

ORIGINAL RESEARCH

Minimally invasive surgery versus open surgery for abdominal and groin hernias

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ABSTRACT

Background: Inguinal hernias present with a lump in the groin that goes away with minimal pressure or when the patient is lying down. The present study was conducted to compare minimally invasive surgery versus open surgery for abdominal and groin hernias.

Materials & Methods: 90 patients of abdominal and groin hernia of both genders were divided into 2 groups of 45 each. Group I underwent open surgery and group II laparoscopic surgery. Patients were followed up at 1 week, 1 month, 3 months, 6 months intervals.

Results: Group I had 30 males and 15 females and group II had 26 males and 19 females. Type of hernia was epigastric hernia seen in 5 in group I and 4 in group II, incisional hernia 7 in group I and 6 in group II, umbilical 20 in group I and 23 in group II and paraumbilical 13 in group I and 12 in group II.

Conclusion: Laparoscopic group showed better treatment outcome as compared to open group.

Key words: abdominal, groin hernias, minimally invasive surgery

Introduction

Hernia is defined as an abnormal protrusion of a viscus or a part of a viscus lined by a sac, through a normal or abnormal opening in the abdominal wall.¹ Ventral Hernia is a protrusion of an abdominal viscus or part of a viscus through the anterior abdominal wall occurring at any site other than the groin.² It includes incisional hernias, paraumbilical hernias, umbilical hernia, epigastric hernias and spigelian hernias. An inguinal hernia is a protrusion of abdominal contents into the inguinal canal through an abdominal wall defect. The introduction of laparoscopic technique has sparked a debate over the superiority of this method versus open repair.³ Though a variety of procedures are performed, none can be termed as an ideal procedure as each one is accompanied by varied early and late complications, the most significant being recurrence.⁴

Inguinal hernias present with a lump in the groin that goes away with minimal pressure or when the patient is lying down.⁵ Most cause mild to moderate discomfort that increases with activity. A third of patients scheduled for surgery have no pain, and severe pain is uncommon (1.5% at rest and 10.2% on movement).⁶ Inguinal hernias are at risk of irreducibility or incarceration, which may result in strangulation and obstruction; however, unlike with femoral hernias, strangulation is rare.⁷ The present study was conducted to compare minimally invasive surgery versus open surgery for abdominal and groin hernias.

Materials & Methods

The present study comprised of 90 patients of abdominal and groin hernia of both genders. The consent was obtained from all patients.

Data such as name, age, gender etc. was recorded. A thorough history and physical examination was performed. Ultrasound abdomen was done to know the size of defect, the contents and any other abdominal pathology. Patients were divided into 2 groups of 45 each. Group I underwent open surgery and group II laparoscopic surgery. Patients were followed up at 1 week, 1 month, 3 months, 6 months intervals. 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	Open surgery	laparoscopic surgery
M:F	30:15	26:19

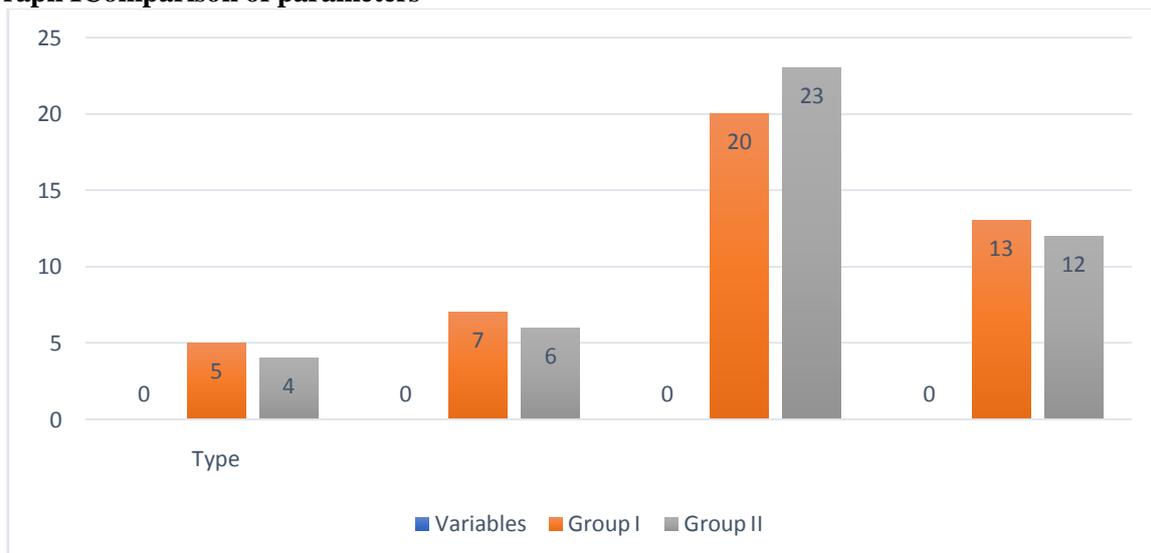
Table I shows that group I had 30 males and 15 females and group II had 26 males and 19 females.

Table II Comparison of parameters

Parameters	Variables	Group I	Group II	P value
Type	Epigastric hernia	5	4	0.03
	Incisional hernia	7	6	
	Umbilical	20	23	
	Paraumbilical	13	12	
Cost of hospital stay (rupees)		5214.6	7012.8	0.01

Table II, graph I shows that type of hernia was epigastric hernia seen in 5 in group I and 4 in group II, incisional hernia 7 in group I and 6 in group II, umbilical 20 in group I and 23 in group II and paraumbilical 13 in group I and 12 in group II. The cost of hospital stay (rupees) was 5214.6 in group I and 7012.8 in group II. The difference was significant (P< 0.05).

Graph I Comparison of parameters



Discussion

A hernia is reducible if it occurs intermittently (such as on straining or standing) and can be pushed back into the abdominal cavity, and irreducible if it remains permanently outside the abdominal cavity.^{8,9} A reducible hernia is usually a longstanding condition, and diagnosis is made clinically, on

the basis of typical symptoms and signs. The condition may be unilateral or bilateral and may recur after treatment (recurrent hernia).¹⁰ Inguinal hernias are often classified as direct or indirect, depending on whether the hernia sac bulges directly through the posterior wall of the inguinal canal (direct hernia) or passes through the internal inguinal ring alongside the spermatic cord, following the coursing of the inguinal canal (indirect hernia). However, there is no clinical merit in trying to differentiate between direct or indirect hernias.¹¹ The present study was conducted to compare minimally invasive surgery versus open surgery for abdominal and groin hernias.

In present study, 90 patients of abdominal and groin hernia of both genders were studied. Patients were divided into 2 groups of 45 each. Group I underwent open surgery and group II laparoscopic surgery. Kant et al¹² found that in the open group, there are a total of 30 patients. Of the 30 patients, 2 (6.7%) had epigastric hernia, 12 (40%) had umbilical hernia, 10 (33.3%) had paraumbilical hernia and 6 patients (20%) had incisional hernia. Of the 30 patients in the laparoscopic group, 2 (6.7%) had epigastric hernia, 18 (60%) had umbilical hernia, 3 (10%) had paraumbilical hernia and 7 (23.3%) patients had incisional hernia. The discomfort experienced by the group who underwent laparoscopic surgery (n=30) was compared to the discomfort experienced for the group who underwent open surgery (n=30). Well accepted pain scoring system, the verbal response scale (VRS) were used to grade the pain. Pain relief was achieved by injectable NSAIDS administered by IM route. The average duration of post-operative analgesia required in the laparoscopic Group was 1.37 while that required by the open group was 2.63 days.

We observed that group I had 30 males and 15 females and group II had 26 males and 19 females. We found that type of hernia was epigastric hernia seen in 5 in group I and 4 in group II, incisional hernia 7 in group I and 6 in group II, umbilical 20 in group I and 23 in group II and paraumbilical 13 in group I and 12 in group II. The cost of hospital stay (rupees) was 5214.6 in group I and 7012.8 in group II. Eker et al¹³ compared laparoscopic vs open ventral incisional hernia repair with regard to postoperative pain and nausea, operative results, perioperative and postoperative complications, hospital admission, and recurrence rate. Two hundred six patients from 10 hospitals were randomized equally to laparoscopic or open mesh repair. Patients with an incisional hernia larger than 3 cm and smaller than 15 cm, either primary or recurrent, were included. Patients were excluded if they had an open abdomen treatment in their medical histories. 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 ($P < .001$).

Conclusion

Authors found that laparoscopic group showed better treatment outcome as compared to open group.

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