

# OUTCOME OF INGUINAL HERNIA REPAIR WITH LICHTENSTEIN TECHNIQUE

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## ABSTRACT

**Background:** Inguinal hernia is a leading cause of work loss and disability. Recurrence and other complications can occur after hernia repair. The aim of this study was to evaluate prolene mesh repair by Lichtenstein technique for the treatment of inguinal hernia.

**Material & Methods:** This descriptive study was carried out at DHQ Hospital Bannu, from January 2007 to December 2007. Fifty patients of age >16 years with inguinal hernia were included. Those with diabetes mellitus, chronic obstructive air way disease, associated inguino-scrotal disease such as hydrocele, spermatocele, those with obstructed or strangulated hernia and with recurrent hernia were excluded. Patients were followed-up for three years and postoperative recurrence and complications were noted.

**Results:** All 50 patients were males. The peak incidence was in the 3<sup>rd</sup> and 4<sup>th</sup> decades. The hernia was direct in 34 and indirect in 16 patients. Average operating time was 45 minutes. Mean hospital stay was 1 day. Post-operative pain was minimal in all patients, controlled by simple analgesia. Return to work was after 4 weeks. Haematoma and seroma formation requiring drainage were observed in 2 and 3 patients respectively. Scrotal swelling was observed in 2 patients which subsided within 2 weeks. Post-operative neuralgia was observed in 3 patients. Five patients developed urinary retention. No hydrocele, wound infection, ischaemic orchitis or recurrence was found during the follow-up.

**Conclusion:** Mesh repair of inguinal hernia is associated with low morbidity. It is effective in the prevention of recurrence.

**KEY WORDS:** Hernia, Inguinal hernia, Mesh repair, Recurrence.

## INTRODUCTION

Hernia occupies 10-15% of all surgical procedures. Indirect inguinal hernia occurs in 55%, direct in 30% and pantaloon hernia in 15% of cases.<sup>1</sup> Inguinal hernia is a leading cause of work loss and disability. Knowledge of hernias goes back to Hippocrates when its treatment by truss was advised by Ebers Papyrus as early as 1550 BC.<sup>2</sup> Since the introduction of Bassini in 1887 more than 70 methods for its repair have been reported.<sup>3</sup> All these methods involve tissue approximation with various modifications.

With better understanding of anatomy and high recurrence rates these methods were replaced by tension free repair. In these methods reinforcement of posterior inguinal wall is done by suitable material instead of approximating the original tissues. Lichtenstein Hernia Institute introduced open tension free hernioplasty using mesh in 1984.<sup>4</sup> This was followed in 1991 by laparoscopic mesh hernioplasty initially as transabdominal preperitoneal repair and later in 1992 with total extra-peritoneal repair which potentially reduced the likelihood of intraperitoneal complications and adhesions.<sup>5,6</sup>

A good hernia repair should last for the rest of the life as Sir Cecil Wakeley said, "A surgeon can do more for the community by operating on hernia cases and seeing that his recurrence rate is low, than he can by operating on cases of malignant disease."<sup>7</sup>

Inguinal hernia repair is one of most common general surgical operation.<sup>8,9</sup> One of the principle aims for hernia surgery in the modern era is to lower the recurrence rate.<sup>10</sup> Recurrence of hernia has been reported to occur in 15% or more cases.<sup>11</sup> The repair of inguinal hernia with mesh by Lichtenstein technique, about 23 years ago opened a new era in the groin hernia repair.<sup>12-14</sup>

The aim of this study was to evaluate the prolene mesh repair by Lichtenstein technique for the treatment of inguinal hernia.

## MATERIAL AND METHODS

This study was conducted on 50 patients, from January 2007 to December 2007 in the Department of Surgery, District Head Quarter Hospital Bannu. The operative and post-operative complications, hospital stay and time of operative pro-

cedure were recorded. Patients were followed-up for 3 years after surgery.

Patients of age > 16 with inguinal hernia were included. Those with diabetes mellitus and chronic obstructive air way disease were excluded from the study. Patients with associated inguino-scrotal disease such as hydrocele, spermatocele and those with obstructed or strangulated hernia were also excluded. Patient with recurrent hernia were also excluded.

Groin incision was given above the inguinal ligament in the medial 2/3<sup>rd</sup> area to the skin, subcutaneous tissues and external oblique aponeurosis. The spermatic cord was elevated from the posterior wall of inguinal canal. In indirect hernias, the hernia sac was identified, dissected to the internal ring and opened to allow examination of its contents. The sac was ligated and its distal portion excised. However in large indirect inguinal hernias, when the sac descends down to the scrotum, the distal part of the sac was left open to prevent the formation of hydrocele, thus allowing spontaneous obliteration. In cases of direct hernia, the sac was plicated in the abdominal cavity.

A polypropylene mesh was trimmed to fit the floor of inguinal canal and its apex sutured to the pubic tubercle using 2/0 prolene suture. With the same continuous sutures the lower border of the mesh to the free edge of inguinal ligament after an opening is made into the lower edge to accommodate the spermatic cord. The two cut edges of the mesh were sutured together around the spermatic cord. The mesh was then anchored to conjoint tendon by interrupted sutures. After meticulous haemostasis, a closed suction drain was placed beneath the external oblique aponeurosis. The aponeurosis of external oblique was closed using absorbable sutures.

Surgery was performed under general or spinal anesthesia. Patients were discharged the next day along with suction drain. Drain was removed when the contents were minimum.

### RESULTS

All the 50 patients in this series were males. The peak incidence was found in the 3<sup>rd</sup> and 4<sup>th</sup> decades. Inguinal hernia was direct in 34 and indirect in 16 patients. Average operating time was 45 minutes. Post-operative pain was minimal in all the patients, controlled by simple analgesics. Mean hospital stay was 1 day. Return to work was after 4 weeks.

Haematoma and seroma formation requiring drainage were observed in 2 and 3 patients respectively. Scrotal swelling was observed in 2 patients which subsided within 2 weeks. Post-opera-

tive neuralgia was observed in 3 patients, managed conservatively in all cases.

Five patients developed urinary retention, they were catheterized for 2-3 days and were able to pass urine normally after removal of the catheter. It was observed in older age group in whom prostate was found to be within upper normal limits on digital rectal examination but they had no urinary symptoms preoperatively.

No patient was having hydrocele or wound infection during follow-up. No patient presented with ischaemic orchitis or recurrence during the 3 years follow-up. No recurrence was observed during the follow-up.

### DISCUSSION

In our study there was no recurrence after 3 years follow up. Other studies also show the same results.<sup>15,16</sup> In a study comparing darn repair and mesh hernioplasty for inguinal hernia, the recurrence was 1.01% in darn repair and 1.13% in mesh hernioplasty.<sup>17</sup> In a study by Saeed et al the recurrence with Bassini repair was 5.5% after one year follow up.<sup>18</sup> Recurrence rate was 2.27% with darn repair while 2.15% with mesh hernioplasty.<sup>19</sup>

The operating time in our study was 45 minutes while operating time was 36 minutes for mesh repair and 38 minutes with darn repair in another study from India.<sup>20</sup> Operating time was 35 minutes in darning while 45 minutes in Lichtenstein's operation.<sup>19</sup> Operating time was 43 minutes in darn repair while 81 minutes for the Shouldice repair.<sup>21</sup>

Post-operative chronic pain (neuralgia) was observed in 6% patients in our study. Neuralgia was also 6% in the study of Majeed et al.<sup>22</sup> Chronic groin pain was also observed in 9.6% of patients in the study by Saeed et al.<sup>23</sup>

The mean hospital stay in our study was one night. It is also comparable to other studies as it was 1.3 nights following the operation of Bassini repair and 1.1 nights following the Lichtenstein repair.<sup>15</sup>

Return to work was after 4 weeks which is also comparable to other studies.

### CONCLUSION

Mesh repair of inguinal hernia by Lichtenstein technique is associated with low morbidity. It is effective in the prevention of recurrence.

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