



“VENTRAL HERNIAS IN BASAVESHWAR TEACHING HOSPITAL KALABURAGI: A PROSPECTIVE STUDY”

General Surgery

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ABSTRACT

Surgeons frequently deal with ventral hernias, which are defined as an extension of the abdominal viscus through the anterior abdominal wall at any point other than the inguinal and femoral sites. **Aims & Objectives:** The majority of surgeons advise having ventral hernias corrected as soon as they are found because there are not any prospective cohorts available to ascertain the natural course of untreated hernias. This research sets out to quantify the prevalence of ventral hernias in relation to age groups, genders, risk factors, complications, and clinical characteristics. displays as well as care. **Materials and Methods:** A prospective study was carried out at our tertiary care hospital from August 2022 to August 2023 (12 months). A total of 50 cases with anterior abdominal hernias—groin and posterior abdominal wall hernias excluded—were included in the study. Data were gathered by means of an extensive clinical examination and a comprehensive history. Data entry was done in the proforma calculated, and statistical software was used for analysis (SPSS 2015). **Results:** 5% of surgical admissions were related to ventral hernias. Of the ventral hernias, paraumbilical hernias were the most common type (48%). 36% of the cases were caused by an infra-umbilical midline herniation, and 18% of the cases were umbilical area herniations. The two main risk variables that were identified were obesity and constipation. Most flaws are small (more than 2 cm). Of the inlay mesh, 48% was fixed. **Conclusion:** This tertiary care institution conducted a study in which fifty cases of ventral hernias were examined. In the surgical ward, ventral hernias accounted for 5% of all admissions. The ratio of males to females was 1:17, with a mean age of 41. The average overall time spent on surgery in the sublay group was 75.4±9.23 minutes, while the onlay group's average was 63.7±10.58 minutes. It had a statistically significant difference ($p<0.05$).

KEYWORDS

Epigastric, Onlay, Sublay, Ventral hernia, Hernia

INTRODUCTION

A common condition known as ventral hernia is the protrusion of the abdominal viscus through the front abdominal wall at any location other than the inguinal and femoral sites come across by surgeons [1]. Hernias can manifest in a variety of ways. For example, they can be discovered by accident as bulging over a prior surgical scar or as symptoms that Indications and symptoms of intestinal blockage include discomfort, vomiting, abdominal distension, and constipation. Based on their position on the abdominal wall, these abnormalities can be classified as either acquired or spontaneous. Incisional hernias are the name given to acquired hernias because they usually develop following surgical incisions. Incisional, paraumbilical, umbilical, and epigastric hernias represent a substantial portion of patients, whereas the other hernias are uncommon and only make up a small percentage. Roughly 3 to 13 percent of laparotomy incisions are thought to develop an incisional hernia, a typical long-term consequence of abdominal surgery [2].

Its incidence, however, is more than 23% in patients whose laparotomy wound has become infected [3].

Due to the high frequency of ventral hernia presentations at our hospital, it was necessary to examine the illness in the different presentations to assess public knowledge. levels of the patients presenting to us, as well as to identify the most effective treatment approach within our configuration. The goal of the study is to learn more about the clinical manifestations of ventral hernias, risk factors that predispose people to develop them, various surgical repair techniques for ventral hernias, post-operative problems, and follow-up.

MATERIALS & METHODS

Between August 2022 and August 2023, a prospective study was conducted at our teaching hospital (12 months). The research comprised fifty cases in all. Individuals who participated in the study excluded individuals with posterior abdominal wall hernias, groin hernias, and those who were deemed unfit for surgery or did not get surgical intervention. Umbilical, incisional, and epigastric hernias are examples of ventral hernias. A comprehensive history and clinical examination were part of the data collection process. Routine radiographic (USG and chest X-ray) and laboratory (CBC, LFT, KFT, and BSL) examinations were performed on the patients. Patients underwent appropriate surgery using open surgical methods, and post-

operative problems were detected right away. Data entry, tabulation, and analysis were done on the proforma.

RESULTS

Between August 2022 and August 2023, ventral hernias accounted for approximately 5% of the 1,000 surgical ward admissions. The youngest patient in this trial was 12 years old, with the oldest being 76 years of age. At the presentation, the average age was 47. Umbilical hernias (22%), epigastric hernias (22%), and para-umbilical hernias (49%) were the most common types (18%). The age range of 41–50 years old has the highest prevalence.

The age range in which the greatest number of cases in our study occurred was 41 to 50 years old, with a mean age of 47. Twenty-one men and 29 women were involved in the fifty cases. Nine of the twenty-one male patients had an epigastric hernia. Para-umbilical hernias accounted for 20 of the 29 female instances of ventral hernias; umbilical hernias were the second most common kind (9 cases)

Table 1: Distribution of data according to age

AGE	No. Patients	Percentage
0-10	0	0
11-20	1	2
21-30	5	10
31-40	12	24
41-50	13	26
51-60	10	20
61-70	4	8
71-80	5	10

Table 2: Distribution of data according to gender

	Incidence	Percentage
Male	21	42
Female	29	58

The Size of the defect

At the time of presentation, the hernia defect measured the following:

Table 3: Distribution of data according to the size of the defect

Size of defect	No. of cases	Percentage
<2 cms	32	64
2-3 cms	12	24
>3cms	6	12

Patients who presented with small to moderate-sized abnormalities were reported to have a higher frequency of problems due to the narrow neck. The contents of the hernia sac would be compressed, causing irreducibility, blockage, and strangulation.

Presentation Style

The following are the complaints that the study's patients brought up:

Table 4: Distribution of data according to main complaints

Complaint	No. of cases	Percentage
Swelling with pain	27	54
Swelling	10	20
Swelling with irreducibility	13	26

The majority of patients showed up with pain and edema in the umbilicus or along the surgical scar from an earlier procedure.

Anatomic locations

The most prevalent type of ventral hernia in the current study was the Para umbilical hernia, which had an incidence of 46 percent. The majority of these took place in the infra-umbilical area.

Table 5: Anatomical site distribution

Anatomical Site	No. Cases
Paraumbilical Hernia infraumbilical	18
Paraumbilical Hernia Supraumbilical	6
Umbilical Hernia	9
Epigastric Hernia	11
Incisional Hernia	3

Obesity, smoking, and the incidence of ventral hernias are significantly correlated with constipation ($p < 0.001$). The statistical method was used to analyze the data using the chi-square test with other parameters using Microsoft Windows version 17 of the package for social science (SPSS) software. A significant p-value was one that was less than 0.05.

Duration of the surgical procedure

In the sublay group, the average overall time for surgery was 75.4 ± 9.23 minutes, while it was 63.7 ± 10.58 minutes in the significantly significant ($p < 0.05$) onlay group.

Table 6: Duration of Surgery

Type of Repair	Operation Time (Min)
Male	63.7
Female	75.4

Recovery from surgery and drain cleaning.

Each case had a suction drain installed. Compared to 3.5 ± 1.24 days, the sublay group's mean drainage duration (4.8 ± 0.99 days) was lower in contrast to the onlay group, which showed statistical significance. In the sublay group, the average length of hospital stay after surgery was 4.2 ± 1.51 days, while in the onlay group, it was 6.7 ± 1.46 days. This difference was statistically significant.

Table 7: Post-operation stay and drain removal

	Duration of Drain (in Days)	Postoperative Stay (In Days)
Onlay	4.8	6.7
Sublay	3.5	4.2

Problems following Surgery

The following problems happened in the current study during the recovery phase: Consequently, in this study, a recurrence rate of 6% was noted following a year of follow-up. The percentage of wound infections was 4%.

One percent requires sublay repair, and three percent requires onlay repair. Necrotic skin was removed, and sutures were made for two patients who had marginal suture line necrosis but no wound or mesh infection.

Table 8: Post-Operative Complications

Complications	No. of Patients
Seroma	3
Wound infection	2
Skin neerosis	2
Recurrence	3

DISCUSSION:

The following factors increase the risk of ventral hernia in women: a multiparous stretch of the anterior abdominal wall, a decrease in abdominal wall muscular tone, and the substitution of elastic fibers for collagen as risk factors for hernia formation. Comparable to another Indian study [4], incisional hernia was the most prevalent type of hernia in our investigation. However, in a retrospective analysis of 2389 individuals, Dabbas N et al. discovered that the most prevalent anterior abdominal wall hernias were para-umbilical and umbilical hernias [5]. The highest percentage of paraumbilical hernias (13%) was discovered by Malik AM et al. [6]. These were followed by epigastric and umbilical hernias.

Even following a repair, constipation has been identified as a key risk factor for impeding wound healing and initiating incisional hernia. This is analogous to the research by Ersoz et al. from the Ankara University of Medicine's Department of Surgery in Turkey [7].

After analyzing 109 cases of recurrent incisional hernias, the study concluded that the main risk factor for a late recurrence was persistent constipation. Right now, according to the study, with a frequency of 46%, incisional hernias are the most prevalent type of ventral hernias. The majority of the hernias that resulted from incisions were infra-umbilical midline incisions.

In actuality, research has not yet determined the ideal location for the material to be inserted; nonetheless, a few studies have demonstrated that meshes implanted with greater tensile strength, indicating a tighter anchoring to the abdomen wall, and improved and earlier integration (greater collagen deposition, capillary density, and cell accumulation) were seen in the abdominal aponeurotic layer [8, 9, 10].

According to a European investigation, the onlay approach exhibited notably greater problems in comparison to the sublay technique [11]. It is, therefore, safe to state that, based on considering the aforementioned factors, sublay is a superior procedure than onlay in terms of placement and total reduction in problems and morbidity [12].

Although there isn't much literature, an experimental investigation that used several parameters also demonstrated the superiority of the sublay approach. [13] Recurrence rates of approximately 10 percent are conceivable even after long-term follow-up [14].

Given the paucity of existing global literature and the current interest in mesh-based hernia surgery, this is all the more important.

CONCLUSION:

50 instances of ventral hernias were admitted to the Department of Surgery in the current study. We looked at our teaching hospital between August 2022 and August 2023, 5% of all surgical ward admissions were due to ventral hernias. The average age was almost 47 years old.

Hernias of the paraumbilical kind were the most prevalent. The primary symptom in 54% of the patients was edema accompanied by pain. Twenty percent of the patients' main complaint at admission was edema. The most frequent location for herniation was the infra-umbilical midline (36% of cases), which was followed by the epigastric region (22% of instances). Constipation and obesity were discovered to be the main risk factors that predispose someone. Seroma developed in 6% of patients. Four percent of cases had a wound infection.

The average total time needed for the procedure in the "sublay" group was 75.4 ± 9.23 minutes, while the "onlay" group's average was 63.7 ± 10.58 minutes. It was discovered to be highly significant statistically ($p < 0.05$). The additional dissection time required to create preperitoneal space can be used to explain the timing disparity. Getting adequate hemostasis is another time-consuming task. With the surgeon factor remaining constant, operational simplicity is primarily subjective and is influenced by the experience, exposure, and planning of the individual surgeon, as well as the level of assistance provided, conductive facilities like light, cautery, high-quality instruments, sutures, etc.

In addition to recurrence, excessive dissection and tissue handling are primarily responsible for other postoperative problems like seroma

development and wound infection. handled when repairing a hernia. 8 DueThe sublay group's mean duration was 4.2. to greater blood loss and thorough tissue dissection, the onlay group in this study had a somewhat higher risk of seroma formation.

We can indirectly infer the degree of morbidity in terms of postoperative problems from the length of the hospital stay. The sublay group's mean duration was 4.2, discovered to be statistically significant ($p < 0.05$), with 6.7 days in the onlay group and days in the other group. The onlay group had a higher recurrence rate at the one-year follow-up.

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