



Research Article

A COMPARATIVE STUDY BETWEEN ABSORBABLE (VICRYL) AND NON ABSORBABLE (PROLINE) SUTURES FOR MESH FIXATION IN LICHTENSTEIN'S HERNIA REPAIR (FOR POSTOPERATIVE COMPLICATIONS AND RECURRENCE)

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ABSTRACT

Introduction: Inguinal hernia is a protrusion of abdominal cavity with two third have indirect and one third have direct hernia. Lichtenstein's tension free mesh hernia repair is the most widely used technique.

Aim & Objective: Find the importance of suture material used to fix the mesh in Lichtenstein's Mesh repair with the aim of assessing and comparing the post operative outcomes on post op day 7 , 3months and 6months. Also to assess recurrence of hernia within 6 months.

Methodology: The present study is an interventional , comparative , observational study conducted among admitted patients in the department of General surgery at National Institute Of Medical Sciences & Research ,Jaipur over the time period of One And Half Year (January 2018 to 2019) with the sample size of 140 patients divided in two groups each of 70 patients. In group 1 (ASM) mesh fixation done with absorbable suture material (Vicryl) while in group 2 (NASM) non absorbable suture material (prolene) was used. Included all male patients aged 18 years to 75 years with direct inguinal hernia . The patients with associated comorbidities, emergency repair and complicated hernia were excluded.

Results &Discussion: The age group of 18 to 30 years had higher incidence of direct inguinal hernia comprising of 65 % of the total patients. In group 1(ASM) on postoperative day 7, pain was seen in 4 patients, seroma formation in 1 while wound infection in 2 and foreign body sensation in 5 patients were seen. On postoperative duration at 3 months and 6 months pain was the most common complaint seen in 5 and 4 patients respectively. In group2 (NASM) on postoperative day 7, pain was seen in 12 patients, seroma formation in 2 while wound infection in 3 and foreign body sensation in 7 patients were seen. On postoperative duration at 3 months and 6 months pain was the most common complaint seen in 13 and 16 patients respectively. Also 12 patients have foreign body sensation while 10 patients had wound infection and 9 had seroma formation on postoperative 3 months. Even 6 months postoperatively 8 patients felt uneasiness secondary to foreign body sensation. The recurrence was seen in 1 patient in each group at 6 months postoperatively.

Conclusion: Mesh fixation using absorbable sutures in Lichtenstein's hernioplasty is associated with lesser postoperative complications.

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INTRODUCTION

Inguinal hernia is a protrusion of abdominal cavity content through the inguinal canal and are of two types- direct (through weakness in anterior abdominal wall) and indirect hernia (through inguinal canal).⁵Inguinal hernia comprises 75 % of the hernia patients mainly common in elderly.^{5,2}

Out of the total patients, two third have indirect and one third have direct hernia while 10% of the patients have bilateral inguinal hernia.²The importance of hernia repair is more in direct inguinal hernia with the treatment of choice being surgical repair.²In the present era, Lichtenstein's tension free mesh hernia repair is the most widely used technique. The advantages associated with this technique are rapid postoperative recovery and early return to normal activity.² In

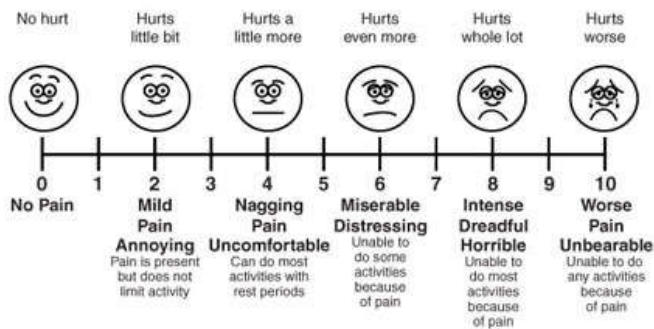
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this technique a piece of polypropylene mesh is fixed above the hernial defect.

For the hernial fixation, various suture materials are available comprising of both absorbable (Vicryl) and non absorbable (Proline) types: Vicryl (polyglactine) is a synthetic, braided, absorbable suture with tensile strength of approximately 3 to 4 weeks and absorption is within 60 days by hydrolysis.^{9,12} Proline is (Polypropylene) a non absorbable monofilament suture with 90 % it's tensile strength after 6 months.^{9,12}

The complications such as postoperative groin pain, postoperative seroma formation , wound infection and foreign body sensation are associated with tension free mesh hernia repair.⁷ The postoperative groin pain occurring in 3 -11% patients is the leading cause for the morbidity seen in 16 to 62 % patients operated for Direct inguinal hernia. The various causes of postoperative groin pain includes nerve entrapment and nerve damage or tissue injury during surgery, ilio-inguinal nerve irritation by sutures and mesh, inflammation due to mesh , and simple tissue scarring.^{7,10}

The International Association for The Study Of Pain Defined the chronic Pain as any Visual Analogue Scale Score above zero lasting for more than 3 months.¹⁴



The present study is carried out with the objective to find out the importance of suture material used to fix the mesh in Lichtenstein's Mesh repair with the aim of assessing and comparing the post operative outcomes on post op day 7, 3months and 6months. Also, assesses recurrence of hernia within 6 months.

METHODOLOGY

The present study is an interventional , comparative , observational study conducted among admitted patients in the department of General surgery at National Institute Of Medical Sciences & Research, Jaipur over the time period of One And Half Year(January 2018 to 2019) with the sample size of 140 patients.

After the Ethical committee approved, consent from the patients was taken.

The inclusion criteria included all male patients aged 18 years to 75 years with direct inguinal hernia. The patients with associated comorbidities, emergency repair and complicated hernia were excluded.

The total 140 patients were divided in two groups each of 70 patients. In group 1(ASM)mesh fixation was done with

absorbable suture material (Vicryl)while in group 2 (NASM) non absorbable suture material (prolene) was used .All patients were analysedfor postoperative complications along with the hernial recurrence and results were tabulated . The statistical analysis was done using the SPSS software and p value <0.05was considered significant.

OBSERVATIONS AND DISCUSSION

Table 1 Age wise distribution of patient in the study groups

Age(years)	Number of patients		
	ASM	NASM	Total
18-30	47	44	91
31-40	2	03	05
41-50	6	06	12
51-60	6	04	10
61-above	9	13	22
Total	70	70	140

Table 2 Distribution of the Number of the patients according to postoperative complications

Sr. No.	Postoperative Complications	ASM (n:70)			NASM (n:70)		
		Number Of patients					
		Day 7	3 months	6 months	Day 7	3 months	6 months
1.	Postoperative pain	4	5	4	12	13	16
2.	Seroma formation	1	4	0	2	9	0
3.	Wound infection	2	2	1	3	10	1
4.	Foreign body sensation	5	2	2	7	12	8
5.	Recurrence of hernia	-	-	1	-	-	1

In this study the results obtained as seen in tabulation compares the outcome of mesh fixation using absorbable versus non absorbable suture material in Lichtenstein's hernioplasty. The age group of 18 to 30 years were found with higher incidence of direct inguinal hernia comprising of 65 % of the total patients.

The two groups in the study with 70 patients each were followed up on postoperative day 7 , 3months and 6months.In group 1(ASM)on postoperative day 7, pain was seen in 4 patients, seroma formation in 1 while wound infection in 2 and foreign body sensation in 5 patients were seen.On postoperative duration at 3 months and 6 months pain was the most common complaint seen in 5 and 4 patients respectively.

In group2 (NASM)on postoperative day 7, pain was seen in 12 patients, seroma formation in 2 while wound infection in 3 and foreign body sensation in 7 patients were seen.On postoperative duration at 3 months and 6 months pain was the most common complaint seen in 13 and 16 patients respectively. Also 12 patients have foreign body sensation while 10 patients had wound infection and 9 had seroma formation on postoperative 3 months.

Even 6 months postoperatively 8 patients felt uneasiness secondary to foreign body sensation.

The study by Bharatan K.K. and Shanoo Agarwal , also had the findings in similarity with the current study.Postoperative chronic pain was the most common complaint with the incidence ranging from 0% to > 30% as seen in various studies across the world.

The non absorbable sutures has been associated with significant inflammatory and infiltrating process depicted in the form of seroma formation, foreign body sensation and as an underlying cause for wound infection.

Although the hernioplasty was successful in majority patients, the recurrence was seen in 1 patient in each group at 6 months postoperatively. The recurrence in these patients could possibly be due to multifactorial reasons.

CONCLUSION

In the present study, Mesh fixation using absorbable sutures in Lichtenstein's hernioplasty is associated with lesser pain, less seroma formation, less wound infection, and less foreign body sensation as compared to Non absorbable sutures on 6 months on follow up.

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