

ORIGINAL ARTICLE

A comparative study of Lichtenstein and Rutkow–Robbins method of hernia repair

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ABSTRACT:

Background: Hernias are among the oldest known affliction of humankind and the repair of inguinal hernias dates back to the birth of civilization. The present study was conducted to compare Lichtenstein and Rutkow–Robbins method of hernia repair. **Materials & Methods:** 40 patients undergoing inguinal hernia repair were divided into 2 groups of 20 each. Group I were managed with Lichtenstein operation and group II with Rutkow–Robbins method. Patients were recalled for drain placement, early and late complications, and recurrence rates. Preoperative pains of the cases were assessed at 1, 7, and 1 month with visual analog scale. **Results:** The mean hospital stay was 2.1 days in group I and 2.8 days in group II, drain were 3 in group I and 1 in group II, early complications were seen in 2 in group I and 5 in group II and late complications were among 4 in group I and 3 in group II. The mean VAS score on day 1 in group I was 1.60 and in group II was 1.94, on 7 days was 0.72 in group I and 0.86 in group II and on 1 month was 0.17 in group I and 0.09 in group II. The difference was non-significant ($P > 0.05$). **Conclusion:** Lichtenstein operation is more advantageous than Rutkow–Robbins onlay method of inguinal hernia repair.

Key words: Lichtenstein, Rutkow–Robbins, Hernia

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INTRODUCTION

Hernias are among the oldest known affliction of humankind and the repair of inguinal hernias dates back to the birth of civilization. In the entire events of surgery, no subject has been so disputed and debated, as the repair of groin hernia is concerned. It seems to be highly difficult to understand and contradictory that although surgeons have discovered how to carry organ transplantation, yet the problem of repair of inguinal hernia remains unsolved, even with emerging new techniques.¹

Although the first ever inguinal floor reconstruction was performed by Bassini in 1881, there have been plenty of modifications given by various surgeons for inguinal hernia repairs, each claiming his repair more anatomical, more accurate with much less tension.² However, whatever modification one may make, some tension on the suture line for these herniorrhaphies was inevitable. So the rate of recurrence was still high, even after newer techniques of tissue based non-mesh hernia repair. Still newer concepts, modern materials and recent experimental evidences invite re-evaluation of established surgical tenets.³

Currently, hernia is treated with surgery. Hernia surgeries comprise 10–15 % of all general surgery procedures. In terms of recurrence and complication rates, tension-free repairs are the most commonly preferred operative techniques.⁴ Lichtenstein method and it's modifications such as Gilbert and Rutkow–Robbins are known to be tension-free anterior

approaches which have been found to produce considerably low recurrence and complication rates. Moreover, the fact that those operations can also be performed under local anesthesia instead of general or spinal anesthesia provides yet another advantage.⁵ The present study was conducted to compare Lichtenstein and Rutkow–Robbins method of hernia repair.

MATERIALS & METHOD

The present study was conducted among 40 patients undergoing inguinal hernia repair of both genders. All were taken into the study with their written consent. Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 20 each. Group I were managed with Lichtenstein operation and group II with Rutkow–Robbins method. In Lichtenstein method, polypropylene mesh of 6×11 cm size was fixed inferiorly to the ligamentum inguinale and superiorly to the fascia transversalis with a 2/0 polypropylene suture. While applying Rutkow–Robbins onlay method, premade Rutkow plug hernia sac was prepared and placed into the abdomen before being sutured to the internal ring on which the onlay graft was fixed inferiorly to the ligamentum inguinale and superiorly to the fascia transversalis with a 2/0 polypropylene suture. Patients were recalled for drain placement, early and late complications, and recurrence rates. Preoperative pains of the cases were assessed at 1, 7, and 1 month with visual analog scale. Results thus obtained were subjected to statistical

analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Method	Lichtenstein operation	Rutkow–Robbins onlay method
M:F	12:8	13:7

Table I shows that group I had 12 males and 8 females and group II had 13 males and 7 females.

Table II Comparison of parameters

Parameters	Group I	Group II	P value
Hospital stay (days)	2.1	2.8	0.15
Drain	3	1	0.05
Early complication	2	5	0.02
Late complication	4	3	0.11

Table II, graph I shows that mean hospital stay was 2.1 days in group I and 2.8 days in group II, drain were 3 in group I and 1 in group II, early complications were seen in 2 in group I and 5 in group II and late complications were among 4 in group I and 3 in group II. The difference was significant (P< 0.05).

Graph I Comparison of parameters

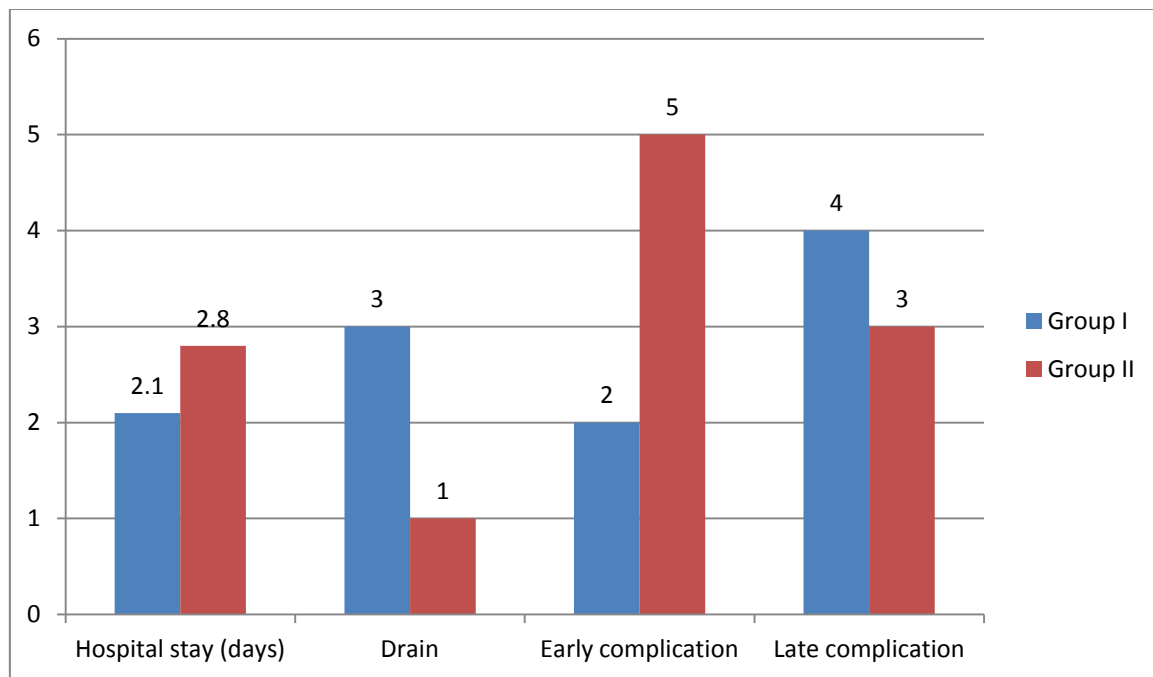


Table III Comparison of VAS in both groups

VAS	Group I	Group II	P value
1 day	1.60	1.94	0.17
7 days	0.72	0.86	
1 month	0.17	0.09	

Table III shows that mean VAS score on day 1 in group I was 1.60 and in group II was 1.94, on 7 days was 0.72 in group I and 0.86 in group II and on 1 month was 0.17 in group I and 0.09 in group II. The difference was non-significant (P> 0.05).

DISCUSSION

A hernia is defined as an abnormal protrusion of a viscus or a part of it, through the wall that contains it but without a breach in the body surface. By far the commonest variety of hernia is the protrusion of abdominal wall. Inguinal hernia most probably has been a disease ever since mankind existed. In humans, the upright posture causes the gravitational stress to pass down to the lower abdominal wall.⁶ Successful hernia repair must include achievement of an effective repair with the lowest possible recurrence, minimal operative and post-operative discomfort with a rapid return to normal activity. Success of groin hernia repair depends largely on the surgeons, understanding of the functional anatomy and pathophysiology of the abdominal wall and groin, as well as the knowledge that how to use the currently available techniques and materials most effectively.⁷ The present study was conducted to compare Lichtenstein and Rutkow–Robbins method of hernia repair.

In present study, group I had 12 males and 8 females and group II had 13 males and 7 females. Karatepe et al⁸ compared three different techniques of Rutkow–Robbins Repair (Group-A), Gilbert double Repair (Group-B) and Lichtenstein operation (Group-C). In this study, out of total 95 patients, 60 (63.1%) patients were having right indirect inguinal hernia, 30 (31.6%) patients were having left indirect inguinal hernias and 10 (10.5%) patients were having bilateral inguinal hernias. From the above data it is clearly shown that there is much higher incidence of right sided indirect inguinal hernias as compared to the left sided indirect inguinal hernias and bilateral inguinal hernias.

We found that mean hospital stay was 2.1 days in group I and 2.8 days in group II, drain were 3 in group I and 1 in group II, early complications were seen in 2 in group I and 5 in group II and late complications were among 4 in group I and 3 in group II. Karaca et al⁹ in their study on one-hundred and fifty patients diagnosed with inguinal hernia were randomly split into three groups. The comparisons across groups were carried out in terms of operation length, postoperative pain, femoral vein flow velocity, early and late complications, recurrence rates, length of hospital stay, time required to return to work, and cost analysis. No difference was found between the groups regarding age, gender, type and classification of hernia, postoperative pain, and late complications ($p>0.05$). Operation length was 53.70 ± 12.32 min in the Lichtenstein group, 44.29 ± 12.37 min in the Rutkow–Robbins group, and 45.21 ± 14.36 min in the Gilbert group.

We found that mean VAS score on day 1 in group I was 1.60 and in group II was 1.94, on 7 days was 0.72 in group I and 0.86 in group II and on 1 month was 0.17 in group I and 0.09 in group II. C. S. Huang et al¹⁰ conducted a study and compared the patients treated with Prolene and plug in which the hospital stay was found to be 1.31 ± 1.00 days for Prolene

patients and 1.45 ± 1.43 for plug patients. Pierides G et al¹¹ conducted a prospective randomized clinical trial comparing the prolene hernia system (comparable to plug and patch repair) and Lichtenstein patch technique for inguinal hernia repair in long term which concluded that the two approaches resulted in comparable rates of recurrence and long-term chronic postoperative pain.²⁹ The Lichtenstein patch caused significantly (more often) long-term sensory dysfunction of the skin in the operated groin.

Tarek IO, Talaat AA, et al¹² had done a comparative study in the form of Plug and Patch versus Lichtenstein hernioplasty in recurrent inguinal hernias. In the end of their study they found that Lichtenstein and plug and patch repairs are equally effective in the repair of recurrent inguinal hernias. However, plug and patch is superior to mesh patch as patients who had plug and patch had less requirement for postoperative analgesics, shorter hospital stay, earlier return to daily activities and less postoperative complications.

CONCLUSION

Authors found that Lichtenstein operation is more advantageous than Rutkow–Robbins onlay method of inguinal hernia repair.

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