



CLINICAL STUDY AND MANAGEMENT OF VENTRAL HERNIA

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ABSTRACT

Ventral Hernias are second most common type hernias accounting for 21 to 35% of all varieties. Reported incidence of Incisional hernia is 2 to 11%. This study was undertaken to study the clinical presentation and management of ventral hernia. 65 cases of ventral hernia were chosen for study. Female preponderance was seen in umbilical/ Para umbilical hernia and incisional hernia while epigastric showed male preponderance. Most common age of presentation was 3rd to 7th decades. Previous surgery was found to be most common risk factor. Mesh repair is the standard method of treatment laparoscopy the approach of choice, depending on the affordability of the patients and expertise of the surgeon.

KEYWORDS : Ventral Hernias, Incisional Hernias, Mesh Repair, Suture Repair.**1. INTRODUCTION:**

Ventral hernias represent defects in the abdominal wall fascia and muscle through which intra-abdominal or preperitoneal contents protrude. Ventral Hernias are second most common type hernias accounting for 21 to 35%. Reported incidence of Incisional hernia is 2 to 11%. Currently, it is believed that up to 13% of laparotomy incisions will eventually develop hernias.¹ Recurrence after surgical treatment varies between 0%-46% and is at least twice as frequent following open suture repair than after mesh repair.² Although laparoscopic repair is a promising approach, it is not applicable to complex hernias with significant loss of domain.³ Obesity, old age, malnutrition, steroids, wound infection and conditions that increase intraabdominal pressure predispose for hernia. Because there is no prospective cohort available to determine the natural history of untreated ventral hernias, most surgeons recommend repairing. Ventral hernia is a very common condition presenting to our hospital, so there is a need to study the disease with respect to the various presentations, to gauge the awareness of the patients and also to determine the best modality of treatment in our set-up. Thus, the study is being done to know the proportion of ventral hernias occurring in sexes, age groups, risk factors, complications, clinical presentations and treatment.

2. AIMS AND OBJECTIVES:

The aim of the study is to evaluate the

1. Distribution of ventral hernias with respect to age and sex.
2. Predisposing factors in patients with ventral hernias.
3. Period between the previous surgery and development of Incisional hernia.
4. Various surgical options for ventral hernias.

3. MATERIALS AND METHODS:

A clinical study of 65 cases of ventral hernia has been done from June 2017 to May 2018, on inpatients admitted in Department of General Surgery, ASRAMS Hospital. Informed written consent was obtained. A simple random sampling was done for selecting the patients. The patients related factors namely age, sex, multi parity, COPD, constipation and past surgical history were recorded. Routine investigations viz. Haematology, urine examination, chest x-ray, ECG, Ultrasound abdomen for all patients and other special investigations were done wherever required. At the induction of anaesthesia, prophylactic antibiotic (3rd generation cephalosporin) was given. Patients were assigned to undergo suture repair or mesh repair at operating surgeon's discretion. In suturing repair continuous stitches width and interval approximately 1 cm was put using no. 1 polypropylene. In mesh repair prolene mesh was used with at least 5cm of mesh overlapping the edges of the facial defect and secured with prolene.

Suction drain was used for all patients and drain was removed 48 to 72 hrs interval or when drain decreased.

Sutures were removed 8th post operation day.

4. CRITERIA FOR EVALUATION:**• INCLUSION CRITERIA –**

Patients admitted and diagnosed to have ventral hernia clinically. Patients who would be informed about the study: would have read understood and signed the informed consent.

• EXCLUSION CRITERIA -

Age less than 18 or above 70 years.

Patients who did not give consent for the study

Patients with obstructed/strangulated incisional hernias, portal hypertension, bleeding diathesis were excluded from the study.

5. RESULTS:**Table 1: DISTRIBUTION OF VENTRAL HERNIAS**

SN	Type of Hernia	No.	Percentage
1	Incisional	18	25.7
2	Umbilical	38	54.2
3	Epigastric	9	12.9
	Total	65	100

In our study umbilical hernia is found to be most common with regards to distribution among ventral hernia.

Table no 2: Distribution of ventral hernia with respect to age and sex

Age	Male		Female		Total	
	No.	%	No.	%	No.	%
18-25	1	3.4	2	5.6	3	4.6
26-35	4	13.8	10	27.8	14	21.5
36-45	6	20.7	9	25	15	23.1
46-55	10	34.5	9	25	19	29.2
56-65	3	10.3	6	16.7	9	13.9
66-75	4	13.8	0	0	4	6.2
>75	1	3.4	0	0	1	1.5
Total	29	100	36	100	65	100

Males affected were 29, females 36. Female preponderance was seen in incisional hernia with male to female ratio 1:8 and in umbilical/ Para umbilical with male to female ratio 1:1.5. Epigastric showed male preponderance. Most common age of presentation was 3rd to 7th decades.

Table 3: Risk factors identified in patients with ventral hernias

Risk Factors	No.	Percentage
Past Surgery	19	29.2
Multiparty	33	50.7
Anaemia	18	27.7
Obesity	47	72.3
COPD	10	15.4
BPH	2	3.1
Hypertension	17	26.2
T2DM	25	38.5
Smoking	13	20
Alcohol	6	9.2
Epilepsy	4	6.2

Tables 4: Past Surgeries, predisposing to Incisional hernia

Past Surgery	No.	Percentage
Hysterectomy	12	66.7
Emergency laparotomy	2	11.1
Tubectomy	3	16.7
Laparoscopic Sterilization	1	5.6
Total	18	100

Out of all past surgeries hysterectomy is found to be most common.

Table -5.Types of incisions for the development of Incisional hernias

Type of Incision	No.	Percentage
Upper Mid Line	2	11
Lower Mid Line	10	55
Tubectomy	2	11
Pfannenstiel	5	27
Total	18	100

Table -6 Time period for the onset of Incisional hernia after previous surgery

Presentation after previous Surgery	No.	Percentage
6 months to 1 Yr	3	16.7
1 to 5yr	6	33.3
5 to 10yrs	4	22.2
>10 yrs	5	27.8
Total	18	100

Most of the patients presented after 1-5yr of previous surgery.

Table 7, types of repairs done for ventral hernias

Type of repair	No of patients	Percentage
Mayo's repair	5	7.7
Simple suturing	2	3.05
Onlay mesh repair	20	30.7
Inlay mesh repair	2	3.05
Sublay mesh repair	36	55.4
Total	65	100

Sublay mesh repair was done for most of the patients. Follow up of the patients was done regularly. Of all the patients followed up none developed recurrence during the study period.

6. DISCUSSION:

Ventral hernias are a familiar surgical problem. In incidence it is second to inguinal hernias, accounting for 25-35 % of all hernias. In our study ventral hernias constituted 35.1% and Incisional hernias 9.7% of all hernias. This is comparable to Hodgson N.C. Fet al⁴ (9-19%) and Robert J.Baker⁵ series (0.5-13.9%). The overall sex ratio distribution of ventral hernias showed that both sexes were affected equally however with respect to Incisional hernias female to male ratio was 8:1 (16 (88.9%) and 2 (11.1%). Ellis H. et.al have obtained 64.6% female population in their study of 342 patients.⁶ In Umbilical hernia, female preponderance was seen, female to male ratio was 1.5: 1, (23, female (60.5%) and 14 males (36.8).) and Male preponderance was seen in Epigastric hernia, (15 males (100%), 0

females (0%). Affected males typically presented in their 4,5,7th decades (34,10.3, 13.8%) 75 % and females 3,5,6,7th decades (25,25,16.7, 15%) 88%. Opinions vary as to the importance of patient's age in predisposing to post operative herniation (Kozoll 1964: Lindner: 1975: Thorlakson). Majority of the patients who underwent gynecological procedures namely Hysterectomy- 75%, Tubectomy 18.75%, Laparoscopic sterilization 6.25% developed hernia through lower midline incisions. 32% of the patients who underwent Emergency laparotomy, developed Incisional hernia. Toms P.A et al. has said Incisional hernia are more common following midline through the relatively avascular linea alba and are less common following transverse incision, especially where muscle splitting approaches are been used⁷ As many as 20% of patients who underwent Laparotomy develop Incisional hernia (Roland et al. and Luijendijk et al.)⁸ Korenkov et al. has said that Incisional hernia can occur after all types of abdominal surgery and risk lies between 11% and 15% after midline Laparotomy and 0.2% to 1.2% after laparoscopy.⁹

In our study majority (37.3%) of Incisional hernias developed between 1 to 5 yrs. Vilvanto said Incisional hernia usually develops within 1 year of operation and rarely 2-3 yrs. In 10 yrs prospective trial involving 537 patients Mudge and Hughes showed that of the 62 patients that developed Incisional hernia, 56% did so within 1st post operative year and 35% after 5 yrs. More than half of all Incisional hernias present within first 2yrs of primary surgery (Keith W. Millicon).¹⁰

In our study 27.7% i.e. 18 patients were anemic, 38.5% i.e. 25 were diabetic, and 72.3% i.e. 47 were obese, 20% i.e. 13 were smokers and 9.2% i.e. 6 were alcoholic. Ellis found that obesity was associated with 3 fold increase in herniation and recurrence.¹¹ In our study 7 patients (10.8%) underwent suture repair and 58 patients (89.2%) underwent mesh repair.

7. CONCLUSION:

To conclude with Female preponderance was seen in Incisional and umbilical/paraumbilical hernia. Most of the ventral hernia presented in 3rd to 7th decades. Previous surgery was the single most important cause for Incisional hernias. Other risk factors were multiparty, obesity, anemia, COPD, wound infection, Diabetes Mellitus, Alcoholism and smoking. Simple suture repair was the choice of repair in younger patients. Mesh repair is the technique of choice for most Incisional hernias and for ventral hernias with large defect. Though sub/underlay mesh placement is more physiological, it can be placed either inlay or on lay. Laparoscopic approach for ventral hernia repair is method of choice with the advantages of good operative field visibility, less duration of stay, minimal scar.

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