ORIGINAL ARTICLE

Results of Open Mesh Hernioplasty (Lichtenstein) for Inguinal Hernia: A Study of 120 Cases at Ghurki Trust Teaching Hospital, Lahore

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ABSTRACT

To evaluate the results of Lichtenstein's technique for repair of inguinal hernia using polypropylene mesh**. Methods**: This was a descriptive study conducted over a period of three years from July 2006 to June 2009 in surgical deptt. GTTH, Lahore. 120 patients were received through the out patient department with diagnosis of inguinal hernia. All the patients were above the age of 18 years with reducible hernia and evidence of swelling in groin >2 months. All the patients were subjected to inguinal mesh repair using the Lichtenstein technique with polypropylene mesh.
Results: Mean age of patients was 52.2±15.1 years. 64 patients (53.3%) had right sided inguinal hernia while 56 patients (46.7%) had a left sided hernia. 68 patients (56.7%) had indirect hernia and 52 (43.3%) cases had direct hernia. Mild pain was observed in 56 cases (46.7%), moderate pain in 40 cases (33.3%), and severe pain in 24 cases (20.0%).
Conclusion: Lichtenstein's technique of inguinal repair is a safe and effective procedure.
Keywords: Inguinal hernia, Lichtenstein technique, hernioplasty.

INTRODUCTION

Inguinal hernia regardless of type is one of the most common diseases that a surgeon has to manage[1]. Improved surgical techniques and a better understanding of the anatomy and physiology of the inguinal canal have significantly improved outcomes for many patients. Inguinal hernia repair has been evolving for the past 130 years and the pace of evolution accelerated by the introduction of open mesh repair technique for inguinal hernia by Lichtenstein in 1986. The Lichtenstein technique has since become the most commonly used (with various modifications) on account of its ease of operation and because it provides a tension-free repair with good long-term results[2,3]. Tension free mesh repair has replaced the traditional suture repair in most centers of world. Tension-free mesh repair is nevertheless associated with complications such as foreign body reaction, infection, pain, fistula formation, migration, shrinkage, and recurrence[4]. Other complications include skin anaesthesia, bruising and haematoma formation, seroma formation, orchitis and testicular atrophy[5].

The aim of this study was to evaluate the early postoperative complications using polypropylene mesh in patients undergoing Lichtenstein technique for inguinal repair.

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METHODOLOGY

This was a descriptive study conducted over a period of three years from July 2006 to June 2009 in Surgical floor of GTTH, Lahore. In this duration 120 patients were received through the out patient department with diagnosis of inguinal hernia. Inclusion criteria was age >18 years, reducible hernia and evidence of swelling in groin >2 months. Exclusion criteria was age <18 years, chronic constipation, chronic cough, symptoms of prostatism, irreducible hernia, obstructed hernia, strangulated hernia, and patients with uncontrolled diabetes mellitus.

Following admission a detailed history and examination was performed. All patients were investigated for haemoglobin , blood urea and glucose, chest x-ray. Electrocardiogram was advised for all patients. A detailed explanation about the participation in the study was given to the patient and a written consent was obtained.

Following incision the external oblique aponeurosis was cut exposing the inguinal canal and its contents. Then dissection of sac from the spermatic cord and herniotomy was performed leaving entire floor and posterior wall of the inguinal canal exposed fit for placement of a 6×11 Cm Prolene mesh which was trimmed to fit the space, with a slit cut laterally to accommodate the spermatic cord. The mesh lied with the medial edge 1–2 Cm medial to the pubic tubercle. It was fixed inferiorly first starting at the medial end with continuous 2/0 prolene suture. Three or four interrupted sutures

were used to fix the mesh superiorly. The two tails were then overlapped lateral to the deep ring and secured by two or three interrupted sutures making sure that the cord is not constricted. Having checked for haemostasis the cord was replaced. The external oblique aponeurosis was then closed by with continuous Vicryl 1.

A proforma containing relevant demographic data, type of hernia, details of investigation and details of individual operative findings was prepared and recorded. During follow up data regarding the development of complications in the first month postoperatively was recorded. Data collected included duration of hospital stay, pain, ambulation and complications recorded during the operations or the hospital stay and first six weeks postoperatively. Surgical complications were listed as having postoperative pyrexia, pain, seroma formation, haematoma, paralytic ileus, abdominal distension and wound infection. Medical complications were atelectasis, pneumonia, DVT, pulmonary embolism and other anaesthetic complications.

The data was fed and then analyzed on SPSS version 13.0 for descriptive statistics. Variables were expressed as percentages and standard deviation.

RESULTS

120 patients were included in the study and all were males . Mean age of patients was 52.2±15.1 years. Mean hospital stay was 4.21±1.40 days. 64 patients (53.3%) had right sided inguinal hernia while 56 patients (46.7%) had a left sided hernia.68 patients (56.7%) were diagnosed preoperatively with indirect hernia and 52 patients (43.3%) had a direct hernia.

For the data collected in the postoperative duration, 20 patients (16.7%) had postoperative pyrexia. Using the visual analogue score patients were categorized having mild pain in 56 cases (46.7%), moderate pain in 40 cases (33.3%) and severe pain in 24 cases (20.0%). Oral feeding was resumed following a mean duration of 8.62 hours in those that underwent the procedure following the use of general anaesthesia. 02 patients (3.3%) in all developed a seroma. Two patients (3.3%) developed a haematoma that required drainage and haemostasis was secured. Two patients (3.3%) had a prolonged recovery and presented with abdominal distension but settled on a nil per oral regimen. 02 cases (3.3%) presented with infected wounds with infection of mesh that required debridement.

All 120 patients presented in the follow up period till the first 06 weeks. In the post operative period all these complications were kept to mind and noted. There was a special mark to the cosmetic outcome by measuring the length of the scar at follow up of first 06 weeks. The mean length of the scar was 7.62±1.101 Cm.

Table 1: Per operative findings (n=120)

Right hernia	64(53.3%)
Left hernia	56(46.7%)
Direct hernia	52(43.3%)
Indirect	68(56.7%)

Table 2: Post operative complications(n=120)

Complications	**%age**
Pyrexia	20(16.7%)
Seroma Formation	08(6.6%)
Haematoma	02(3.3%)
Abdominal Distension	02(3.3%)
Wound Infection	02(3.3%)
Post-Operative Pain	
Mild	56(46.7%)
Moderate	40(33.3%)
Severe	24(20%)

DISCUSSION

Mesh repair truly is an obvious improvement in repair of inguinal hernia. In an attempt to reduce the incidence of recurrence following the repair of inguinal hernia, various techniques have been used. Including autologous tissue techniques and a variety of biomaterials.[6] Lichtenstein technique and its modifications have become some of the most popular and Frequently performed surgeries.[7] It is a simple, operator-friendly technique that is easy to learn and perform. The incidence of perioperative and postoperative complications is minimal. Most of the patients return to routine life within 48 hours and 45% of physical labourers return to work within 5 weeks.

Yet there is a high incidence of chronic groin pain following hernia repair. and chronic groin sepsis after mesh repair requires complete removal of mesh to treat the sepsis.[8] Possible damage to the spermatic cord and nerve entrapment following mesh repair due to extensive fibrosis are also concerns raised by this technique.[9,10] Depending on the level of expertise and the degree of handling the incidence of post operative pain is greatly altered. Yet the results from a study conducted by Danielson et al[9] amongst a list of open repairs Lichtenstein's requires lesser expertise with a less steep learning curve.

The mean age in our study is 52.5 years (S.D±15.2) which is comparable to studies in the west[10] but strongly contradicts African studies[1]. The side of inguinal hernia was dominantly found per-operatively on the right side in 64 patients (53.6%). Whereas the type of hernia was predominantly of the indirect type; 68 patients (56.7%) comparable to the study conducted by Usoro et al[1].

Results of the present study took into account the early complications of surgery following the Lichtenstein technique. Yet no open procedure is exempt from the complications enlisted in the current study[3]. In the postoperative patients, 8 patients (6.6%) had developed seroma and 2 patient (3.3%) had haematoma formed. This was comparable to a study by Desarda et al[11]. These complications require drainage which is another procedure requiring follow up and anticipation of other complications such as infection.[12] During the first 6 weeks following surgery 2 patients (3.3%) presented with wound infection. Septic complications of the prosthesis have been reported by various studies to occur in 0.2–0.8%of patients[13].

Considering the length of stay that was 4.2 days in the present study and the evolving trends to the application of these procedures as day-cases, there are reasons to perform the procedure in routine under local anaesthesia. This duration includes the preoperative phase of preparation till discharge and is deemed inevitable considering this series of surgery being conducted under general anaesthesia. Other limitations include its non-availability in every part of the world, it increases the cost of the operation and because the groin is a mobile area there is a tendency for the mesh to fold, wrinkle or curl[21].

CONCLUSIONS

Results of Lichtenstein technique are encouraging with regards to safety and effectiveness in short term outcome. Success of mesh hernioplasty relies on careful patient selection, skillful operative technique, meticulis haemostasis and adequate postoperative management.

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