



## VICRYL VS PROLENE SUTURE IN INGUINAL MESH HERNIOPLASTY – A CASE SERIES

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Vicryl, Prolene, Hernia Repair, Mesh

### ABSTRACT

**Introduction:** Inguinal hernia is a protrusion of abdominal cavity which is the most frequently occurring type of hernia globally with two third have indirect and one third have direct hernia. Lichtenstein's tension free mesh repair is the mainly used approach.

**Aim & Objective:** To identify 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, 3 months and 6 months. Also to assess recurrence of hernia within 6 months.

**Methodology:** The present study is an comparative, observational study conducted among admitted patients in the department of General surgery with the sample size of 80 patients divided in two groups each of 40 patients. In group 1 mesh fixation done with Vicryl while in group 2 prolene was used. Included all male patients aged 18 years to 70 years with direct or indirect inguinal hernia. The patients with comorbidities, presents in emergency and complicated hernia cases were excluded.

**Results & Discussion:** Mesh fixation using absorbable (vicryl) sutures in Lichtenstein's mesh hernioplasty is related with lesser postoperative complications.

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### INTRODUCTION

Inguinal hernia, the most frequently occurring type of hernia globally, with an approximate of 75% of all hernias of abdominal wall.<sup>1-3</sup> Inguinal hernia repair accounts for 10 to 15% of all surgeries, the 2<sup>nd</sup> most frequently done surgical procedure.<sup>2,4,5</sup>

In the present era, most widely used technique is Lichtenstein's tension free mesh hernia repair. The advantages associated with this technique are rapid postoperative recovery and early return to normal activity.

It has been evaluated that worldwide around 20 million inguinal hernia repairs are done each year.<sup>5</sup> Hernias can be defined as a "protrusion of a viscus or part of the viscus through an abnormal opening in the walls of its containing cavity."<sup>6</sup> Inguinal hernias can be congenital or acquired, and the latter is common. For the hernial fixation, various suture materials are available comprising of both absorbable (Vicryl) and non absorbable (Prolene) 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.<sup>9,12</sup> Prolene is (Polypropylene) a non absorbable monofilament suture with 90 % it's tensile strength after 6 months.<sup>9,12</sup>

The complications such as postoperative groin pain, postoperative seroma formation, wound infection and foreign body sensation are associated with tension free mesh hernia repair.<sup>7</sup> 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.<sup>7,10</sup>

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.<sup>14</sup>

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 hernia repair with the aim of differentiate the post operative outcomes on post op day 7, 3months and 6months. Also, assesses recurrence of hernia within 6 months.

### METHODS

#### Study design

We did a prospective study to compare vicryl sutures with prolene sutures to fix the mesh in patients undergoing Lichtenstein's repair over one year period

#### Study population

A total of 80 patients divided into two groups of 40 each were studied.

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**Inclusion criteria**

The inclusion criteria included all male patients aged 18 years to 70 years with direct/indirect inguinal hernia. The patients having comorbidities, presents in emergency and complicated hernia cases were excluded. The total 80 patients were divided in two groups each of patients. In group 1 mesh fixation was done with Vicryl while in group 2 with prolene was used. All patients were analysed for postoperative complications along with the hernial recurrence and results were tabulated.

**OBSERVATIONS AND DISCUSSION**

**Exclusion criteria**, patients with bleeding disorders, patients on anticoagulant treatment, pregnancy, patients needing emergency repair, HIV and HbsAg positive patients.

**Intervention**

We allocated the patients into 2 groups. The mesh fixation done with vicryl sutures were in group A and the patients where mesh fixation was done with prolene sutures were in group B.

The surgery was performed under spinal anesthesia. The skin and subcutaneous tissue (Camper’s and Scarpa’s fascia) was incised. The external oblique aponeurosis was opened. The cord was identified. The ilioinguinal nerve was identified. The direct inguinal hernial sac was reduced back without opening it. The indirect ones were divided, transfixed and excised. Then behind the cord, a polypropylene mesh was placed over the posterior wall. The mesh was fixed in an interrupted fashion to the conjoint tendon and inguinal ligament with the first stitch being taken 1 cm lateral to the pubic tubercle in order to prevent periostitis. Mesh was fixed using vicryl 2-0 for one set of patients (group A) and prolene 2- 0 for another set of patients (group B). The external oblique aponeurosis and subcutaneous tissues were approximated by continuous absorbable sutures. Skin closure was done by ethilon sutures.

**DISCUSSION**

**Group - A**

POD	Pain	Seroma	Infection	FB Sensation
7 <sup>th</sup> day	8	1	2	0
3 months	15	2	3	0
6 months	12	0	0	2

**GROUP - B**

POD	Pain	Seroma	Infection	FB sensation
7 <sup>th</sup> day	12	2	3	0
3 months	14	0	0	3
6 months	16	3	2	5

In this study the results obtained the outcome of mesh fixation using absorbable versus non absorbable suture material in Lichtenstein’s hernioplasty.

The two groups in the study with 40 patients each were followed up on postoperative day 7, 3months and 6months. In group 1 on postoperative day 7, pain was seen in 8 patients, seroma formation in 1 while wound infection in 4 and foreign body sensation in 0 patients were seen. On postoperative duration at 3 months and 6 months pain was the most common complaint seen in 15 and 12 patients respectively.

In group 2 on postoperative day 7, pain was seen in 12 patients, seroma formation in 2 while wound infection in 3 and foreign body sensation in 0 patients were seen. On

postoperative duration at 3 months and 6 months pain was the most common complaint seen in 14 and 16 patients respectively. Also 3 patients have foreign body sensation while 0 patients had wound infection and 0 had seroma formation on postoperative 3 months.

Even 6 months postoperatively 5 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.

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.

**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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