

A PROSPECTIVE STUDY BETWEEN PLUG HERNIOPLASTY & LICHTENSTEIN TENSION FREE HERNIOPLASTY FOR TREATMENT OF INGUINAL HERNIA

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ABSTRACT

INTRODUCTION

Hernia is a common problem. Although there are so many technique of inguinal hernia repair, no one technique is taken as the ideal technique till date, as there are advantages and disadvantage in each technique. Availability of resources is one of the important factor to choose the technique of inguinal hernia repair.

OBJECTIVE

To compare outcome between tailored plug and patch hernioplasty and Lichtenstein tension free hernioplasty in regards of post op pain, analgesic requirement, hospital stay, post op complications and recurrence.

MATERIALS AND METHODS

120 inguinal hernia patients admitted for operation in the dept. of surgery, Mac Gann hospital Shivamogga were included in the study. 60 patients were operated by plug and patch and 60 patients were operated by Lichtenstein patch technique. Data was collected in terms of operating time, post of pain, hospital stay, and return to normal work and recurrences. Student t test was used for analyses.

RESULTS

For plug and patch patients, mean operating time was 43.07mins. For Lichtenstein patient it was 59.43mins. ($p < 0.05$). Mean hospital stay for plug and patch was 2.90 days and for Lichtenstein patch repair it was 4.90 days which was statistically significant. There was no difference in terms of return to normal activities.

CONCLUSION

Tailored plug and patch operation took less time and experienced less postoperative pain and less hospital stay, although return to normal activities is same for both the technique.

KEYWORDS

Inguinal Hernia, Tailored Plug and Patch, Lichtenstein Tension Free Repair.

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INTRODUCTION: Hernia is one of the common problems. 5% of population develop anterior abdominal hernia.¹

75% of all hernia occur in inguinal region. Many approaches were made for treatment of inguinal hernia. Bassini hernia repair was popular until 1986 when Lichtenstein introduced Tension Free Mesh Hernioplasty Technique with least recurrence rate Milkman described a tailored mesh plug from a 15x15 cm mesh which was cost effective and similarly effective.² Following plug and patch technique, Sandwich technique named Prolene Hernia System developed for treatment inguinal hernia.

With advent of minimally invasive surgery, laparoscopic inguinal hernia repair has become popular now a days.

Although cost, requirement of general anaesthesia and its non-availability widely, remains its limitation.

AIMS AND OBJECTIVES: To compare outcome between tailored plug and patch hernioplasty and Lichtenstein tension free hernioplasty in regard to post -op pain, analgesic requirement, hospital stay, post of complications and recurrence.

MATERIALS AND METHODS: This study was undertaken in the dept. of surgery, Mc Gann hospital Shivamogga from June 2012-May 2014. 120 inguinal hernia patients with exception of pantaloon hernia and morbid obesity patients. 60 patients were operated by plug and patch (PP) and another 60 patients were by Lichtenstein patch technique (LP). Data was collected in terms of operating time, intra-operative complication, post-operative pain, analgesic requirement, hospital stay, return to normal work and late surgical complications for both groups. Data was analysed statistically as shown.

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RESULTS: Among 120 patients most were of 39-48 years and all patients in this study were male patients. Mean age in group (PP) was 42.67 years and that of group (LP) was 43.17 years. There was no statistical difference in age between the two groups.

	Group-A (n=30)	Group-B (n=30)
Age group	PP	LP
18-28	8	8
29-38	8	10
39-48	26	120
49-58	18	18
>58	0	4
Mean age	42.67 years	43.17 years
Table 1: Age distribution of patients among study population		

102 patients had right inguinal hernia (RIH) and 18 patients had left inguinal hernia (LIH). Patients of RIH and 8 patients of LIH underwent plug and patch repair, 50 patients of RIH and 10 patients of LIH underwent Lichtenstein repair. (P=0.846)

Operating time	PP	LP
<45	30	6
45-55	14	20
>55	2	34
Mean operating time	43.07min	59.43min
Table 2: Distribution of operating time among the study population		

Mean operating time was less in plug and patch technique than Lichtenstein procedure as evident in table-2. which was statistically significant. (p-value 0.001)

Wound infection	PP	LP
Yes	4 (6.6%)	8(13.33%)
No	56(93.33%)	52(86.67%)
Table 3: Distribution of wound infection among the study population		

Wound infection was not significant in both the group as per table-3.

Post op pain on day 1	PP	LP
Yes	12	36
No	48	24
Table 4: Distribution of post-operative pain in first 8 days among study population		

P=0.002 significant.

Table 4 showed that post-operative pain was significantly less in plug and patch technique.

Analgesic requirement on day1		
<2	2	0
2-3	42	58

>3	6	2
Mean	2.6	2.53
Table 5: Distribution of analgesic requirement		

There was no statistically significant difference in mean days of analgesic requirement between two groups. (P 0.715).

Duration of hospital stay	PPP	LLP
NN<<3	24	4
3-4	34	24
>4	2	32
Mean days of hospital stay	2.9	4.9
Table 6: Distribution of duration of hospital stay among study population		

Mean hospital stay was significantly less in plug and patch group, p-value <0.001.

DISCUSSION: The history and principles behind mesh-plug hernioplasty span 3 decades, starting with Lichtenstein. They reported results of a cylindrical roll of polypropylene mesh placed in recurrent or femoral hernia defects. This technique was replaced by the onlay mesh repair popularized in the 1980s by Lichtenstein et al.^{3, 4} Shocket in 1985 reported placing polypropylene preperitoneally to buttress primary inguinal hernia repairs.⁵ Gilbert used this principle to place a cone of mesh pre-peritoneally and allowed to flatten it out in this place for indirect hernias.⁶ Ruthkow and Robbins subsequently started using a cone similar to Gilbert's repair for all inguinal hernias. They modified the plug to smooth out the apex and imbricate the outer umbrella to have a plug much larger than the hernia defect and that could radially conform to the defect and decrease the possibility of plug migration.⁷ We developed a tailored mesh plug similar to that developed by Milkman.⁸ For indirect hernias, the inner petals were sutured to the internal oblique muscle medially, and in large patulous rings to the inguinal ligament as well. This allows for the outer umbrella to open and flatten out in the pre-peritoneal space. This simulates the sutureless repair of indirect hernias by Gilbert.

For direct hernias, the inner cone (petal) was sutured to the conjoint tendon medially and to the cooper ligament and inguinal ligament laterally, allowing for the outer umbrella and the other petals to open and flatten out in the preperitoneal space similar to mesh placed in a Stoppa⁹ or KuGel,¹⁰ laparoscopic repair. In the present study 60 patients were divided into two groups, half of them were operated by tailored plug and patch technique and rest were operated by Lichtenstein tension free technique. There was no statistical significance in age or the side of hernia as regards the operative time it was 43.07 minutes for plug and patch versus 59.43 minutes for Lichtenstein, which has been statistically significant (p<0.05). Horharin P et al¹¹ study shows that mean operating time was 60 minutes for tailor-made mesh plug hernioplasty, 82 minutes for Lichtenstein hernioplasty and 82 minutes for Bassini operation.

Dalenback et al¹² shows similar results. In our study mean number of days of hospital stay for tailored plug and patch group was 2.90 days and for Lichtenstein patch repair group was 4.90 days which was statistically significant and these results are similar to Tarekounf et al.¹³ The mean days of return to normal activities were 7.80 days for tailored plug and patch operation and for Lichtenstein patch repair 7.57 days, it was not statistically significant as reported by Kingsnorth A.N. et al¹⁴ and Sadd A et al.¹⁵ There was no recurrence of hernia in either group during the study period.

CONCLUSION: Tailored plug and patch operation experienced less postoperative pain in the first 8 days after the operation. Rate of return to normal activity and work is similar in both groups. Over all operative time and hospital stay was less in tailored plug and patch group. A long term large number of study population needed to comment on recurrence, and other parameters too and superiority of one to other.

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