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Original Research Article

Retrospective analysis of Lichtenstein inguinal hernia repair technique at tertiary care center

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Abstract: The objective of the study is to retrospectively analyze the most common surgical procedure in our system for inguinal hernia the Lichtenstein mesh repair technique at tertiary care center. This retrospective observational study was conducted at, surgical unit, Civil Hospital, Karachi, from January 2015 to December 2016. A total of 77 patients were included in the study following operation by Lichtenstein mesh repair technique for inguinal hernia. Followed for another 12 months for procedural complications. Whereas the patients with inguinal hernia repair with other techniques, emergency hernia repair, and hernia associated with other inguino-scrotal pathology were excluded from the study. During one year period 77 (100%) male Patients operated by Lichtenstein technique were included in the study. Mean age ± standard deviation (S.D.) was 46.04±16.54 years. Common clinical presentation was groin swelling 58(75.3%) with common clinical diagnosis was right sided inguinal hernia recorded in 45(58.4%) patients. Common operative diagnosis showed 34(44.2%) of patients had indirect inguinal hernia. Smoking was the major risk factor recorded 20(26%) patients. There were no postoperative mortality and recurrence; however, more than fifty percent of patients lost follow up at the end of 01 year. Few early complications like wound infection 3(3.9%), urinary retention 2(2.6%), seroma/haematoma 2(2.6%) formation were recorded. Chronic postoperative inguinal pain with decreasing pattern was present in 1(1.3%) patient at the end of 12 months. Lichtenstein inguinal hernia repair is much superior to other types of repairs in terms of postoperative complications and recurrence.
Keywords: Hernia, Inguinal, Lichtenstein.

INTRODUCTION

One of the most common anatomical derangement in men & women is hernia, derived from the Greek word hernios, means a bud/shoot [1]. Groin hernia account for around 75% of all abdominal wall hernia with the lifetime risk of inguinal hernia in men is 20%. [2,3] Annually more than 20 million patients undergo groin hernia repair worldwide making it the most frequently employed surgical technique in general surgery [2,4] With advent of aseptic technique and anesthesia in 1800s, many surgeons described various procedures for hernia repair starting, from Edoardo Bassini, Marcy, Shouldice and Haisted. In 1900s, various techniques using mesh reinforcement were introduced for hernia repair. In 1987, Dr Irving Lichtenstein, reported a recurrence rate of 0.7% following Use of polypropylene mesh. He called it "tensionless" repair and time proved this procedure as the pillar for inguinal hernia repair surgery [1]. Now the Lichtenstein mesh technique is recommended as first choice for open inguinal hernia repair [1, 3].

The objective of the study was the retrospective analysis of Lichtenstein hernia repair technique in our patients, for its outcome, short & long term complications.

MATERIAL & METHODS

This observational study of 77 patients was conducted retrospectively at surgical unit, Civil Hospital, Karachi from January 2015 to December 2015, and patients were followed for 12 months (January 2016 to December 2016) for postoperative complications. All patients with primary/recurrent inguinal hernia operated on elective list with Lichtenstein hernia repair technique under spinal anaesthesia were included in the study. Patients in which hernia repair were performed using other surgical techniques like Darns, Bassini were excluded from the study. Patients with emergency hernia surgery, hernia associated with other pathologies like varicocele and those who had hernia surgery following general anesthesia were also excluded from the study. Retrospective data were recorded using a proforma from patient's admission files (looking for chief complaint, risk factors, clinical diagnosis, immediate and early postoperative complications), operative record (including spinal anaesthesia, operative diagnosis of

type of hernia, Lichtenstein repair with prlypropylene mesh), follow up register record for the last 12 months for complications like wound infection, urinary retention, scrotal edema, seroma/haematoma, spinal anesthesia complications along with chronic postoperative pain and recurrence.

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 16. Descriptive statistics frequency, percentage, mean etc. were calculated.

RESULTS

During one year period 77 (100%) male patients (no female patient operated during the period) were operated by Lichtenstein technique for inguinal hernia, out of them 72(93.5%) patients was operated for primary episode. Mean age ± standard deviation (S.D.) was 46.04±16.54 years; with commonest age group was 31-40 years. Common clinical presentation was groin swelling 58(75.3%) followed by painful groin swelling 19(24.7%). On examination, right sided inguinal hernia was recorded in 45(58.4%) patients. Whereas, operative diagnosis showed 34(44.2%) of patients had indirect, 31(40.3%) had direct and 12(15.6%) had pantaloon hernia. Majority of patients 65(84.4%) were operated by residents. (Table: 1) Smoking was recorded as major risk factor 20(26%) patients. (Table:2) There were no postoperative mortality and recurrence at one year follow up period. However, wound infection was present in 3 (3.9%) patients, followed by urinary retention, scrotal edema, seroma/haematoma and spinal anesthesia complications. Approximately two third, 54(70.1%) of the patients lost to follow during one year period. (Table: 3)

Table-1:

Serial number	**Variables** (Total number of patients-77)	**Number of patients (Percentage)**
1	**Gender**	
	Male	77(100%)
	Female	00
2	**Clinical presentation**	
	Groin swelling	58(75.3%)
	Painful groin swelling	19(24.7%)
3	**Episode**	
	Primary	72(93.5%)
	Recurrent	5(6.5%)
4	**Clinical diagnosis**	
	Right	45(58.4%)
	Left	25(32.5%)
	Bilateral	2(2.6%)
	Right recurrent	3(3.9%)
	Left recurrent	2(2.6%)
5	**Operative diagnosis**	
	Indirect	34(44.2%)
	Direct	31(40.3%)
	Pantaloon	12(15.6%)
6	**Level of surgeon**	
	Fellow surgeon	12(15.6%)
	Resident surgeon	65(84.4%)

Table: 2

Serial number	**Risk factors**	**Number of patients (Percentage)**
1	Nil	37(48.1%)
2	Smoker	20(26%)
3	Benign Prostatic Hypertrophic (BPH)	12(15.6%)
4	Constipation	11(14.3%)
5	Previous inguinal hernia operation of contraletral site	4(5.2%)
6	Heavy weight lifting	2(2.6%)

Table: 3

Serial number	**Early postoperative period complications –** Number of patients(percentage)	**Chronic postoperative inguinal pain**-Number of patients(percentage)	**Long term follow up-** Number of patients(percentage)
1	No complication-64(83.1%)	Chronic postoperative inguinal pain at 3 months-7(9.1%)	Chronic postoperative inguinal pain-1(1.3%)
2	Wound infection-3(3.9%)	Chronic postoperative inguinal pain at 6 months-3(3.9%)	No long term complication-22(28.6%)
3	Urinary retention-2(2.6%)	Chronic postoperative inguinal pain at 9 months-1(1.3%)	Lost to follow-54(70.1%)
4	Scrotal edema-2(2.6%)	Chronic postoperative inguinal pain at 12 months-1(1.3%)	-
5	Seroma /Haematoma-2(2.6%)	-	-
6	Headach/Nasea/Vomiting-1(1.3%)	-	-

DISCUSSION

It is totally male dominated study which retrospectively analyzed 77 patients operated by Lichtenstein technique, during a period of one year and then followed for another one year for procedural complications. Male dominance was equally comparable with studies conducted by Huerta S and Muhammad Paryal Tagar [5, 6] Age is an important factor for inguinal hernia both for incidence and type; as its incidence increases with age, whereas, indirect hernia is more common in young and direct hernia in the elderly. [7,8] Which is true for our study as all indirect inguinal hernia were recorded in young age group, however, direct one were in old patients. In our study only 4(5.2%) patients, had previous operation for contralateral site which were within maximum of five years. This percentage is less with the study conducted by Huerta S noted that there was 12% chance of contralateral hernia repair within 7.6 years [5]. Smoking was commonest risk factor noted in our study, which was included as low- evidence level by world guideline for groin hernia management along with chronic constipation [9]. In a large number of patients no early post operative complication were noted but it was still slightly higher to the study carried by DH de Lange. (10) Chronic postoperative inguinal pain at 3, 6, 9 and at 12 months were 7(9.1%), (3.9%),1(1.3%),1(1.3%) of patients. Which was quite lower one in contrast to Alfieri S as he observed chronic postoperative inguinal pain in 0.5–6% of patients [11]. This decreasing pattern of pain was also seen in a study conducted by DH de Lange. (10) A study comparing Lichtenstein repair with darning repair showed less postoperative pain and early return to daily activity ($p<0.05$), as well as same frequency of postoperative complications and no recurrence in both groups [12]. A study comparing Lichtenstein with Desarda noted initial good results following Desarda technique but requires a large scaled study with long follow-up to judge the appropriateness of this procedure over Lichtenstein technique [13]. Comparing Lichtenstein with modified Bassini's technique ($p<0.001$, recurrence occurred in 2% with Lichtenstein mesh repair and 7.1% with Bassini's repair within 3 years) [14]. Now advent of laparoscopic surgery has the capability of managing both primary and recurrent inguinal hernia but at higher cost and expertise [15, 16] our study also showed that Lichtenstein technique had got a short learning curve (many procedures carried out by residents) as well as is economical. This is somewhat similar to the study conducted by DH de Lange as a large number of procedures were carried out by resident along with surgeon/resident alone [10].

CONCLUSION

The study reveals that the Lichtenstein repair technique with its short learning curve and low recurrence rate is an excellent surgical procedure for inguinal hernia repair. With the development of different techniques for groin hernia repair, the nation should adopt some international guidelines like European Hernia Society (EHS) or develop its own national guidelines.

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