

# GROIN SEPSIS FOLLOWING LICHTENSTEIN INGUINAL HERNIOPLASTY WITHOUT ANTIBIOTICS PROPHYLAXIS: A REVIEW OF 100 CASES

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## ABSTRACT

**Objective:** To see the prevalence of groin sepsis following Lichtenstein inguinal hernioplasty without antibiotics prophylaxis

**Design:** A prospective observational study

**Place and Duration:** Department of Surgery Fauji Foundation Hospital Rawalpindi from Dec 2002 to July 2004.

**Patient and Methods:** A total of first consecutive 100 cases of inguinal hernia were included in the study. All patients were subjected to Lichtenstein repair without antibiotic prophylaxis. Prolene mesh was used in all cases.

**Results:** Three percent of patients developed postoperative wound infection, which was treated conservatively without any significant morbidity.

**Conclusion:** Lichtenstein's repair is an easy procedure with less complication rate even without antibiotic prophylaxis

**KEY WORDS:** Inguinal Hernia, Lichtenstein's Repair, Complications, Infection.

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## INTRODUCTION

The use of prosthetic material for inguinal hernia repair has increased dramatically ever since described by Giraud and colleagues using Nylon mesh in 1951.<sup>1</sup> Various meshes have since been developed consisting mainly of non absorbable materials such as polypropylene, polyester and polytetrafluoroethylene.

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The presence of plastic biomaterial increases the incidence of complications relating to the mesh itself, in addition to other recognized complications of the hernia repair. The most serious complication is the development of mesh infection leading to groin sepsis sometimes necessitating the removal of mesh implant. To prevent this mesh infection, antibiotic prophylaxis is often indicated and recommended.<sup>2</sup> Most surgeons have used prophylactic antibiotics for Lichtenstein hernia repair.<sup>3</sup> The true incidence of mesh infection is not exactly known because in some series infection rates of 1.9% to 7.5% has been reported.<sup>4,5</sup>

Use of prophylactic antibiotics in Lichtenstein hernia repair is still debatable. Some surgeons prefer not to use prophylactic antibiotics in order.

1. To prove the fact that if strict aseptic measures are opted use of antibiotics can be reduced.
2. To save the patient from hazards of antibiotics.

3. To reduce the emergence of resistant organisms
4. To reduce patient and hospital expenditures

We conducted this study to see the incidence of infection and other complications without antibiotic prophylaxis.

## PATIENTS AND METHODS

This study was conducted in the Department of Surgery, Fauji Foundation Hospital Rawalpindi from December 2002 to July 2004. First consecutive one hundred cases were included in the study. All patients with inguinal hernia reporting to surgical OPD were selected for Lichtenstein repair and included in the study. Children and adolescents less than 20 years of age, patients with obstructed / strangulated hernias, diabetes mellitus, recurrent hernia and patients on steroids were excluded. Obesity, huge hernias, scrotal hernias were also excluded.

All patients were admitted and evaluated carefully preoperatively. All necessary investigations were carried out. Operations were performed under strict aseptic conditions by registrars, senior registrar or consultants. Proline mesh was used in all cases. Majority of the patients were discharged on 3<sup>rd</sup> post operative day after wound inspection. Then they were reviewed in Surgical Out Patient on 7<sup>th</sup> post operative day for wound inspection and removal of stitches.

All the patients were followed up for one year as per guidelines given by The National Nosocomial Infection Surveillance system (NNISS).<sup>6</sup> Initially, they were reviewed as out patient on

Table-I: Age distribution and side distribution of Inguinal Hernia (n=100)

Age	Side			Total
	Right	Left	Bilateral	
21-30 years	3	1	-	4 (4%)
31-40 years	4	2	1	7 (7%)
41-50 years	22	16	10	48 (48%)
51-60 years	11	7	4	22 (22%)
> 60 years	7	3	9	19 (19%)
Total	47 (47%)	29 (29%)	24 (24%)	100

monthly basis for first three months and then every 3 months for the rest of the year. During their OPD visits, wounds were examined carefully for development of infection, recurrence or any other complications. Any patient showing signs of wound infection during follow up period was admitted, appropriately treated and all records were maintained.

## RESULTS

Majority of the patients (48%) in this study were in the fifth decade of their life. Among all patients 47% had right sided, 29% had left sided and 24% had bilateral inguinal hernia (Table-I).

The overall incidence of post operative complications was 11% (Table-II). Wound infection was noted in three (3%), scrotal edema/haematoma two (2%), wound redness one (1%), wound seroma one (1%), post operative residual pain one (1%), urinary retention two (2%). All complications were treated conservatively with no significant post operative morbidity or mortality. Post operative infection was treated conservatively with antibiotics, drainage of pus and repeated dressings. Mesh removal or exploration of wound was not required post operatively. The post operative complications were minimal and managed conservatively.

## DISCUSSION

Inguinal hernia is the commonest problem amongst all external hernias and Inguinal hernia repair is most frequent procedure in general surgery accounting for 10–15% of all operations.<sup>4,7</sup> The age incidence is distributed in all decades of life. Incidence of inguinal

Table-II: Post Operative Complications (n= 100)

Complications	Patients	%
Groin sepsis/ Wound infection	3	3
Scrotal edema / Haematoma	2	2
Wound Seroma	1	1
Wound Redness	2	2
Post operative residual pain	1	1
Urinary retention	2	2
Total	11	11

hernia is race related. It is at least three times more common in black Africans than in the white population.<sup>8</sup> About 80–90% of repairs are done in males. The most frequent type is right sided indirect inguinal hernia. Direct inguinal hernias are rare in females. Due to common incidence of this problem all over the world, much more is written on hernia repair than on any other surgical subject.<sup>7</sup>

Due to its common nature and increased incidence of recurrence and wound infection, a wide variety of surgical procedures and different materials were being used from time to time for hernia repair. All these procedures and materials have equivocal results and are beyond the level of satisfaction for different surgeons. All these modifications and surgical techniques have showed a common disadvantage i.e. suture line tension, which leads to increased incidence of recurrence and other complications. Post operative wound infection remains a common complication after hernia repair.

With the use of modern mesh prosthesis, it is now possible to repair all hernias without distortion of the normal anatomy and with no suture line tension.<sup>8</sup> Modern mesh is strong monofilament, inert, and readily available. It is unable to harbor infection, is very thin and porous. Its interstices become completely infiltrated with fibroblasts and remain strong permanently. It is not subjected to deterioration or rejection or it can not be felt by patients or surgeons postoperatively.<sup>8,9</sup>

Historically Tantalum mesh was introduced by Douglas and Koontz in 1948.<sup>10</sup> Lichtenstein introduced the prosthesis repair of inguinal hernia in 1964.<sup>7</sup> Marlex mesh was first used by Uscher.<sup>10</sup> Use of prosthetic material was criticized by some surgeons that being as a foreign material, it may increase the incidence of infection. This infection is difficult to treat and it may necessitate removal of mesh which causes more morbidity to the patient. So many surgeons routinely use antibiotics for a long time postoperatively to prevent postoperative mesh infection. The purpose of this study was to document number of cases of groin sepsis

following Lichtenstein's inguinal hernioplasty without antibiotics prophylaxis and also to find out the frequency of removal of mesh implant in these cases. The National Nosocomial Infection Surveillance system (NNISS) has defined surgical site infection (SSIs) /wound infection as presenting within 30 days of surgery unless a foreign body was left in situ, in which case one year must elapse before surgical wound infection can be excluded.<sup>6</sup>

The true incidence of mesh infection is not known because it varies from center to center. It has been reported between 0.7% to 15% at different centers at different time in different studies.<sup>11,12</sup> In our study 3% of patients developed wound infection which is inconsistent with the different studies reported in literature at different times internationally and in our country. Oflio<sup>13</sup> reported an infection rate of 4.5 % after repair under local anesthesia and 6.8% after General anesthesia. Zafar et al<sup>14</sup> and Sattar et al<sup>5</sup> reported incidence of wound sepsis was 1.9% and 7.5% respectively in patients who underwent Lichtenstein's repair. Nordin et al<sup>15</sup> reported an infection rate of 4% after Lichtenstein hernia repair in his study. Another study conducted by the Anfenacker and his colleagues<sup>16</sup> reported 1.7% of wound infection after Lichtenstein open mesh repair and there is no significant difference between antibiotic prophylaxis and placebo group. So they also concluded that antibiotic prophylaxis is not indicated in Lichtenstein primary inguinal hernia repair.

## CONCLUSION

Lichtenstein's repair is safe, easy to perform, with no evidence of increased infection risk with mesh implant, and even there is no need to use prophylactic antibiotics provided complete aseptic measures are taken.

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