

Original research paper

## A study of ventral hernias in a tertiary care hospital: A case series study

<sup>1</sup>Dr. Chandrakumar PC, <sup>2</sup>Dr. Chitralkha, <sup>3</sup>Dr. Vishwajith K, <sup>4</sup>Dr. SV Sreeharsha

<sup>1</sup>Associate Professor, Department of General Surgery, VIMS, BALLARI, Karnataka, India

<sup>2,3</sup>Junior Resident, Department of General Surgery, VIMS, BALLARI, Karnataka, India

<sup>4</sup>Associate professor, Department of Neurosurgery, VIMS, BALLARI, Karnataka, India

### Corresponding Author:

Dr. SV Sreeharsha

### Abstract

The most common presentation for which the patient comes to the surgeon is abdominal swelling, while second most common being pain over the swelling<sup>5</sup>. Ventral hernias are a common condition presenting to our tertiary hospital. Less data is available as to its natural history and hence surgeons prefer surgical treatment as there are few prospective cohort studies available. All patients with clinically diagnosed cases of ventral hernia were included and patients were subjected to ultrasonography of abdomen to assess the grade and severity of the patients. Cases with recurrent hernia and previously operated were not included in the study. Intraoperative findings were recorded where it was observed that more than half of them (54%) had non-strangulated hernia (with viable bowel) and 42% had non-strangulated hernia (with omentum) and 5% of the cases had strangulated hernia which required bowel resection. All the patients were followed for a period of 3 months, during the follow up period, 19% of them developed complications and 1% mortality was observed in the patient who had strangulated hernia who developed septicemia post operatively.

**Keywords:** Ventral hernias, abdominal swelling, non-strangulated hernia

### Introduction

A ventral hernia is defined by a protrusion through the anterior abdominal wall fascia <sup>[1]</sup>. From the xiphoid process to the umbilicus occurs epigastric hernia, at the umbilicus occurs umbilical hernia, and spontaneous hernias that occur below the umbilicus in the midline are hypogastric hernias. After surgical incisions, incisional hernias are a complication <sup>[2]</sup>. Incidence of abdominal hernia is 3-11% in laparotomy patients and of these 23% are attributed to wound infections <sup>[3]</sup>. About 75% of ventral hernias are primary non-incisional <sup>[4]</sup>. The most common presentation for which the patient comes to the surgeon is abdominal swelling, while second most common being pain over the swelling <sup>[5]</sup>. Ventral hernias are a common condition presenting to our tertiary hospital. Less data is available as to its natural history and hence surgeons prefer surgical treatment as there are few prospective cohort studies available.

Hence this study is being done to know the relation of various ventral hernia to age groups, gender, risk factors clinical presentations, treatment and complications.

## Objectives

1. To study the clinical profile of the patients with ventral hernia
2. To study the surgical outcome of the patients in the study set up.

## Methodology

A case series study of 100 patients with ventral hernia was carried out in the setting of tertiary care hospital in the department of General Surgery, Vijayanagara Institute of Medical Sciences, Ballari, Karnataka who were admitted between Jan 2019 to Jan 2020.

All patients with clinically diagnosed cases of ventral hernia were included and patients were subjected to ultrasonography of abdomen to assess the grade and severity of the patients. Cases with recurrent hernia and previously operated were not included in the study.

All the necessary biochemical profiling was done among the patients. Emphasis was given to document symptomatology, findings of clinical examination, site of hernia, complicated or uncomplicated hernia. Some of the known risk factors of hernia were also noted among the patients.

Variables included in the analysis were age, sex, clinical profile, associated risk factors, site of hernia, intraoperative findings of the hernia. All patients were followed for period of 3 months post operatively where surgical outcome was assessed with emphasis on presence of complications.

## Results

**Table 1:** Age and sex wise distribution of the patients (N=100)

Variable	Frequency	Percentage
<b>Age group</b>		
10-20 yrs	2	2
20-30 yrs	8	8
30-40 yrs	18	18
40-50 yrs	26	26
50-60 yrs	22	22
60-70 yrs	19	19
70-80 yrs	5	5
<b>Sex</b>		
Male	36	36
Female	64	64

A total of 100 cases of ventral hernia were collected over a period one year. More than one third of them (67%) were in the age group of 40-70 years, followed by 30-40 years (18%) and 10% were in the age group of less than 30 years. The mean age of the patients was at  $58.78 \pm 12.34$  years. Sex wise distribution of the patients revealed that nearly two third of them were females (64%).

**Table 2:** Clinical profile of the patients (N=100)

Variable	Frequency	Percentage
<b>Complaint</b>		
Swelling	58	58
Swelling with pain	26	26
Swelling with irreducibility	13	13
Swelling with intestinal obstruction	3	3

<b>Anatomical site</b>		
Incisional hernia-infra umbilical	44	44
Incisional hernia-supraumbilical	3	3
Umbilical hernia	30	30
Paraumbilical hernia	15	15
Epigastric hernia	8	8
<b>Risk factors</b>		
Constipation	34	34
Obesity	20	20
Diabetes	10	10
Prostatomegaly (males)	12	12
Anemia	4	4
Smoking	20	20

The clinical profile of the patients was recorded where the common symptoms were swelling (58%) and swelling with pain (26%). Three cases presented with symptom of swelling with intestinal obstruction. Site wise distribution of ventral hernias showed that nearly half of them had incisional hernia-infraumbilical (44%) followed by umbilical hernia (30%), Paraumbilical hernia (15%) and epigastric hernia (8%). Some of the known risk factors of hernia were also assessed in the patients which revealed that constipation (34%), Obesity (20%), smoking (22%) and diabetes (10%) were the common risk factors. Among male patients prostatomegaly was seen in 12% of them.

**Table 3:** Intraoperative findings and postoperative complications (N=100)

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Intraoperative findings</b>		
Strangulated hernia (requiring bowel resection)	5	5
Non-strangulated hernia (viable bowel)	54	54
Non-strangulated hernia (omentum)	42	42
<b>Complications</b>		
Seroma	3	3
SSI	5	5
Recurrence	5	5
Skin necrosis	3	3
Mesh infection	3	3
Death	1	1

Intraoperative findings were recorded where it was observed that more than half of them (54%) had non-strangulated hernia (with viable bowel) and 42% had non-strangulated hernia (with omentum) and 5% of the cases had strangulated hernia which required bowel resection. All the patients were followed for a period of 3 months, during the follow up period, 19% of them developed complications and 1% mortality was observed in the patient who had strangulated hernia who developed septicemia post operatively.

Among the complications 5% of them had recurrence, 5% developed SSI, 3% developed seroma, 3% of them developed skin necrosis and mesh infection was observed in another 3%.



**Fig 1:** Hernioplasty (intraoperative)



**Fig 2:** Ventral hernia

## Discussion

A total of 100 patients who were clinically diagnosed to have ventral hernia were enrolled in the study over a period of one year with the objective of studying the clinical profile and surgical outcome among the patients.

Infraumbilical incisional (44%) hernia was found to be the most common hernia followed by umbilical (30%) and para-umbilical (15%) hernia with female preponderance in our study. It is comparable to other Indian studies [6]. Lower abdomen lacks posterior rectus sheath leading to weakness in lower abdomen.

But according to Arshad M Malik *et al.*, paraumbilical hernia followed by incisional and epigastric hernia with male preponderance was seen [7].

Also according to Natalie Dabbas *et al.*, umbilical followed by epigastric, incisional and paraumbilical hernias were found in that order [8].

The highest incidence was seen between age group of 40-70 years (67%), followed by 30-40 years (18%). This is similar to study by Priti Prasad Shah *et al.*, with peak in 3rd to 4th decade [9].

Constipation (34%) followed by obesity (20%) was found to be the most common risk factor according to our study. This result is also seen in a study by R.D. Jaykar *et al.* In a study by Clement SH, obesity was found to be the most important risk factor [10].

## Conclusion

This study was conducted with 100 patients admitted to Vijayanagara institute of medical sciences, Ballari, between Jan 2019 to Jan 2020. Nearly two-third of the patients were females with age preponderance of 40-70 years. Patients presented with swelling as complaint in 58%, swelling with pain in 26%, swelling with irreducibility in 13% and swelling with intestinal obstruction in 3%. Infra-umbilical incisional hernia was seen in 44% of patients followed by umbilical hernia in 30% and para-umbilical 15%. Constipation and obesity were found to be the major predisposing risk factors. Wound infection occurred in 5% of cases and recurrence in 5%. Other complications included seroma, skin necrosis and mesh infection in 3% of patients each. There was 1 mortality.

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