inguinal hernia has evolved considerably over time. A wide number of procedures for repair of inguinal hernia have been described but an optimal method of repair is still debated. Open mesh repair was described by Lichtenstein and Shulman in 1986.[1,2] Lichtenstein procedure has rapidly increased as a 'gold standard' operation in inguinal hernia.[2-4] Lichtenstein hernioplasty is a tension-free technique, which uses polypropylene mesh to support the inguinal muscular layers. Studies have reported that the learning curve of Lichtenstein hernioplasty is shorter than most of other inguinal hernioplasties.[5] It can also be performed under local anesthesia as an outpatient procedure with cost savings.[7] Recurrence is a major drawback of any inguinal hernioplasty. Many authors have reported very low recurrence rate after Lichtenstein repair.[2-6] The objective of this study was to share our experience of open tension free repair of inguinal hernia using Polypropylene mesh.

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MATERIAL AND METHODS

This descriptive study was carried out at Surgical unit of Naseer Teaching Hospital, Gandhara Medical University, Peshawar, during the period from 1st February 2011 to 31st October 2013. The study included 220 patients of both sex and age more than 18 years with the diagnosis of inguinal hernia. Written informed consent was taken from all the patients before including them in the study.

The study excluded patients with obstructed or strangulated inguinal hernia, ASA class III and above and patients unwilling to participate in the study. Complete history and thorough physical examination were carried out in all patients. Investigations included full blood count, serology for hepatitis B and C, chest x ray, ECG and Abdomino-pelvic ultrasound.

Patients were admitted on the day of surgery. One dose of intravenous second generation Cephalosporin was administered at the time of induction of anesthesia. Surgery was performed under General anesthesia with endotracheal intubation. After incising the skin and external oblique aponeurosis, the spermatic cord was elevated from the posterior wall of the inguinal canal. After herniotomy, a polypropylene mesh (6x 11 inch) was trimmed to fit the floor of the inguinal canal. Apex of the mesh was sutured to the public tubercle using a No 0 Polypropylene suture. The lower border of mesh was sutured to the free edge of the inguinal ligament using continuous suture. The mesh was then stitched to the conjoined tendon by interrupted 2-0 Polypropylene

suture. An opening was made in lower edge of the mesh to accommodate spermatic cord. The two cut edges of the mesh were sutured together around the spermatic cord with interrupted Polypropylene suture. External oblique aponeurosis was closed with absorbable suture. The patients were shifted to ward after recovery from anesthesia and monitored for the development of any complications. Patients were mobilized in the evening after surgery.

Patients were followed up at 4 weeks, 3 months, 6 months and then at 12 months. At each visit, history and physical examination were carried out. Important variables were patients' demographics, outcome of surgery, complications of surgery and postoperative pain. Complications of surgery included all peri-operative and postoperative complications.

Postoperative pain was assessed on Visual Analogue Scale (VAS). Patients were asked about the intensity of their pain after surgery and during follow up. VAS consisted of a 100-mm horizontal line marked at one end with the words "no pain" and at the other end with the words "worst pain imaginable." The researcher asked the patients to mark the line at the point that best represented the intensity of their pain. The VAS numeric value was the distance in millimeters from "no pain" to the point marked by the patient.

All the data was collected on a preformed structured proforma. The data was analyzed on SPSS version 21. Mean, standard deviation were used for continuous data while frequency, percentages and proportions for categorical or dichotomous data.

RESULT

The study included 220 patients. Mean age was 53 years (18-75 years). Inguinal hernia was unilateral in 90.9% (n= 200) and bilateral in 9.09 % (n=20). Hernia was indirect in 57.73% (n=127) and direct in 42.27% (n=93).

Postoperative complications are shown in Table 1. Superficial surgical site infection occurred in two cases (0.91%), both patients responded to conservative measures and did not require mesh removal. Patients with hematoma required drainage of hematoma. Seroma was noted in 5 patients (2.27%); seroma required percutaneous aspiration of collection in two cases. Postoperative pain assessed by VAS score was mild (< 50mm) in 68.18% (n=150), moderate (≥ 50mm ≤ 69mm) in 23.18% (n=51) and severe (≥ 70mm) in 8.64% (n=19). Chronic groin pain persisting for more than three months after surgery was noted in 5 cases (2.27%); pain responded to NSAIDS.

Recurrence of inguinal hernia was noted in two cases; one year after repair in one case and three years after repair in the other case. Mean duration of surgery was 45 minutes (range 30-85 minutes). Mean length of hospital stay was 2 days (range 1-8 days).

Three patients were lost to follow up. Two were Afghan refugees; they migrated back to Afghanistan after surgery. One patient refused to come for follow up despite repeated invitations. Thus, 217 patients completed the study.

Table 1: Postoperative Complications

S. No.	Complications	No.	Percentage
1.	Atrial fibrillation	1	0.45%
2.	Respiratory tract infection	2	0.91%
3.	Urinary retention	3	1.36%
4.	Ischemic orchitis	1	0.45%
5.	Groin pain	5	2.27%
6.	Wound infection	2	0.91%
7.	Hematoma	3	1.36%
8.	Seroma	5	2.27%
9.	Recurrence of inguinal hernia	2	0.91%

DISCUSSION

Inguinal hernia repair is one of the commonest surgical procedures performed by general surgeons. The number of hernia repairs performed in USA is 800,000/ year. 2 Different techniques of repair have been described but the optimal procedure is still debated. Inguinal hernioplasty procedures vary by using mesh or not, site of mesh placement, approach for hernia repair. Each procedure has its advantages and disadvantages.

Lichtenstein repair is considered gold standard technique for open inguinal hernia repair. Mesh repair is easy to learn, safe with low postoperative complications. It can be performed under local anesthesia and allows early return to work.[2-7] In our study 98% cases were discharged on the first hospital day. Some authors have even recommended mesh repair as a day case surgery.[7] This is especially useful in our setup where most people are under-privileged, belong to far-flung areas and cannot afford long leave from work.

Mesh repair allows tension free repair with low rate of recurrence.[8] A Cochrane database review reported that the recurrence rate was reduced by 50-75% when mesh was used for inguinal hernia repair compared to non-mesh repair.[8] Different studies have reported 0-0.4% recurrence rate after open mesh repair.[8-12] In our study recurrence was observed in 2 cases (0.91%). This is comparable with other studies. Malik AM et al compared mesh repair with non-mesh repair of inguinal hernia.[8,9] The authors reported statistically significant difference in the recurrence rate between the two groups. Recurrence was observed in 7.1% (n=29) in non-mesh repair and in 2% (n=8) in mesh repair group.[8,9]

Wound infection is an important complication of mesh repair. Many authors have reported higher rate

of infectious complications after mesh repair. Infection rate after open mesh repair ranges from 0.2-0.8%.[2,3,5,12] In local studies infection rate has been reported from 0-5.1%.[5-8], 10 In our study wound infection was observed in 0.91% (n=2).

Chronic groin pain is a postoperative complication with significant impact on patient's quality of life. It is defined as groin pain at or beyond three months following inguinal hernia repair.[12,13] Perioperative nerve damage and postoperative mesh related fibrosis are believed to be responsible for chronic groin pain. Risk factors for chronic inguinodynia include absence of visible bulge before surgery, recurrent hernia repair, history of moderate to severe postoperative pain.[12-14] Incidence of chronic groin pain ranges between 0- 62.9%. Moderate to severe pain is noted in 10% patients; while, in 2-4% quality of life is affected by severe pain.[12-14] In our study groin pain was observed in 5 cases (2.27%), all patients were managed conservatively.

There were many limitations in our study. Some of these limitations were descriptive nature of study, small sample size and short follow up.

CONCLUSION

Open mesh repair of inguinal hernia is a safe technique with low risk of postoperative complications. It allows early discharge from hospital and has low risk of recurrence.

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