



TO STUDY DIFFERENT MODALITIES OF VENTRAL HERNIA REPAIR

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ABSTRACT **Aim:** To Study different modalities of ventral hernia repair . **Study design-** This is a retrospective observational study of patients treated at Tertiary health Care Centre, Pune. **Type of study-** Retrospective observational study. **Period of study-** July 2020 to July 2022. **Sample size** -Total 110 patients included in this study out of which 30 were treated laparoscopically ,30 ventral hernias were repaired by open sublay mesh repair ,50 ventral hernia repair was done by open onlay mesh repair surgery. **Conclusion:** Considering least post operative complication rates laparoscopic ventral hernia repair surgery is best inspite of its higher cost .

KEYWORDS : Laparoscopic umbilical and para-umbilical hernia repair, incisional hernia repair ,ventral hernia repair, .

INTRODUCTION: Ventral hernia being the second most common type of hernias, after inguinal hernias account for approximately 10% of all hernias. A ventral hernia is a protrusion of abdominal viscus through the anterior abdominal wall occurring at any site other than the inguinal and femoral areas.[1] It's the defect in the anterolateral abdominal wall which may be congenital of acquired through which there is intermittent or continuous protrusion of preperitoneal fat , intestinal contents or rarely abdominal viscus . They can be congenital or acquired.

Epigastric hernias occur from xiphoid process to umbilicus, umbilical hernias at the umbilicus and hypogastric hernias are rare spontaneous hernias that occur in midline below the umbilicus . In adults, about 60% of hernias are acquired as a result of previous surgery hence the term incisional hernias. The open approach remains the standard technique for ventral hernia repair. However, the rate of its recurrence and morbidity is high. The laparoscopic ventral hernia repair has potentially replaced open repair nowadays[2]. Laparoscopic ventral hernia repair has been reported to have decreased recurrence rates, minimal surgical site infections, and a lesser hospital stays compared to that of open repair .

Based on national operative statistics, Incisional and para-umbilical hernias which constitute about 85% of the overall ventral abdominal hernias are most commonly present[3]. In adults the cause is usually acquired and incidence is more in females. Female to male ratio 3:1[4]. Several technical and patient-related factors have been linked to the occurrence of incisional hernias. Hernia is one of the common surgical problems. Repair of ventral hernia is one of the most common surgical procedures worldwide.

There is no ideal operative procedure for ventral hernia repair without any complications that are, postoperative pain, postoperative infections, recurrence and cost effectiveness. Each type of repair had its own advantages and disadvantages. The laparoscopic repair of ventral hernia, a relatively newer modality, has been around only for a little over a decade. Better patient comfort, allowing tension free repair with earlier return to daily activities, less complication rates and less recurrence rate are some of the claimed advantages of this technique. [9-10]. Laparoscopic ventral hernia repair has emerged as an alternative to open procedure. Hence this prospective study comparing laparoscopic ventral hernia repairs with open ventral hernia repairs.[5]

AIM

To study different modes of presentations of the ventral hernias.
To study the different methods of surgical repair of ventral hernias including newer methods.

To study different complication rates .

METHODS

This is retrospective, observational study of patients treated at tertiary care hospital ,Pune , Maharashtra .This study was conducted from July 2020 to July 2022 with complete knowledge and consent .

Total 110 patients included in this study out of which 30 were treated laparoscopically ,30 ventral hernias were repaired by open sublay mesh repair ,50 ventral hernia repair was done by open onlay mesh repair surgery.

Inclusion criteria-

Patients with the age 15 -70 years presenting with uncomplicated ventral hernias were included in the study.

Exclusion criteria-

Pregnant women.
Patients with complicated ventral hernia. (Obstructed, incarcerated, strangulated, recurrent).

Thorough clinical history and examination of the patients was performed. Investigations were done which include d radiological investigations like Complete blood count, Renal function test, Liver function test, HIV and HBsAg, USG and CT scan . Postoperatively, both the groups were given VAS score card to express the intensity of pain on POD 2 and was recorded. Post-operative day of mobilization and post-operative day of discharge was noted. Patients were assessed again at 2 weeks and at 4 weeks during follow up using the VAS score card for pain intensity charting, day of return to work and complications (if any) were also recorded

RESULTS

Table 1: Types of ventral hernia and prevalence.

Diagnosis	Male	Female
Incisional hernia	22	38
Paraumbilical hernia	8	15
Umbilical hernia	7	10
Epigastric hernia	6	4

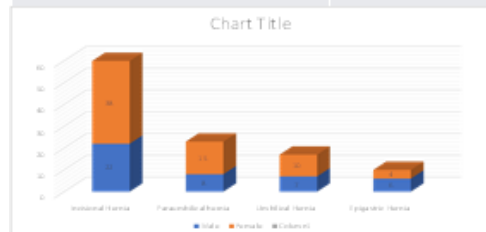


Figure 1: Types of ventral hernia and prevalence.

Incisional hernia was the most common presentation among the patients of ventral hernia accounting for 54% of the cases followed by Paraumbilical hernia (20%), umbilical hernia (15 %) and epigastric hernia (9%).

Age distribution :

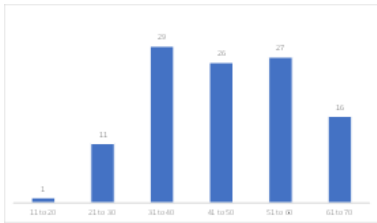


Figure 2. shows that more than 50% of the cases were recorded in the age group between 31-60 years followed by the age group >60 years and the age group <25 years. Moreover, number of female cases was slightly higher than male cases

Duration of surgery :

Table 2

Open sublay mesh repair	Open onlay mesh repair	Laparoscopic mesh repair
72 min	64 min	104 min

Mean duration of open sublay mesh repair is 72 mins while open onlay mesh repair is 64 mins and mean duration of laparoscopic mesh repair is 104 mins.

Postoperative pain :

Table 3 : VAS score

Procedure	Mean VAS Score
2 Days	
Open	6.14
Laparoscopic	3.81
14 days	
Open	3.77
Laparoscopic	1.52

As shown in Table 3, shows a statistically significant difference between the VAS score between the two. It was found to less in individuals who got surgery by a laparoscopy when compared with open approach.

Post operative complications :

Table 4: post operative complications :

Complications	Open onlay mesh repair (50)	Open sublay mesh repair (30)	Laparoscopic mesh repair (30)
Seroma formation	13	5	2
Flap necrosis	8	3	0
Wound dehiscence	4	2	0

Of total cases, it is observed that 20 cases had seroma formation out of which 18 were underwent open surgery and 2 underwent laparoscopic hernia repair surgery .

Flap necrosis was found in 11 cases all were open ventral hernia repair cases. Wound dehiscence found in 6 cases all were treated by open hernia repair surgery.

DISCUSSION

This present study is a retrospective study with 110 cases of ventral hernia selected randomly from the cases admitted to the Department of General Surgery at Tertiary Care Hospital ,Pune ,Maharashtra from July 2020 -July 2022. The overall sex ratio distribution in this study showed that ventral hernias in females were 67(60%) and males were 43(40%) patients. Female to male ratio being approximately 3:2. There are 82 cases (74%) between the age range of 31 to 60 years. Distribution of the study subjects in our study according to the presence of co morbidities revealed that majority of the cases had diabetes mellitus followed by (64.8%)hypertension(55%).

From the study it was observed that patients with ventral hernias most commonly presented with symptom of swelling over the abdomen, followed by pain associated with swelling. Patient had dull aching dragging pain. In the present study previous surgeries 60 (54%) cases were found to be most common risk factor.

Ponka JL in his book stated that females presented more with ventral hernias after the gynecological procedures. [6]

Spangen suggested a variety of different predisposing factors such as the presence of inguinal or abdominal wall scars that could weaken the abdominal wall aponeurosis. This was supported by the fact that previous operations were found in 50% of all his cases. [7] According to our study we have found 54% patient had previous history of surgery .

Our study reported that the mean VAS score among the patients who underwent laparoscopic surgery was lesser than the patients who underwent open surgery.

Moreover, a significant difference was found between VAS and the procedure of surgery.

Itani et al also showed that pain measured using visual analogue score on 3rd post-operative day showed decreased pain score in laparoscopic group (mean 2.23) compared to open group (mean 6.23).[8]

The present findings also reported that the quality of life among the patients who underwent laparoscopic surgery was better as compared to open surgery. Variables like period of mobilization, days of returning to work was lower in the patients who underwent laparoscopic surgery as compared to the patients who underwent open surgery.

Of total cases ,it is observed that 20 cases had seroma formation out of which 19 were underwent open surgery and 2 underwent laparoscopic hernia repair surgery .Followed by flap necrosis and wound dehiscence.

CONCLUSION

From the present study we conclude that, between laparoscopic and open ventral hernia repairs, laparoscopic hernioplasty takes a little longer operation time than open hernia repair. Post-operative pain, analgesic requirements on the day of surgery and during post-operative course was less in laparoscopic group as compared to open group. Postoperative morbidity in terms of complications like seroma formation, wound infection is comparatively less in laparoscopic group as seen with open group. There is significant reduction in hospital stay, return to daily and normal activities in patients underwent lap hernia repair. We concluded that among ventral hernia repair surgeries though more patients operated by onlay mesh repair while sublay mesh repair is technically difficult yet have less complication rate. Considering least post operative complication rates laparoscopic ventral hernia repair surgery is best inspite of its higher cost.

REFERENCES

1. Townsend RC, Beauchamp BD, Mattox MEK. Clinical surgery of hernia. Sabiston Textbook of Surgery, 19th Edition, Volume II, Elsevier; 2016:1128
2. Lanzafame RJ, Stadler I, Brondon P, Soltz BA, Devore DP. Preliminary assessment of postoperative adhesion formation after laser assisted mesh fixation to the peritoneal surface. J Laparoendoscopic Adv Surg Tech A. 2005;15(2):105-11
3. Rab AZ, Fakir SB, Peethamban MS. Traumatic ileal perforation in post-traumatic ventral hernia: adding insult to injury. J Coll Physicians Surg Pak. 2007;17:756-7.
4. Zinner J, Ashley W. Chapter 4. Hernias, Maingot's abdominal operations. 11th ed. USA: McGraw-Hill; 2007: 122.
5. Moreau PE, Helmy N, Vons C (2012) Laparoscopic treatment of incisional hernia. State of the art in 2012. J Visc Surg 149(5 Suppl):e40–e48
6. Ponka JL. Hernias of the Abdominphia. PA: WB Saunders; 1981.
7. Spangen L. Spigelian hernia. World J Surg. 1989;13:573-80.
8. Itani KM, Hur K, Kim LT, Antony T, Berger DH, Reda D et al. Comparison Of Laparoscopic and Open Repair with Mesh For Treatment Of Ventral Incisional Hernia. Arch Surg. 2010;145(4):322-8
9. Hwang CS, Wichterman KA, Alfrey EJ. Laparoscopic ventral hernia repair is safer than open repair: analysis of the NSQIP data. J Surg Res. 2009; 156 (2): 213–216 [PubMed] [Google Scholar]
10. Bencini L, Sanchez LJ, Bernini M, et al. Predictors of recurrence after laparoscopic ventral hernia repair. Surg Laparosc Endosc Percutan Tech. 2009; 19 (2): 128–132 [PubMed] [Google Scholar]