



COMPARATIVE STUDY ON THE POST-OPERATIVE PAIN AND OUTCOMES OF MESH FIXATION WITH NON-ABSORBABLE SUTURES VERSUS ABSORBABLE SUTURES IN LICHTENSTEIN INGUINAL HERNIA REPAIR

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ABSTRACT

Objective: To evaluate the outcomes of the mesh fixation with non-absorbable sutures versus absorbable sutures in Lichtenstein inguinal hernia repair at a tertiary care setting.

Background: An inguinal hernia is an abnormal protrusion of all or part of a tissue into an abnormal orifice in its surrounding cavity. It is a common problem among surgical outpatients. Repairing this hernia is one of the most common surgical operations performed worldwide. Most surgeons now prefer to do tension-free mesh repairs. The Lichtenstein tension-free hernioplasty is now the world's most popular surgical procedure.

Study design: A randomized control trial

Place and Duration: This study was conducted in Ziauddin Hospital Keamari from November 2022 to November 2023

Methodology:

Using total population sampling technique, all the patients aged above eighteen year undergoing Lichtenstein tension free inguinal hernioplasty were made part of the study. After seeking the formal consent we divided the patients into two groups, Patients were divided in 2 groups each of

65 patients. In group-I we performed mesh fixation with non-absorbable suture material (proline 1-0) and we used delayed absorbable suture material (vicryl 2-0) in group-II. We used SPSS version 26.0 for data entry and analysis.

Results: In this study, the most of the patients (52.31%) were aged between 41 to 60 years, followed by 44 (33.85%) patients aged between 18-40 years. Postoperatively, the pain was observed in higher frequency in group-I, 22 (33.85%), 16 (24.62%) and 7 (10.77%) patients reported postoperative pain on 7th day, one month and 3 months respectively. However, in group-II, only 18 (27.69%), 8 (12.31%) and 3 (4.62%) patients reported to experience pain at on 7th day, one month and 3 months respectively.

Conclusion: Absorbable sutures are safe and successful option. While comparing with the traditional fixation methods, there is comparatively increased complaint of post-operative pain paresthesia. Although the difference in both groups has not been marked significant statistically.

Keywords: Hernia repair, Open inguinal hernia, Delayed-absorbable suture, Mesh fixation

INTRODUCTION

An inguinal hernia is an abnormal protrusion of all or part of a tissue into an abnormal orifice in its surrounding cavity. It is a common problem among surgical outpatients [1] Inguinal hernia is more frequent in elderly men. Two-thirds of patients have indirect hernia, one-third have direct hernia, and ten percent have bilateral inguinal hernia [2, 3]. Repairing this hernia is one of the most common surgical operations performed worldwide. By now, majority of experts prefer to do tension-free mesh repairs [4]. The Lichtenstein tension-free hernioplasty is now the world's most popular surgical procedure [5]

Mesh fixation methods have evolved as operating technology have advanced, such as laparoscopic hernia repair. There are several types of stitching stuff for hernia repair [6]. Many surgeons continue to utilize them for open and laparoscopic repairs today. The fresh surgeons believe that mesh fixation should be done with non-absorbable suture material however, lately, it is being done with delayed absorbable materials which results in better outcomes in terms of pain and complications [7]. Chronic inguinal area pain and discomfort are common complaints following open inguinal hernia surgery due to nerve compression caused by mesh fixation sutures.

The present study is aimed to evaluate the outcomes of the mesh fixation with non-absorbable sutures versus absorbable sutures in Lichtenstein inguinal hernia repair at a tertiary care setting.

METHODOLOGY

Using total population sampling technique, all the patients aged above eighteen year undergoing Lichtenstein tension free inguinal hernioplasty were made part of the study. After seeking the formal consent we divided the patients into two groups, each of 65 patients. In group 1 we performed mesh fixation with non-absorbable suture material (proline 1-0) and we used delayed absorbable suture material (vicryl 2-0) in group 2. Patients presenting with primary hernia repair, elective surgery performed, and uni/bilateral hernia were made part of the study. However, patients younger than 18 years, patents requiring emergency repair and obstructed inguinal hernia were excluded from the study.

We used SPSS version 26.0 for data entry and analysis. We used frequency and percentage for the categorical variables and mean and standard deviation to report the continuous variables. P value less than 5% was considered as significant.

RESULTS

In the present study, the most of the patients (52.31%) were aged between 41 to 60 years, followed by 44 (33.85%) patients aged between 18-40 years. Only 18 (13.85%) were aged above 60 years. It

was observed that in this study indirect hernia was most common 67(51.54%), followed by direct hernia and combined hernia 41 (31.54%) and 22 (16.92%) respectively. (As shown in Table I)

Age (years)	n	%
18-40	44	33.85
41-60	68	52.31
Above 60	18	13.85
Type of Hernia		
Indirect hernia	67	51.54
Direct Hernia	41	31.54
Combined	22	16.92

Postoperatively, the pain was observed in in higher frequency in group-I (absorbable suture material), 22 (33.85%), 16 (24.62%) and 7 (10.77%) patients reported postoperative pain on 7th day, one month and 3 months respectively. However, in group-II (delayed absorbable suture material), only 18 (27.69%), 8 (12.31%) and 3 (4.62%) patients reported to experience pain at on 7th day, one month and 3 months respectively. (As shown in Table II)

Table II Post-operative Pain, paresthesia and Complication in study participants

Postoperative Pain					
	Group-I		Group-II		p-value
Duration	n	%	n	%	
7 days	22	33.85	18	27.69	0.07
1 Month	16	24.62	8	12.31	
3 Months	7	10.77	3	4.62	
Post-operative paresthesia					
Duration					0.04
7 days	17	26.15	14	21.54	
1 Month	11	16.92	6	9.23	
3 Months	5	7.69	3	4.62	
Post-operative Complication					
Wound infection	0	0	0	0	0.12
Scrotal hematoma	8	12.31	6	9.23	
Seroma	6	9.23	3	4.62	
Ecchymosis	3	4.62	1	1.54	

DISCUSSION

Chronic postoperative pain following inguinal hernia repair is an unwanted and feared complication, which leads to functional limitations and diminution in the life quality of patients [7, 8, 9]. Various research imply that the incidence of pain ranges from 0% to more than 30%. [10]. In the present study, the most of the patients (52.31%) were aged between 41 to 60 years, followed by 44 (33.85%) patients aged between 18-40 years. Only 18 (13.85%) were aged above 60 years. It was observed that in this study indirect hernia was most common 67 (51.54%), followed by direct hernia and combined hernia 41 (31.54%) and 22 (16.92%) respectively.

Postoperatively, the pain was observed in in higher frequency in group-I (absorbable suture material), 22 (33.85%), 16 (24.62%) and 7 (10.77%) patients reported postoperative pain on 7th day, one month and 3 months respectively. However, in group-II (delayed absorbable suture material), only 18 (27.69%), 8 (12.31%) and 3 (4.62%) patients reported to experience pain at on 7th day, one month and 3 months respectively. In the present study we observed that the postoperative pain was lesser in group-II compared to the group-I. Bharatam KK also reported findings in line with our

results [11]. Nearly similar observations were recorded in a RCT conducted by Kim-Fucs et al in his study that there was no any significant difference in surgical outcomes among two groups. Non-absorbable suture materials (prolen and nylon) have an infinite lifespan and hence harbor infectious germs at the surgical site, leading to persistent sepsis. For this reason, we employ prophylactic antibiotics as a routine in all patients to decrease infection at a site with foreign body implantation (mesh and sutures), despite the fact that other studies found that antibiotics are unnecessary and only recommended in high-risk patients [15-16].

CONCLUSION

We conclude that delayed absorbable sutures are safe and successful option. While comparing with the traditional fixation methods, there is comparatively increased complaint of post-operative pain paresthesia. Although the difference in both groups has not been marked significant statistically.

CONFLICT OF INTEREST

The authors declared no any conflict of interest

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