



## LARGE VENTRAL HERNIA PRESENTATION AND MANAGEMENT

## Surgery

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## ABSTRACT

**INTRODUCTION:** Common types of ventral hernia are- epigastric hernia, umbilical hernia, para-umbilical hernia and incisional hernia. Surgical treatment is only curative option.

**MATERIAL AND METHODS:** 30 patients of ventral hernia getting surgically treated in Patliputra Medical College, Dhanbad were observed and their details were recorded and analyzed.

**RESULTS AND CONCLUSION:** Ventral hernia is more common in females. Incisional hernia is most common variety. Small hernia can be repaired with suture alone and mesh is required for large defect.

## KEYWORDS

Ventral Hernia, Epigastric Hernia, Umbilical Hernia, Paraumbilical Hernia, Incisional Hernia

## INTRODUCTION

The term Ventral hernia refers to hernias of the anterior abdominal wall. Inguinal and femoral hernias are not included. Common types of ventral hernia are- Umbilical-paraumbilical, Epigastric, Incisional, Parastomal, Spigelian, Lumbar and Traumatic.<sup>1</sup> Defect at the site of umbilicus is present at birth but it closes usually within a week of birth. Delay in closure of umbilical defect or reopening of the defect can give rise to umbilical hernia. Umbilical hernia, according to The European Hernia Society classification for primary abdominal wall hernias<sup>2</sup>, is defined as the midline hernias from 3 cm above to 3 cm below the umbilicus. Reopening of umbilical defect can occur in few conditions like- pregnancy, obesity and liver disease with cirrhosis.<sup>3</sup> Epigastric hernia can develop in midline extending from xiphoid process above to the umbilicus below. Although originally considered a congenital defect, it is considered an acquired lesion.<sup>4</sup> Hernia defect here is very small (generally <1 cm in diameter) and contains extraperitoneal fat. Very rarely peritoneal sac can be seen in large epigastric hernias. Incisional hernia develops in the abdominal wall at the site of previous surgery. Predisposing factors for incisional hernia development are- 1) patient factors: obesity, malnutrition, immunosuppression, chronic cough, cancer 2) wound factors: poor quality tissues, wound infection and 3) surgical factors: inappropriate suture material, incorrect suture placement.<sup>5</sup> Treatment of ventral hernia is surgical. Surgery can be done by open method or laparoscopic methods. Small hernia defect is generally repaired without mesh reinforcement whereas in larger defects mesh is used.

## MATERIAL AND METHODS

This is a prospective observational study done in department of general surgery Patliputra medical college, Dhanbad, Jharkhand, over a period of 1 year (February 2019 to January 2020). Total 30 cases of ventral hernia who were treated surgically in department of general surgery, PMCH, Dhanbad, were included in this study. Exclusion criteria- 1) recurrent cases 2) inguinal and femoral hernia 3) pediatric age group. All the patients were explained about the study and written consent was taken from them for their participation in this study. Diagnosis of ventral hernia is mainly clinical. Imaging investigations were used to support the diagnosis, to determine the size of the defect and to identify the content of the hernia sac. Ultrasonography was the imaging modality used in this study for above mentioned purposes. Other investigations were done to determine the fitness of the patient for surgery. For hernia cases with small defect of diameter less than 2 centimeters, suture repair (with non-absorbable polypropylene suture) of the defect was done and those with defect diameter of >2 centimeters, mesh hernioplasty was done. Postoperative events and complications, if any, were monitored and patients discharged when

stable. Post-discharge monthly follow-up for 3 months was done to exclude any recurrence. All data obtained was recorded in preformed data collection sheet. Statistical analysis was done using Medcalc software.

## RESULTS

## Age Distribution Of Study Population

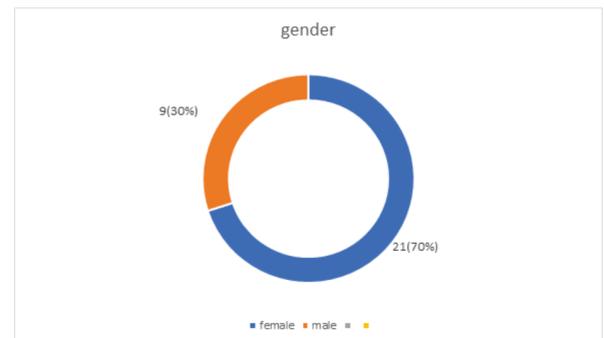
In this study out of 30 patients of ventral hernia, 2 were younger than 20 years of age, 9 were in 20-30 years age group, 11 were in 30-40 years age group, 7 were in 40-50 years age group and only 1 patient was older than 50 years of age. All 2 patients of <20 years age group were patients of umbilical/paraumbilical hernia.

**Table 1: Age Distribution Of Study Population**

| Age groups  | number of patients |
|-------------|--------------------|
| <20 years   | 2                  |
| 20-30 years | 9                  |
| 30-40 years | 11                 |
| 40-50 years | 7                  |
| >50 years   | 1                  |

## Sex Distribution Of Study Population

out of total 30, only 9 were male patients and rest 21 were female patients.



**Chart 1: Gender Distribution Of Study Population**

## Frequency Of Different Types Of Hernia

Out of 30, 9 cases were of epigastric hernia, 7 cases were of umbilical/paraumbilical hernia and 14 cases were of incisional hernia. Out of these 14 cases of incisional hernia, 6 cases developed after bilateral tubal ligation (BLTL), 5 cases developed after lower segment caesarean section (LSCS), 2 cases developed after open cholecystectomy and 1 case developed after open appendectomy.

**Table 2: Frequency Of Different Types Of Ventral Hernia In This Study**

| Type of hernia                   | Number of patients   |                    |            |
|----------------------------------|----------------------|--------------------|------------|
| Epigastric hernia                | 9 (30%)              |                    |            |
| Umbilical & Paraumbilical hernia | 7 (23.3%)            |                    |            |
| Incisional hernia                | Previous Surgery     | Number of patients | 14 (46.6%) |
|                                  | BLTL                 | 6                  |            |
|                                  | LSCS                 | 5                  |            |
|                                  | Open Cholecystectomy | 2                  |            |
|                                  | Open Appendectomy    | 1                  |            |
| Total                            | 30                   |                    |            |

**Gender-wise Frequency Of Each Hernia Type**

All 14 cases of incisional hernia were female, out of 9 cases of epigastric hernia 5 were male and 4 were female and out of 7 cases of umbilical/paraumbilical hernia 4 were male and 3 were female.

**Table 3: Gender-wise Frequency Of Various Types Of Ventral Hernia**

| Sex    |                                  |    | Total |
|--------|----------------------------------|----|-------|
| Female | Epigastric Hernia                | 4  | 21    |
|        | Umbilical & Paraumbilical hernia | 3  |       |
|        | Incisional hernia                | 14 |       |
| Male   | Epigastric Hernia                | 5  | 09    |
|        | Umbilical & Paraumbilical hernia | 4  |       |
|        | Incisional hernia                | 0  |       |
| Total  |                                  |    | 30    |

**Size Of Hernia Defect**

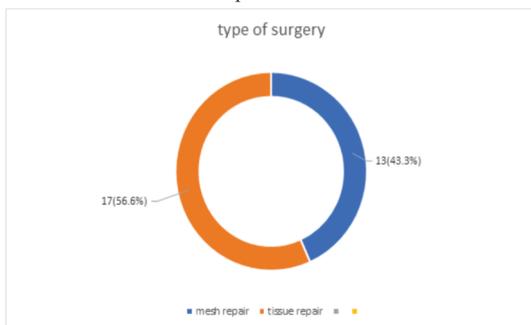
As determined by ultrasonography the diameter of abdominal defect was smaller than 2 centimeters in 17 cases and 12 cases size of the defect was 2-5 centimeters wide. In one case defect size was more than 5 centimeters. No case of giant ventral hernia (defect size >10 centimeters) was present in this study.

**Table 4: Size Of The Hernia Defect And Number Of Patients**

| size of defect | number of patients |
|----------------|--------------------|
| <2 cms         | 17 (56.6%)         |
| 2cms-5 cms     | 12 (40%)           |
| >5 cms         | 1 (3.3%)           |

**Mesh Versus Tissue Repair-**

All 9 cases of epigastric hernia in this study were repaired with non-absorbable polypropylene suture, out of 7 cases of umbilical/paraumbilical hernia 2 cases (where defect size was more than 2 centimeters) were repaired using mesh hernioplasty and 5 were repaired without mesh using polypropylene sutures only. 11 cases of incisional hernia were repaired with mesh reinforcement and 3 cases of incisional hernia were tissue repaired.



**Chart 2: Type Of Surgery Employed For Treatment In Study population**

**Post-operative Complication-**

In all 30 cases no major post-operative complication was seen. Both mesh hernioplasty as well as tissue repair patients recovered satisfactorily and no recurrence was noted during follow-up period of 3 months.

**DISCUSSION:**

In our study incidence of ventral hernia was more in female patients compared to males. Similar incidence in females has been seen in study

done by Malik AM et al .<sup>6</sup> In many studies, most common ventral hernia is incisional hernia followed by umbilical/paraumbilical hernia and epigastric hernia.<sup>7,8</sup> In our study also incisional hernia is most common ventral hernia but epigastric hernia is the 2<sup>nd</sup> most common and umbilical/paraumbilical hernia is 3<sup>rd</sup> most common ventral hernia.

Incisional hernia develops at the site of abdominal wall closure following surgery and is seen in 11%-20% of uncomplicated wounds.<sup>9,10,11,12</sup> Similar to results of study by R. D. Jaykar et al , most common site for incisional hernia development in our study is at the incision site of BLTL (lower midline).<sup>13</sup> In study done by Dunja Kokotovic et al comparing efficacy of mesh vs non-mesh repair of incisional hernia, they concluded that "Mesh implantation prevented the need for subsequent reoperation in relatively few patients, suggesting that the benefits associated with the use of mesh are partially offset by long-term complications associated with its use. Larger, more complicated hernias are likely to be repaired with mesh, and small, simple hernias with little likelihood of long-term problems tend to be repaired without mesh".<sup>14</sup> In this study all ventral hernias with defect size larger than 2 centimeters (total 13 cases or 43.3% cases) were repaired with mesh reinforcement and rest 17(56.6%) cases with defect size less than 2 centimeters were repaired without mesh.

**CONCLUSION:**

In this study ventral hernia is more common in female sex and in middle aged population. Incisional hernia is most common variety of ventral hernia. Most of the ventral hernia coming to our institute were having defect size of <5 cms. Mesh hernioplasty of hernia with defect size >2cms and suture repair of hernia with defect size <2cms produces good surgical outcome. Longer follow-up duration and larger sample size is required to make firm conclusion.

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