

## ORIGINAL RESEARCH

### **Rutkow–Robbins versus Gilbert Double Layer Graft Methods of hernia repair**

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#### **ABSTRACT**

**Background:** Inguinal hernias are common, and although the results of surgical repair are often satisfactory, postoperative recovery may be slow, and the hernia may recur. The present study compared Rutkow–Robbins and Gilbert Double Layer Graft Methods of hernia repair.

**Materials & Methods:** 60 patients of inguinal hernia of both genders were divided into 2 groups of 30 each. Group I were treated with Rutkow–Robbins method and group II with Gilbert double layer graft methods. Parameters such as VAS and complications were compared

**Results:** There were 18 males and 12 females in group I and 11 males and 19 females in group II. Anesthesia used was local in 16 in group I and 10 in group II, general 6 in both groups and spinal 8 in group I and 14 in group II. The mean hospitalization (days) was 2.24 in group I and 2.31 in group II and operation time (mins) was 26.2 in group I and 24.6 minutes in group II. The mean VAS was 1.91 and 2.14 at day 1, 0.84 and 1.21 at day 7 and 0.09 and 0.27 at day 30 in group I and II respectively.

**Conclusion:** Both methods of inguinal hernia repair was comparable.

**Key words:** Anesthesia, inguinal hernia, Rutkow–Robbins, Gilbert Double Layer Graft

#### **INTRODUCTION**

Inguinal hernias are common, and although the results of surgical repair are often satisfactory, postoperative recovery may be slow, and the hernia may recur. <sup>1</sup>The period of recovery after repair of inguinal hernia in patients with paid recovery time is four to six weeks in most Western countries. Elimination of anxiety about resuming work could shorten the recovery, but this possibility has not been studied. Recurrence rates have ranged from less than 1 percent to more than 10 percent, with a follow-up of more than five years. <sup>2</sup> These data should be viewed with some caution, however, because follow-up data are often incomplete and unreliable. Indeed, the overall recurrence rate in the Netherlands, the United Kingdom, and the United States and the results of large, prospective, controlled studies suggest higher rates. <sup>3</sup>

s 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. <sup>4</sup> Lichtenstein method and its 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. <sup>5</sup> Moreover, the fact that those operations

can also be performed under local anesthesia instead of general or spinal anesthesia provides yet another advantage.<sup>6</sup> The present study compared Rutkow–Robbins and Gilbert Double Layer Graft Methods of hernia repair.

## MATERIALS & METHODS

The present study comprised of 60 patients of inguinal hernia of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. They were divided into 2 groups of 30 each. Group I were treated with Rutkow–Robbins method and group II with Gilbert double layer graft methods. Parameters such as VAS and complications were compared. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

Groups	Group I	Group II
Status	Rutkow–Robbins method	Gilbert double layer
M:F	18:12	11:19

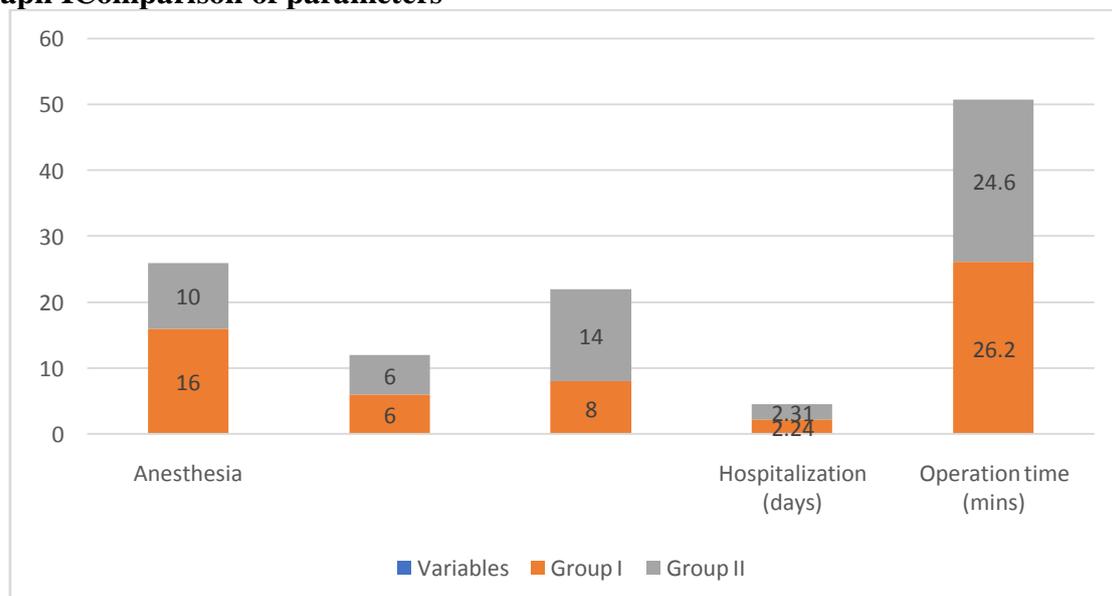
Table I shows that there were 18 males and 12 females in group I and 11 males and 19 females in group II.

**Table II Comparison of parameters**

Parameters	Variables	Group I	Group II	P value
Anesthesia	Local	16	10	0.05
	General	6	6	
	Spinal	8	14	
Hospitalization (days)		2.24	2.31	0.12
Operation time (mins)		26.2	24.6	0.04

Table II, graph I shows that anesthesia used was local in 16 in group I and 10 in group II, general 6 in both groups and spinal 8 in group I and 14 in group II. The mean hospitalization (days) was 2.24 in group I and 2.31 in group II and operation time (mins) was 26.2 in group I and 24.6 minutes in group II. The difference was significant (P< 0.05).

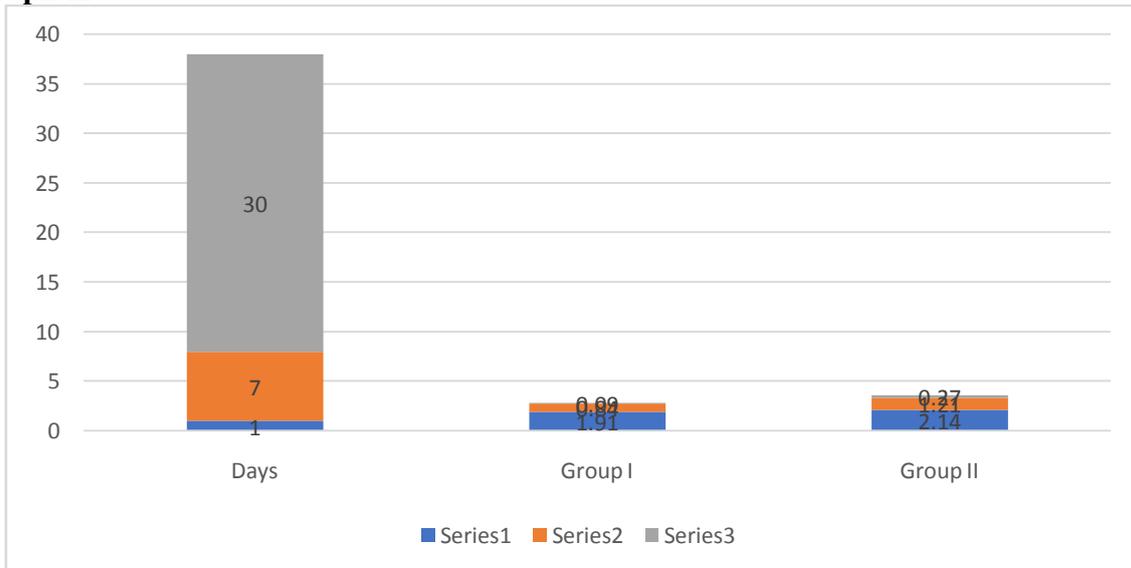
**Graph I Comparison of parameters**



**Table III Comparison of VAS**

Days	Group I	Group II	P value
1	1.91	2.14	0.05
7	0.84	1.21	0.12
30	0.09	0.27	0.01

Table III, graph II shows that mean VAS was 1.91 and 2.14 at day 1, 0.84 and 1.21 at day 7 and 0.09 and 0.27 at day 30 in group I and II respectively. The difference was significant ( $P < 0.05$ ).

**Graph II**

## DISCUSSION

Inguinal hernia is surgical complication after laparotomy. Up to 30% of all patients undergoing laparotomy develop hernia.<sup>7</sup> This is associated with discomfort, pain, respiratory restriction, and dissatisfactory cosmetic results.<sup>8,9</sup> The associated morbidity often results in subsequent hernia repair.<sup>10</sup> Although significant improvements have been achieved in the field of incisional hernia concerning operative technique and the use of prosthetic materials, recurrence rates remain high at 32% to 63%.<sup>11</sup> The present study compared Rutkow–Robbins and Gilbert Double Layer Graft Methods of hernia repair.

We found that there were 18 males and 12 females in group I and 11 males and 19 females in group II. Anesthesia used was local in 16 in group I and 10 in group II, general 6 in both groups and spinal 8 in group I and 14 in group II. Karaca et al<sup>12</sup> compared Lichtenstein, Rutkow–Robbins, and Gilbert double layer method of inguinal hernia repair. One-hundred and fifty patients diagnosed with inguinal hernia were randomly split into three groups. 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  $53.70 \pm 12.32$  min in the Lichtenstein group,  $44.29 \pm 12.37$  min in the Rutkow–Robbins group, and  $45.21 \pm 14.36$  min in the Gilbert group ( $p < 0.05$ ). Mean preoperative and postoperative femoral vein flow velocity values were  $13.88 \pm 2.237$  and  $13.42 \pm 2.239$  cm/s for Lichtenstein group,  $12.64 \pm 2.98$  and  $12.16 \pm 2.736$  cm/s for Rutkow–Robbins group, and  $16.02 \pm 3.19$  and  $15.52 \pm 3.358$  cm/s for the Gilbert group, respectively. Statistical difference was found between all the groups ( $p < 0.001$ ). However, no difference was determined between the groups regarding the decrease rates ( $p = 0.977$ ). Among early complications, hematoma was observed in one (2 %) patient of Lichtenstein group, five (10 %) patients of Rutkow–Robbins

group, and three (6 %) patients of Gilbert group ( $p=0.033$ ). Cost analysis produced the following results for Lichtenstein, Rutkow–Robbins, and Gilbert groups: US \$157.94±50.05, \$481.57±11.32, and \$501.51± 73.59, respectively ( $p<0.001$ ). Lichtenstein operation was found to be more advantageous compared with the other techniques in terms of cost analysis as well as having unaffected femoral blood flow.

We found that the mean hospitalization (days) was 2.24 in group I and 2.31 in group II and operation time (mins) was 26.2 in group I and 24.6 minutes in group II. Eker et al<sup>13</sup> studied two hundred six patients from 10 hospitals who were randomized equally to laparoscopic or open mesh repair. The primary outcome of the trial was postoperative pain. Secondary outcomes were use of analgesics, perioperative and postoperative complications, operative time, postoperative nausea, length of hospital stay, recurrence, morbidity, and mortality. Median blood loss during the operation was significantly less (10 mL vs 50 mL;  $P=.05$ ) as well as the number of patients receiving a wound drain (3% vs 45%;  $P.001$ ) in the laparoscopic group. Operative time for the laparoscopic group was longer (100 minutes vs 76 minutes;  $P=.001$ ). Perioperative complications were significantly higher after laparoscopy (9% vs 2%). Visual analog scale scores for pain and nausea, completed before surgery and 3 days and 1 and 4 weeks postoperatively, showed no significant differences between the 2 groups. At a mean follow-up period of 35 months, a recurrence rate of 14% was reported in the open group and 18%, in the laparoscopic group ( $P=.30$ ). The size of the defect was found to be an independent predictor for recurrence ( $P.001$ ).

We found that the mean VAS was 1.91 and 2.14 at day 1, 0.84 and 1.21 at day 7 and 0.09 and 0.27 at day 30 in group I and II respectively. Liem et al<sup>14</sup> included six patients in the open-surgery group but none in the laparoscopic-surgery group had wound abscesses ( $P=0.03$ ), and the patients in the laparoscopic-surgery group had a more rapid recovery (median time to the resumption of normal daily activity, 6 vs. 10 days; time to the return to work, 14 vs. 21 days; and time to the resumption of athletic activities, 24 vs. 36 days;  $P<0.001$  for all comparisons). With a median follow-up of 607 days, 31 patients (6 percent) in the open-surgery group had recurrences, as compared with 17 patients (3 percent) in the laparoscopic-surgery group ( $P=0.05$ ). All but three of the recurrences in the latter group were within one year after surgery and were caused by surgeon-related errors. In the open-surgery group, 15 patients had recurrences during the first year, and 16 during the second year. Follow-up was complete for 97 percent of the patients.

## CONCLUSION

Authors found that both methods of inguinal hernia repair was comparable.

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