

## Original Research

### Laparoscopic and open repair of para-umbilical hernia

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#### ABSTRACT:

**Background:** A para-umbilical hernia (PUH) is a type of abdominal hernia that occurs near the belly button (umbilicus). The present study was conducted to compare laparoscopic and open repair of para-umbilical hernia. **Materials & Methods:** 70 patients of para-umbilical hernia of both genders were divided into 2 groups of 35 each. Group I underwent laparoscopic surgery and group II underwent open surgery. Parameters such as hernia size, operating time (min), length of stay (hours), blood loss (cc) and complications were compared. **Results:** Group I had 18 males and 17 females and group II had 16 males and 9 females. Hernia size (cm<sup>2</sup>) was 19.2 and 16.4 in group I and group II respectively. The mean operating time (min) was 62.4 and 81.5, length of stay (hours) was 29.4 and 90.2, blood loss (cc) was 21.6 and 32.5 in group I and group II. Haematoma was seen in 1 and 3, seroma 0 and 1 and infection in 2 and 5 patients respectively. The difference was significant (P < 0.05). **Conclusion:** Laparoscopic repair of PUH is safe and effective procedure when compared to open PUH repair. Laparoscopic repair is much better than open repair due to less postoperative morbidity.

**Keywords:** para-umbilical hernia, Haematoma, seroma

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#### INTRODUCTION

A para-umbilical hernia (PUH) is a type of abdominal hernia that occurs near the belly button (umbilicus). It happens when there is a weakness or hole in the abdominal wall, allowing internal tissues or organs, like fatty tissue or part of the intestines, to push through. As the name suggests, PUH occurs next to the umbilicus (belly button), often above or below it.<sup>1</sup>

It can also develop naturally, especially in people who are older or have a family history of hernias. It may be due to weakness in the abdominal wall, often due to prior surgeries or conditions that strain the abdomen (like pregnancy, obesity, or chronic coughing). A visible bulge or lump near the belly button, which may be more noticeable when coughing, bending, or lifting heavy objects. In some cases, there may be discomfort or pain at the site. If the hernia becomes incarcerated (stuck) or strangulated (blood supply cut off), it can lead to severe pain and require emergency surgery.<sup>2</sup>

Due to a higher rate of wound infection and wound-related problems in open mesh repair, researchers are still trying to figure out the best way to treat pressure ulcers (PUH), which is why laparoscopic surgery is

being used by surgeons. Traditionally, open suture techniques like MAYO repair and its variants have been used to treat minor PUH (less than 3 cm), but the recurrence rate is high—more than 20%.<sup>3</sup> Prosthetic mesh open repairs typically include sufficient subcutaneous dissection, flap elevation, and drain insertion, and there is a higher risk of wound complications such as infection. There is mounting evidence that laparoscopic PUH repair is better than open mesh repair in terms of overall morbidity and mortality, postoperative discomfort, and operational and postoperative complications.<sup>4</sup> The present study was conducted to compare laparoscopic and open repair of para-umbilical hernia.

#### MATERIALS & METHODS

The study was carried out on 70 patients of para-umbilical hernia of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 35 each. Group I underwent laparoscopic surgery and group II underwent open surgery. Parameters such as hernia size, operating time (min), length of stay (hours),

blood loss (cc) and complications were compared. analysis. P value < 0.05 was considered significant. Results thus obtained were subjected to statistical

**RESULTS**

Groups	Group I	Group II
Method	laparoscopic surgery	open surgery
M:F	18:17	16:19

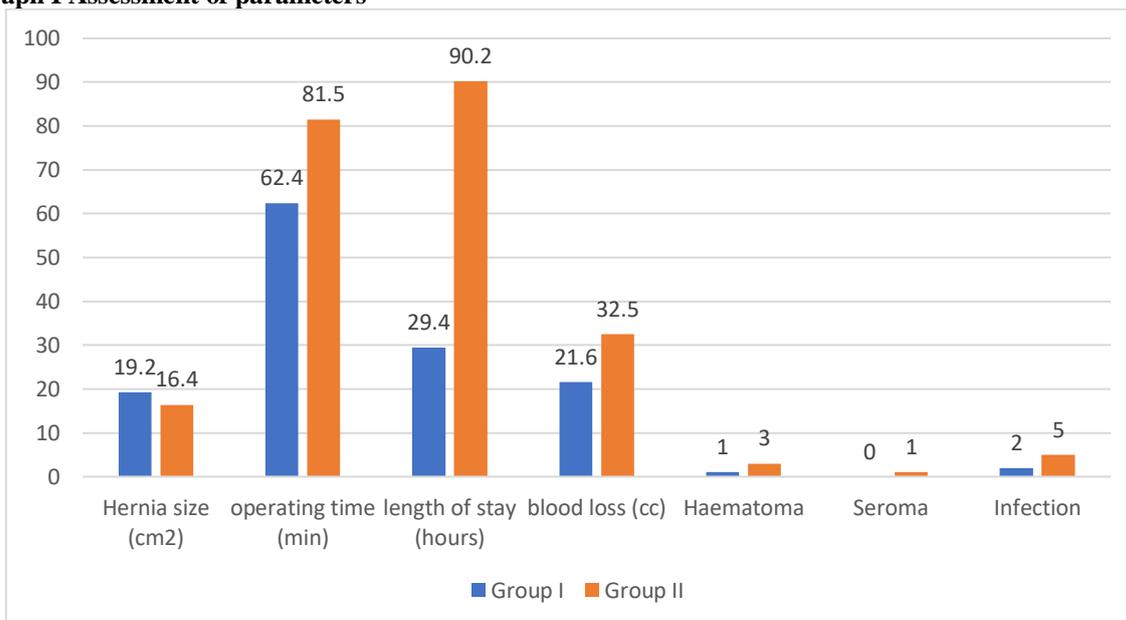
Table I shows that group I had 18 males and 17 females and group II had 16 males and 9 females.

**Table II Assessment of parameters**

Parameters	Group I	Group II	P value
Hernia size (cm <sup>2</sup> )	19.2	16.4	0.16
operating time (min)	62.4	81.5	0.04
length of stay (hours)	29.4	90.2	0.01
blood loss (cc)	21.6	32.5	0.02
Haematoma	1	3	0.05
Seroma	0	1	0.91
Infection	2	5	0.04

Table II, graph I shows that hernia size (cm<sup>2</sup>) was 19.2 and 16.4 in in group I and group II respectively. The mean operating time (min) was 62.4 and 81.5, length of stay (hours) was 29.4 and 90.2, blood loss (cc) was 21.6 and 32.5in group I and group II. Haematoma was seen in 1 and 3, seroma in 0 and 1 and infection in 2 and 5 patients respectively. The difference was significant (P< 0.05).

**Graph I Assessment of parameters**



**DISCUSSION**

The umbilicus is one of the potential weak areas of the abdomen and a relatively common site of herniations. Umbilical hernias occur more frequently in women, and obesity and repeated pregnancies are common precursors. They have received little attention in comparison with other types of hernias of the abdominal wall.<sup>5</sup> The technique described by Mayo in 1901 is the classic method for umbilical hernia repair, consisting of “vestover-pants” imbrication of the superior and inferior aponeurotic segments.<sup>6</sup> Currently, this technique is infrequently used. For parietal defects smaller than 3 cm in diameter, a primary closure is the preferred technique

for most surgeons.<sup>7,8,9</sup> For defects larger than 3 cm, a repair with prosthetic material similar to the technique for incisional hernias is recommended.<sup>10</sup>The present study was conducted to compare laparoscopic and open repair of para-umbilical hernia.

We found that group I had 18 males and 17 females and group II had 16 males and 9 females. compare the early complications of open repair with laparoscopic repair of PUH. KorukondaS et al<sup>11</sup> compared the post-operative hospital stay of open repair with laparoscopic repair of PUH. Out of 40 patients with PUH, 20 received open meshplasty and 20 patients received laparoscopic meshplasty. Postoperative pain and length of hospital stay is significantly less in

laparoscopic PUH repair. Postoperative complications like wound infection, seroma, and haematoma are relatively less in laparoscopic group though statistically not significant.

We found that hernia size (cm<sup>2</sup>) was 19.2 and 16.4 in group I and group II respectively. The mean operating time (min) was 62.4 and 81.5, length of stay (hours) was 29.4 and 90.2, blood loss (cc) was 21.6 and 32.5 in group I and group II. Haematoma was seen in 1 and 3, seroma 0 and 1 and infection in 2 and 5 patients respectively. Gonzalez R et al<sup>12</sup> in their study, of the 76 patients identified, 32 underwent laparoscopic repair (LR), 24 primary suture repairs (PSR), and 20 open repairs with mesh (ORWM). Preoperative characteristics were similar between groups. Hernia size was similar between LR and ORWM groups, and both were larger than that in the PSR group. ORWM compared with the other techniques resulted in longer operating time, more frequent use of drains, higher complication rates, and prolonged return to normal activities (RTNA). The length of stay (LOS) was longer in the ORWM than in the PSR group. When compared with ORWM, LR resulted in lower recurrence rates. LR resulted in fewer recurrences in patients with previous repairs and hernias larger than 3 cm than in both open techniques.

Wright BE et al<sup>13</sup> determined any advantages to laparoscopic mesh repair of umbilical hernias. A retrospective review was made of patients undergoing umbilical hernia repair. Patients were categorized into three groups: laparoscopic repair with mesh, open repair with mesh, and open repair without mesh. Comparative analysis was performed. One-hundred and sixteen umbilical hernia repairs were performed in 112 patients: 30 laparoscopic mesh repairs, 20 open mesh repairs, and 66 open non-mesh repairs. The laparoscopic technique was used for larger defects and took more time with a trend toward fewer postoperative complications and recurrences.

The shortcoming of the study is small sample size.

## CONCLUSION

Authors found that laparoscopic repair of PUH is safe and effective procedure when compared to open PUH repair. Laparoscopic repair is much better than open repair due to less postoperative morbidity.

## REFERENCES

1. Muschaweck U. Umbilical and epigastric hernia repair. *Surg Clin North Am.* 2003;83(5):1207–21.
2. White TJ, Santos MC, Thompson JS. Factors affecting wound complications in repair of ventral hernias. *Am Surg.* 1998;64(3):276–80.
3. Forbes SS, Eskicioglu C, McLeod RS, Okrainec A. Meta-analysis of randomized controlled trials comparing open and laparoscopic ventral and incisional hernia repair with mesh. *Br J Surg.* 2009;96(8):851–58.

4. Bucher P, Pugin F, Morel P. Single port laparoscopic repair of primary and incisional ventral hernia. *Hernia.* 2009;13(5):569–70.
5. Jagad RB. Laparoscopic ventral hernia repair: a new method for fixation of the mesh with sutures. *SurgLaparoscEndoscPercutan Tech.* 2008;18(3):277–79.
6. Mayo WJ. VI. An Operation for the Radical Cure of Umbilical Hernia. *Ann Surg.* 1901;34(2):276–80.
7. Cassie S, Okrainec A, Saleh F, Quereshy FS, Jackson TD. Laparoscopic versus open elective repair of primary umbilical hernias: short-term outcomes from the American College of Surgeons National Surgery Quality Improvement Program. *SurgEndosc.* Springer US; 2014;28(3):741–46.
8. Othman IH, Metwally YH, Bakr IS, Amer YA, Gaber MB, Elgohary SA. Comparative study between laparoscopic and open repair of paraumbilical hernia. *J Egypt Soc Parasitol.* 2012;42(1):175–82.
9. Sanjay P, Reid TD, Davies EL, Arumugam PJ, Woodward A. Retrospective comparison of mesh and sutured repair for adult umbilical hernias. *Hernia.* 2005;9(3):248–51.
10. Arroyo A, García P, Pérez F, Andreu J, Candela F, Calpena R. Randomized clinical trial comparing suture and mesh repair of umbilical hernia in adults. *Br J Surg.* 2001;88(10):1321–23.
11. Korukonda S, Amaranathan A, Ramakrishnaiah VP. Laparoscopic versus open repair of Para-umbilical Hernia-A prospective comparative study of short term outcomes. *Journal of clinical and diagnostic research: JCDR.* 2017 Aug;11(8):PC22.
12. Gonzalez R, Mason E, Duncan T, Wilson R, Ramshaw BJ. Laparoscopic versus open umbilical hernia repair. *JSLs J Soc Laparoendosc Surg. Society of Laparoendoscopic Surgeons;* 2003;7(4):323–28.
13. Wright BE, Beckerman J, Cohen M, Cumming JK, Rodriguez JL. Is laparoscopic umbilical hernia repair with mesh a reasonable alternative to conventional repair?. *The American journal of surgery.* 2002 Dec 1;184(6):505-8.