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Laparoscopic versus open ventral hernia repair

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Abstract---Background: Ventral hernia is second most common type of abdominal hernia after inguinal hernia. Treatment includes anatomical repair, meshplasty: onlay, sublay, preperitoneal etc. Evaluation of laparoscopic hernia repair has led to new benchmark for ventral hernia repair. This study aims to compare laparoscopic ventral hernia repair versus open repair. Methods: Total 30 patients were enrolled in this study who presented to Dhiraj hospital pipariya. Detailed history was taken and patient were randomly divided in to 2 groups. Results: There were 22 females and 8 male patients in this study. Mean age was 42.4 years. Mean operative time in laparoscopic surgery was 80.25± 2.43 minutes versus 60±3.44 minutes. Mean hospital stay in laparoscopic was 3.5 days versus 5.5 days in open hernia repair. Conclusion: Laparoscopic meshplasty is better than open repair in terms of early recovery, less pain, minimal scar, early return to work.

Keywords---ventral hernia; laparoscopic surgery, open surgery

Introduction

Hernia is one of surgical disease that a surgeon encounters during practice. Ventral hernia is second most common type of abdominal wall hernia after Inguinal hernia with incidence of 10% of all hernia. ⁽¹⁾ It occur as a result of weakness in the musculofascial layer of the anterior abdominal wall. ⁽¹⁾ It is classified in to congenital such as omphalocele, gastroschisis, umbilical hernia; acquired due straining leading to weakness in anterior abdominal ;incisional due to improper closure or wound infection and traumatic. The recurrence rate is more than 50% in case of incisional hernia after primary suture repair and it depends on nutritional status of patient , wound care etc.⁽²⁾ Due to availability of meshes this recurrence rate has come down to about been reduced to 10–23%.⁽³⁾⁽⁴⁾

Aim

- To compare the ventral hernia repair by laparoscopic surgery versus open surgical repair.

Objectives

To compare

- Duration of both procedure
- Mean hospital stay.
- Post-operative surgical complications and recurrence

Materials and Methods

30 patients including 22 female and 8 males were enrolled in this study who presented to surgical department at Dhiraj Hospital with ventral hernia between December 2017-July 2020. After admission detailed history was taken and patients were randomly divided in to 2 groups.

Inclusion criteria:

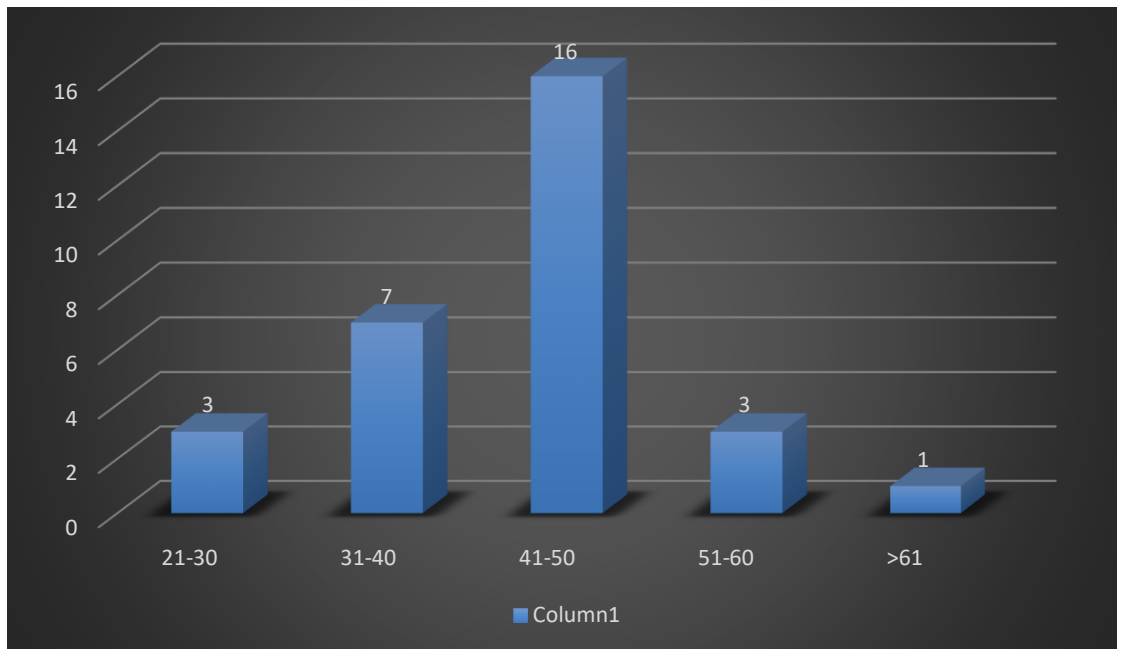
1. Age more than 20 years
2. Hernial defect < 8 cm

Exclusion criteria:

1. Less than 20 years of age
2. Hernial defect >8 cm
3. Strangulated hernia
4. Recurrence

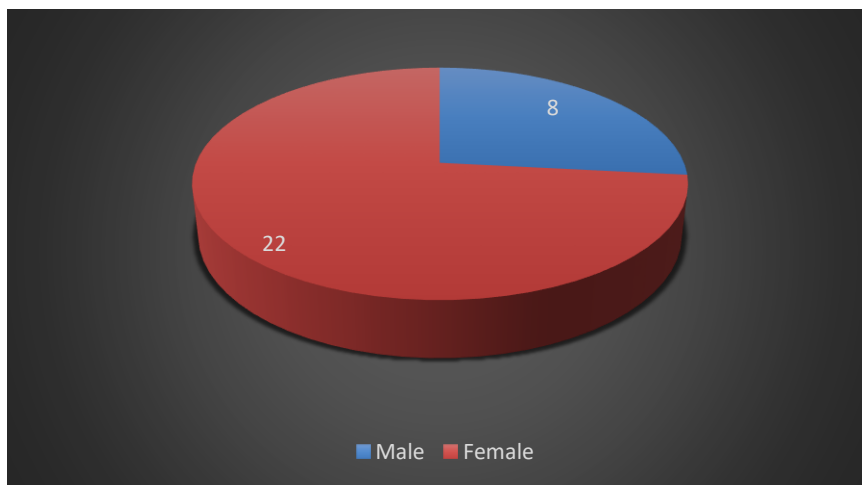
Results

1. Age Distribution:



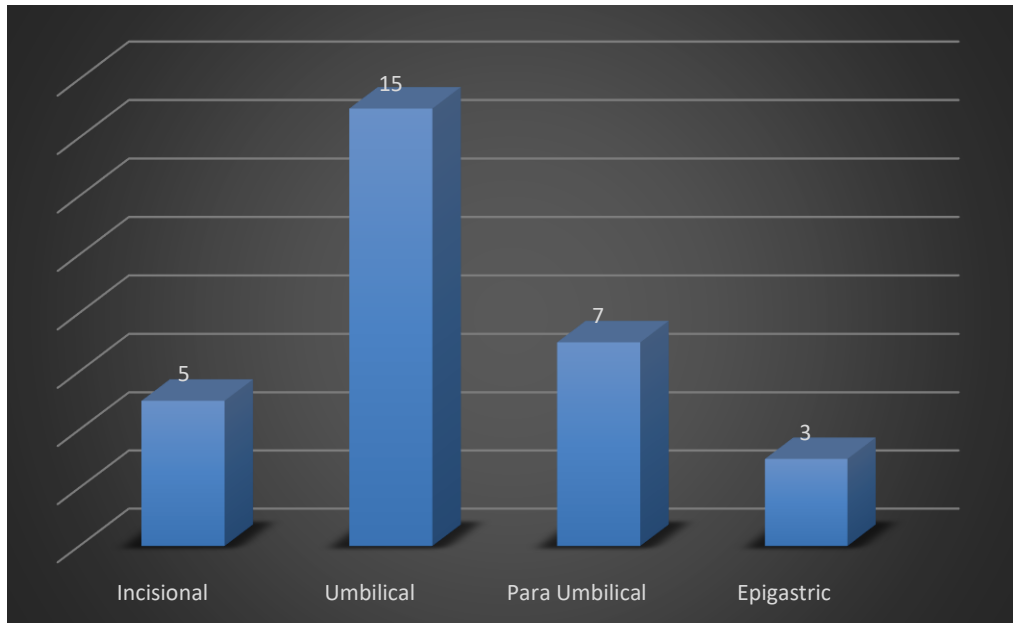
Mean age of patient in present study was 42.4 years which is comparable to Mehta et al study⁽⁵⁾.

2. Sex Distribution



Female predominance was found in present study.

3. Type of Hernia



Most common was umbilical hernia(15 patients) in present study followed by para umbilical (7 patients) , incisional (5 patients) and epigastric(3patients).

4. Mean Operative time

Mean Operative Time	Open Surgery	Laparoscopic Surgery
Minutes	60.25± 2.43	80±3.44

Mean operative time in open surgery was more compared to laparoscopic surgery but it depends on surgeons experience.

5. Mean Hospital Stay

Mean Hospital Stay	Open Surgery	Laparoscopic Surgery
Days	5.5	3.5

Mean Hospital stay in open surgery was 5.5 days i.e more compared to laparoscopic surgery (3.5 days) which may be related to postoperative pain in open surgery.

6. Post operative complications

Complications	Open Surgery	Laparoscopic Surgery
Seroma	5	1
Bowel Injury	0	0

Surgical Site Infection (SSI)	7	0
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7 patients in open surgery developed SSI while 5 patients developed seroma who were managed conservatively. 1 patient in laparoscopic surgery developed port site seroma which was managed conservatively.

Discussion

Mean age of patient in present study was 42.4 years. In Rulaniya S et al study ⁽⁶⁾, the mean age is comparable was 53 yrs in open group and 48.5yrs in laparoscopy group. In Rulaniya S et al study ⁽⁶⁾ the mean age of the patients in open group is 45.2 yrs and laparoscopy group is 45.96 yrs. This suggests most productive age group involved.

Female predominance was found in present study. In Rulaniya S et al study ⁽⁶⁾, most of the patients were females in both open (80%) and laparoscopy groups (80). This suggests female were more prone to disease which may be attributed to injury to abdominal wall during labor.

Mean operative time in laparoscopic surgery was 80±3.44 compared to 60.25± 2.43 open surgery. In Rulaniya S et al study ⁽⁶⁾ laparoscopic procedure has taken a mean of 93.25(±14.44) minutes as compared to open mesh repair which has taken 88.75(±12.34) minutes similar observations have also been reported by other studies.

Mean Hospital stay in open surgery was 5.5 days i.e more compared to laparoscopic surgery (3.5 days). 7 patients in open surgery developed SSI while 5 patients developed seroma who were managed conservatively. In Rulaniya S et al study ⁽⁶⁾, there was significant reduction in incidence of post operative wound infection/ trocar site cellulitis in laparoscopic group (5%) as compared to open group (30%).

Conclusion

Laparoscopic meshplasty is better than open repair in terms of early recovery, less pain, minimal scar, early return to work.

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