

## A STUDY OF CLINICAL PROFILE OF PATIENTS HAVING NON-INCISIONAL VENTRAL ABDOMINAL HERNIA

**Author:**

**DR. PRASHANT N MUKADAM (PROFESSOR)**

**DR. ASHIT V PATEL (RESIDENT DOCTOR)**

**DR. KRUPALI V KOTHARI (RESIDENT DOCTOR)**

**DR. UTSAV V PATEL (RESIDENT DOCTOR)**

**DR. RUSHI VANSADIYA (RESIDENT DOCTOR)**

**Department of General Surgery AMC MET Medical College, LG Hospital ,Maninagar  
Ahmedabad pin 380008**

**Correspondence Author: DR. PRASHANT N MUKADAM (PROFESSOR)**

**AMC MET Medical College**

**Department of General Surgery**

### **ABSTRACT**

#### **Introduction**

Abdominal wall hernias are a common surgical problem. Lakhs of patients are affected each year, most commonly presenting with primary ventral, incisional, and inguinal hernias. Whether symptomatic or asymptomatic, hernias commonly cause pain or aesthetically distressing to patients. These concerns, coupled with the risk of incarceration, are the most common reasons patients seek surgical repair of hernias. The presence of a ventral hernia is itself, an indication for repair. The tension-free repair has revolutionized hernia surgery. The use of mesh prosthesis to approximate the fascial defect has resulted in a decrease in recurrence rates for any hernias.

#### **Material and methods**

A clinical study of 60 cases of ventral hernia has been done during the period from march 2019 to April 2021 on inpatient admitted to tertiary care teaching L.G. hospital, Ahmedabad with follow up period of 6 months.

#### **Results**

• 60 cases of ventral hernias were studied with follow up a period of 6 months. Commonest ventral hernia was umbilical hernia which accounts for 60% of cases. Swelling was the most common complaint in 91.66% pts. Mesh repair is the technique of choice for all ventral hernias with large defect. Though retro rectus mesh placement is more physiological. Laparoscopic approach for ventral hernia repair has advantages of good operative field visibility, lessened duration of hospital stays, minimal postoperative scar. Laparoscopic repair is gaining good acceptance in current era and time. Complications in both open approach and laparoscopic approach remain same.

#### **Conclusion**

Irrespective of advance nourishment and decreased number of pregnancies as compared to the past, still abdominal wall hernia is not infrequent. Simultaneously; multiple and effective

surgical techniques and various planes of mesh placement, have increased cure rate up to 100% with minimum serious post operative complication.

**KEY WORDS:** Ventral hernia, Swelling, Mesh repair

### **INTRODUCTION:**

Abdominal wall hernias are a common surgical problem. Lakhs of patients are affected each year, most commonly presenting with primary ventral, incisional, and inguinal hernias. Whether symptomatic or asymptomatic, hernias commonly cause pain or aesthetically distressing to patients. These concerns, coupled with the risk of incarceration, are the most common reasons patients seek surgical repair of hernias.

Increased intra-abdominal pressure will exert its greatest force on the portion of the wall that is thinnest. As the hernia enlarges, the wall thins at that point, and the diameter increases. This positive feedback loop virtually assures continued progression.

The presence of a ventral hernia is itself, an indication for repair. Elective ventral and incisional hernia repair are undertaken largely to alleviate symptoms and to prevent hernia incarceration with subsequent strangulation of the intestine. The field of hernia repair has evolved as a result of surgical innovation and has benefited significantly from technologic improvements. The tension-free repair has revolutionized hernia surgery. The use of mesh prosthesis to approximate the fascial defect has resulted in a decrease in recurrence rates for any hernias.

### **AIMS AND OBJECTIVES:**

The main aims and objectives of this prospective study are

- To observe and record clinical findings, critically analyze the data, to draw the conclusions about cases of non-incisional ventral abdominal wall hernias
- To study various currently used surgical techniques and their postoperative course in patients of non-incisional ventral abdominal wall hernias.

### **PATIENTS & METHODS:**

A clinical study of 60 cases of ventral hernia has been done during the period from march 2019 to April 2021 on inpatient admitted to tertiary care teaching L.G. hospital, Ahmedabad with follow up period of 6 months. A simple random sampling based on below mention criteria was done.

### **INCLUSION CRITERIA:**

- Patient >10 years of age
- Ventral hernias other than mention in exclusion criteria

### **EXCLUSION CRITERIA:**

- Incisional hernia
- Congenital hernias below age of 10 years
- Parastomal hernias
- Groin hernias

The patients related factor namely age, sex, obesity, cough/COPD, constipation, prostatism, diabetes mellitus, hyper tension, consumption of tobacco and alcohol, past surgical history were recorded. Routine investigations viz Hematology, Urine examination, chest x-ray, ECG, Ultrasound abdomen and Pelvis for all patients and other special investigations were done for associated diseases wherever required. As clinical diagnosis was made, patients with medical illness were appropriately treated to attain near normal

parameters before surgery. At the induction of anesthesia, prophylactic dose of antibiotic (3rd generation cephalosporin) was given. Patients were assigned to undergo different types of open repair and laparoscopic repair

### **OBSERVATION AND DISCUSSION:**

Total number of various types of ventral hernias that were admitted in the study period is shown in the table no.1.

**TABLE NO.1  
INCIDENCE OF VARIOUS TYPES OF NON-INCISIONAL VENTRAL  
ABDOMINAL WALL HERNIA**

<i>Types of hernia</i>	<i>No. of patients</i>	<i>Percentage</i>
Umbilical	<b>36</b>	<b>60%</b>
Paraumbilical	<b>19</b>	<b>31.66%</b>
Epigastric	<b>04</b>	<b>6.66%</b>
Lumbar	<b>01</b>	<b>1.66%</b>
Spigelian	<b>00</b>	<b>00%</b>
Divarication of recti	<b>00</b>	<b>00%</b>
Supravesical	<b>00</b>	<b>00%</b>
<b>TOTAL</b>	<b>60</b>	<b>100%</b>

In our study among 60 patients, 36(60%) pts were of umbilical hernia, followed by 19 (31.6%) pts of paraumbilical hernia, 4 (6.66%) pts of epigastric hernia, 1(1.66%) pts of lumbar hernia. In our study, there are no cases of Spigelian hernia, supravesical hernia and divarication of recti.

**TABLE NO.-2  
DISTRIBUTION OF VARIOUS TYPES VENTRAL HERNIA WITH RESPECT  
TO VARIOUS AGE GROUP INCLUDED IN STUDY ARE AS FOLLOWS**

<i>Age in years</i>	<i>No. of patients</i>	<i>Percentage</i>
11-20	8	13.33%
21-30	6	10%
31-40	6	10%
41-50	21	35%
51-60	10	16.66%
61-70	7	11.66%
>70	2	3.33%
<b>TOTAL</b>	<b>60</b>	<b>100%</b>

In our study, among 60 patients taken, highest incidence of cases was noted in 5th decade whereas lowest incidence noted in above 70 years of age group. Youngest pt in our study was 10 yrs old while oldest was 74 yrs old. Incidence of hernia was found to be reducing with advancing age. Reduced physical work and decrease in conceive rates are responsible for reduced incidence of hernia in advance age group.

**TABLE NO.-3  
DISTRIBUTION OF VARIOUS TYPES VENTRAL HERNIA WITH RESPECT TO  
SEX**

study  
60

<b>GENDER OF PATIENTS</b>	<b>NUMBER OF PATIENTS</b>	<b>PERCENTAGE</b>
<b>MALE</b>	<b>35</b>	<b>58.33%</b>
<b>FEMALE</b>	<b>25</b>	<b>41.67%</b>
<b>TOTAL</b>	<b>60</b>	<b>100%</b>

In our  
out of

patients 35 were men and 25 were women which shows male preponderance. The overall sex ratio distribution of ventral hernias both sexes were affected equally in other studies.

Umbilical hernia was found more exclusively in female patients with 25 pt were female whereas number of affected male pt were 30. Repeated pregnancies, being overweight leading to laxity of a more umbilical hernia.

For epigastric hernia out of 4 pts all of them were male. Which correlates with 3 times of higher incidence of epigastric hernia in males. It forms as the result of weakness of mid abdominal wall or incomplete closure of abdominal tissue alba during development that may exacerbate due to more physical labor in male patients.

In our study, swelling was the most common chief complain in 40(66.66%) pts followed by pain and swelling in 15(25%) pts, pain alone in 5(8.33%) pts.

Pregnancy was associated risk factor in 23(38.33%) pts. Pregnancy may cause a ventral hernia or render a pre-existing one apparent. Growing baby and belly increase the pressure on abdominal wall. This can stretch the abdominal wall muscles and make them weaker or even separate in some areas.

In our study, obesity was the associated risk factor in 14(23.33%) pts followed by weight lifting in 7 (11.66%) pts. In 24 (40%) pts there were no any associated risk factors. Ellis group (1982) found that obesity was associated with three-fold increase in herniation and recurrence. <sup>(1)</sup> obesity has been cited as a risk factor for acute fascial dehiscence. (MILLIKAN K W, 2003) <sup>(5)</sup>. Obesity leads to deposition of fat globules between muscle bundles and between fascial planes leading to weakness. In S.M. BOSE series obesity was present in 33(30%) pts which is slightly higher than our study & COPD in 23(20.90%) pts.

Most of the ventral hernia were uncomplicated 95% at the time of presentation whereas 3(5%) pts were presented with irreducibility was mainly stucked omentum owing to smaller defect size.

In our study, open repair for hernia repair was performed in 50(83.33%) pts, whereas laparoscopic repair in 10(16.66%) repair is increasing due to better cosmesis, reduced hospital stay activity.

Laparoscopic repair of ventral hernias in obese patients and patients with large fascial defects are safe and associated with a low recurrence and complication rate.

**TABLE NO 4**  
**DEFECT SIZE OF HERNIA IN ULTRASONOGRAPHY**

study,  
60 pts

<b>Defect Size</b>	<b>No Of Patients</b>	<b>Percentage</b>
<b>&lt;1.5cm</b>	<b>22</b>	<b>36.66%</b>
<b>1.6-3cm</b>	<b>33</b>	<b>55%</b>
<b>&gt;3.1 cm</b>	<b>5</b>	<b>8.33%</b>
<b>Total</b>	<b>60</b>	<b>100%</b>

In our  
out of

22(36.66%) patients had wall defect up to 1.5cm, 33(55%) pts had wall defect between 1.6 to 3 cm size, 5(8.33%) pts had more than 3 cm size wall defect. Most of the pediatric patients with defect up to 1.5 cm undergone primary repair.

In our study, most common type of open repair performed was preperitoneal repair in 14(28%) pts followed by, onlay repair in 11(22%) 7(14%) pts. Primary suturing and mayo's repair was 9(18%) pts.

The technique of the repair was decided by the size of the hernial defect, abdominal muscle tone, whether hernial defect could be approximated without tension and general condition of the patient. Out of 60 patients 18 rest were reinforced with mesh. There is sufficient evidence to support the superiority of mesh repair over suture repair in terms of recurrences as observed in studies of Burger JW et al<sup>(6)</sup> and Luijendijk RW et al<sup>(7)</sup>.

In our study, lap TEP was lap TAPP in 3(30%) pts. Composite mesh were used in lap IPOM repair.

In our study, most common complication was seroma in 5(8.33%) pts, followed by wound infection in 4(6.66%) pts. There were no any complications in 46(76.66%) pts. Among patients undergoing onlay repair, there was higher incidence of seroma, and wound infection. Seroma was more prevalent in obese pts due to liquefaction of fat which ultimately gets infected.

Incidence of wound infection in our study is comparable with that of Lewis series (4%) and Usher series (6%)<sup>(2)</sup>. The wound infection has high propensity for fascial necrosis with resultant loss of integrity of closure (bucknal et, al 1992)<sup>(3)</sup>, was treated with appropriate antibiotics.

Postoperative ileus was more prevalent in underlay repair and IPOM repair which may be due to Intra-operative injuries like enterotomy, serosal bowel injury and bladder perforation leading to postoperative ileus.

Usher<sup>(4)</sup> reported zero percent recurrence in 48 patients who were treated by polypropylene mesh repair which concurs with our study. There were no any cases of accidental enterotomies or wound dehiscence in our study.

## **RESULTS:**

- 60 cases of ventral hernias were studied with follow up a period of 6 months.
- Commonest ventral hernia was umbilical hernia which accounts for 60% of cases.
- Umbilical hernia is relatively more common in female whereas epigastric hernia is exclusively found in male; out of 4 pts all were men.
- Maximum incidence was noted in 5th decade.
- 95% of ventral hernias were uncomplicated at the time of presentation, remaining 5 % presented with incarceration.
- Swelling was the most common complaint in 91.66% pts.
- Rare hernias like spigelian hernia, supramesic hernia were not found during our study period.
- Obesity was the commonest precipitating factor in 14(23.33%) pts.
- Simple suture repair or Mayo's repair was the choice of repair in children and in emergencies in all age groups. It was done for all varieties of ventral hernias with smaller defect size.
- Mesh repair is the technique of choice for all ventral hernias with large defect. Though retro rectus mesh placement is more physiological, it can be placed either onlay or pre peritoneal.
- Laparoscopic approach for ventral hernia repair has advantages of good operative field visibility, lessened duration of hospital stays, minimal post

operative scar. Laparoscopic repair is gaining good acceptance in current era and time. complications in both open approach and laparoscopic approach remain same.

- Size of the defect and presence of complication are the guiding factors for choosing the type of repair in view of disparity of surgeon

### **CONCLUSION**

Irrespective of advance nourishment and decreased number of pregnancies as compared to the past, still abdominal wall hernia is not infrequent. Simultaneously; multiple and effective surgical techniques and various planes of mesh placement, have increased cure rate upto 100% with minimum serious post operative complications.

### **REFERENCES:**

1. Deysine M. Epigastric hernias. In: Bendavid R, Abrahamson J, Arregui ME, et al, editors. "Abdominal wall hernias: principles and management". 1st ed. New York: Springer-Verlag; 2001. p. 685-7
2. Molloy: Massive incisional hernias – Abdominal wall replacement with marlex mesh: British Journal of surgery 1991; 78: 241 – 244.
3. Bucknal et.al, 1982 "Burst abdomen and incisional hernia", A prospective studies of 1129 major laparotomies, The British Journal of Surgery, vol.284, p931-33.
4. Usher FC, Oschner J, Tuttle LLD Jr. Use of marlex mesh in the repair of incisional hernia. Am J Surg 1958; 24: 969
5. Millikan KW. "Incisional hernia repair". Surg Clin North Am 2003; 83:1223-34.
6. Burger JW, Luijendijk RW, Hop WC, Halm JA, Verdaasdonk EG, Jeekel J. Long-term follow-up of a randomized controlled trial of suture versus mesh repair of incisional hernia. Ann Surg. 2004
7. Luijendijk RW, Hop WC, van den Tol MP, et al. A comparison of suture repair with mesh repair for incisional hernia. N Engl J.

### **Conflict of Interest:**

Nil

### **Funding:**

Nil

### **Acknowledgement:**

Nil