

ORIGINAL ARTICLE

Hernial SAC Ligation in Hernioplasty of Indirect Hernia - A Needless Step

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ABSTRACT

Objectives. To evaluate the effect of high sac ligation in Lichtenstein Indirect inguinal hernia repair on post operative pain.

Methodology: This study consisting of 100 patients of clinically diagnosed right or left indirect inguinal hernia with age ranging from 16-80 yrs, was conducted in the department of surgical unit II, Jinnah Hospital, Lahore. Patients were divided randomly in two equal groups. Group A included patients undergoing high sac ligation while group B included patients of sac reduction. The main outcome measure was mean postoperative pain score using visual analog scale on 1st, 7th and 10th post operative days.

Results: 78% of the patients were between 20 to 50 yrs of age with male to female ratio 99:1. 60% of the patients had presented with right inguinal hernia and 40% with left inguinal hernia. Postoperatively mean pain scores in patients who underwent sac reduction were 3.30 ± 0.70 on 1st post op day, 2.22 ± 0.58 on 7th and 0.32 ± 0.47 on 10th post op day, while mean pain scores in patients who underwent high sac ligation were 4.34 ± 0.82 on 1st post op day, 3.34 ± 0.64 on 7th and 2.40 ± 0.53 on 10th post op day.

Conclusion: Ligation of the hernial sac in inguinal hernia surgery is not only unnecessary and time consuming but also leads to increased post-operative pain.

Key Words. High sac ligation, sac reduction, hernioplasty.

INTRODUCTION

Inguinal hernias are the most common - comprising approximately 75 % of all anterior abdominal wall hernias.¹ Many exist in the community undiagnosed, undetected, and unreported. Thus inguinal hernia is a major economic problem. Despite the frequency of surgical repair, "perfect results" still continue to elude surgeons.²

Surgical treatment of the inguinal hernias has undergone tremendous transformation in the past few decades.³ The Lichtenstein tension free hernioplasty began in 1984 and evolved over a period of time to a procedure that is now considered the gold standard of hernia repair.⁴ In this technique a wall reinforcing the fascia transversalis is created by using a prosthetic mesh. This technique, that does not need a long learning curve, offers surgeons and their patients a short operation time on an outpatient basis, minimal complications rate, early return to work and virtually low recurrence rate even in non-expert hands.⁵ Pain after inguinal hernia surgery is a common complaint in surgical wards. There are many reasons for post operative pain. This study compares post-operative pain among patients undergoing high sac ligation versus sac reduction in elective Lichtenstein inguinal hernia repair.

METHODOLOGY

This study consisting of 100 patients of clinically diagnosed right or left indirect inguinal hernia with age ranging from 16-80 yrs, was conducted in the department of surgical unit II, Jinnah Hospital, Lahore from 1st Feb 2012 to 30th July 2012. Patients were divided randomly in two equal groups. Group A included patients undergoing high sac ligation while group B included sac reduction patients. The main outcome measure was mean postoperative pain score using visual analog scale on 1st, 7th and 10th post operative days.

Sample size of 100 cases (50 in each group) was calculated with 95% confidence level, 80% power of test and taking expected mean \pm S.D of mean pain score in both groups i.e. 1.6 ± 1.2 in high sac ligation group vs. 0.0 ± 0.0 in sac reduction group in patients undergoing Lichtenstein repair of inguinal hernia.

Patients with simultaneous presence of direct and indirect hernia in the same groin, simultaneous repair of bilateral indirect inguinal hernia, recurrent hernia, clinically irreducible hernia, clinically strangulated hernia and diabetics were excluded from the study. An informed consent was obtained from them after discussion of risk versus benefit ratio. Patients were not aware of the randomization arm and were selected via lottery method.

All patients were operated under local anesthesia (superficial groin block using 2% lignocaine and bupivacaine with adrenaline hydrochloride) with IV sedation. All operation were performed by the second year surgical resident under a consultant's supervision.

In Group A, after confirming intraoperative diagnosis of indirect inguinal hernia, hernial sac opened, its contents returned to the peritoneal cavity, ligation performed using an absorbable suture and the excessive sac excised.

In group B, after confirming intraoperative diagnosis of indirect inguinal hernia, hernial sac along with the prolapsing viscera was reduced to the peritoneal cavity without opening the sac.

Later on in both groups Lichtenstein tension-free mesh repair was performed. Care was taken to avoid ilioinguinal nerve entrapment and also avoiding fixing the mesh on the pubic tubercle. In cases of uneventful recovery all patients were discharged after 24 hrs.

All patients were given standard dose (0.3 mg/kg nalbuphine) of postoperative analgesia in bolus form 8 hourly. All Patients were followed up at the day of discharge (24 hrs after operation) and as an outpatient at 1st week (7th day) and 10th day after the operation.

Information collected from the proforma was entered into SPSS version 11.0 for analysis. Quantitative variables like age and pain was presented in the form of mean \pm S.D. Qualitative variables like gender was presented in the form of frequency & percentage. T-test was used to compare the mean pain score in both groups. P value \leq 0.05 was considered as significant.

RESULTS

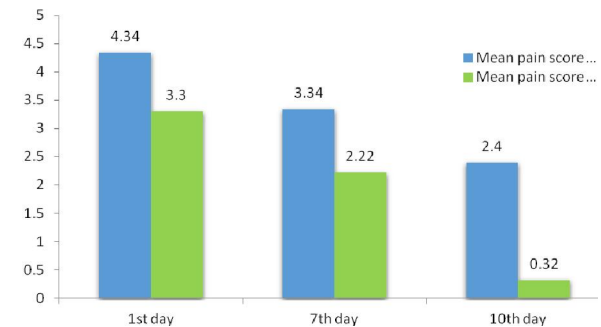
Patients of age ranging from 20 to 70 years with the mean age of 40 + 12.07 years were included in the present study. Out of these 99(99%) were male and 1(1%) was female in the ratio of 99:1. Sixty

patients out of total study population (60%) presented with right inguinal hernia while 40 (40 %) presented with left inguinal hernia.

Pain score was measured using Visual Analog scale on 1st, 7th and 10th postoperative days. Mean pain scores in patients underwent sac reduction were 3.30 \pm 0.70 on 1st post op day, 2.22 \pm 0.58 on 7th and 0.32 \pm 0.47 on 10th post op day, while mean pain score in patients underwent high sac ligation was 4.34 \pm 0.82 on 1st post op day, 3.34 \pm 0.64 on 7th and 2.40 \pm 0.53 on 10th post op day..

Graph. Bar chart of mean pain score on 1st, 7th & 10th day

Table 1: Daywise frequencies & percentages for mild, moderate & severe pain in group A patients



Group A

	Frequency and percentages						
	No pain	Mild pain	Moderate pain	Severe pain			
1 st day	0	7	14%	43	86%	0	
7 th day	0	23	46%	27	54%	0	
10 th day	0	50	100%	0	0	0	

Table 2: Daywise frequencies & percentages for mild, moderate & severe pain in group B patients

Group B

	Frequency and percentages						
	No pain		Mild pain		Moderate pain		Severe pain
1 st day	0	0	30	60%	20	40%	0
7 th day	0	0	50	100%	0	0	0
10 th day	34	68%	16	32%	0	0	0

Table 3: Table showing different bio statistical variables

Characteristics	Age	Post Operative Pain Score 1 st day	Post Operative Pain Score 7 th day	Post Operative Pain Score 10 th day
Valid	100	100	100	100
Mean	40.09	3.82	2.84	1.36
Median	40	4	3	1
Minimum Value	20	2	1	0
Maximum Value	70	6	4	3
Standard Deviation	12.076	0.925	0.873	1.159

DISCUSSION

Inguinal herniae are the most common – comprising approximately 75 % of all anterior abdominal wall herniae.¹ Surgical treatment of the inguinal herniae has undergone tremendous transformation in the past few decades. The Lichtenstein tension-free is now considered the gold standard of hernia repair.³ It has gained wide spread acceptance due to its superior outcome.

Regardless of the painless tension-free technique, mild or moderate pain still exists and mesh itself may not be the only cause for this.⁶ Due to the mechanical pressure and ischemic changes, ligation of the highly innervated peritoneal sac is a major cause of post-operative pain. It is speculated that non ligation does not increase the risk of recurrence and causes less postoperative pain.⁷

Conventionally, Surgeons have long labored under the burden of the 'hernia sac' in inguinal hernia. Thus the sac got pride of place in hernia surgery at the expense of the 'defect'. It is a long held belief that ligation of the sac is an important adjunct to inguinal hernia operations.⁸

Rutkow et al recommends that hernia sac should not be opened for visual inspection because peritoneum is a highly sensitive structure, ligating the sac does nothing more than producing a miniature 'peritonitis'. This iatrogenic peritonitis is one of the factors contributing to the postoperative discomfort and pain that accompany suture hernia repairs.⁹

High dissection and not high ligation is the critical factor. High ligation does not influence recurrence rate and may be a cause of increased post-operative pain.¹⁰

The benefits of non-ligation of the sac has been investigated by Vincet et al. They found that non ligation does not increase the risk of recurrence and causes less post-operative pain.⁸

However, high dissection of the sac well up into the retroperitoneum and freeing the sac from the edges of the internal ring are important for prevention of recurrence.⁸

Encouraged by the studies of Abrahamson J¹⁰ and Vincet et al⁸ the present study was designed. The aim of the present study was to see the effects of sac reduction without ligation in indirect inguinal hernia repairs. The focus was on post-operative pain. This study demonstrated less post-operative pain and hence decreased morbidity in patients undergoing sac reduction without ligation.

CONCLUSION

We conclude that ligation of the hernia sac in inguinal hernia surgery is not only unnecessary and time consuming but also leads to increased post operative pain. Hence sac reduction is advocated in all patients of indirect inguinal hernia repairs which not only decreases post operative pain but also improves overall post-operative morbidity.

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