ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 01 | January - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A PROSPECTIVE STUDY ON VENTRAL HERNIA MANAGEMENT

General Surgery

Dr. S. Lavanya Associate Professor, Department of General Surgery Alluri Sitarama Raju Academy of Medical Sciences Eluru-534005, West Godavari District Andhra Pradesh, India

Dr. Naveen Babu Boddu Assistant Professor Department of General Surgery Alluri Sitarama Raju Academy of Medical Sciences Eluru-534005, West Godavari District, Andhra Pradesh, India

Dr. Madala Samba Siva Rao* Associate Professor, Department of General Surgery Alluri Sitarama Raju Academy of Medical Sciences Eluru 534005, West Godavari District, Andhra Pradesh, India *Corresponding Author

Dr. P. Sandeep Postgraduate, Department of General surgery Alluri Sitarama Raju Academy of Medical Sciences Eluru-534005, West Godavari district Andhra Pradesh, India

ABSTRACT

INTRODUCTION: A hernia is an abnormal protrusion of the viscus or a part of it through a weak point in the anterior abdominal wall at any site. A ventral hernia is defined as a protrusion through the anterior abdominal wall fascia.
MATERIALS AND METHODS: This study involved the study of 50 patients with admitted at Alluri Sitarama Raju Academy of Medical Sciences Hospital, Dept of General Surgery between November 2019 to April 2021.A hospital-based-analytical prospective cross-sectional study.
RESULTS: In the present study,the mean age of the patients was 42.8 + 6.4 years. The incidence of ventral hernia was more common in the 31-45 years age group. The incidence of ventralhernia was more common among females. Female male ratio was approximately 2:1
CONCLUSION: The incidence of ventral hernias was more among females when compared to males. The operative procedure conducted through laparoscopy for ventral hernia repair gave promising results than open ventral hernia

KEYWORDS

ventral hernia ,open repair , laparoscopic repair .

INTRODUCTION:

A hernia is an abnormal protrusion of the viscus or a part of it through a weak point in the anterior abdominal wall at any site. A hernia is also an abnormal exit of tissue or an organ, such as the bowel, through the cavity wall in which it normally resides. Hernias, based on their visibility, are classified into two types,

a) External hernia, which is visible from outside, *e.g.,* epigastric, inguinal, femoral, incisional hernias.
b) Internal hernia that is not visible from outside may be present between 2 adjacent cavities such as abdomen, and thorax. They may herniate into a sub-department of a pre-existing cavity diaphragmatic hernia or hiatus hernia.

A ventral hernia is defined as a protrusion through anterior abdominal wall fascia. These ventral hernias are very common problems encountered by surgeons. These hernias can be categorized as spontaneous or acquired or by their location on the abdominal wall. Epigastric hernias occur from the xiphoid process to the umbilicus, umbilical hernias occur at the umbilicus, and a rare spontaneous hypogastric hernia occurs midline below the level of the umbilicus. Acquired hernias occur after typical surgical incisions, and are termed as incisional hernias.

Among the patients, the majority can be diagnosed easily as the hernias present as a swelling or as a mass per abdomen associated with a symptom such as pain, vomiting, distension of abdomen, constipation,, and intestinal obstruction. The operation can be performed easily with a good post-operative result in patients with a small hernia. In contrast, the operation is difficult to perform among patients with large hernias because of complications like strangulation.[4] The ideal treatment for hernias is surgery.

Higher recurrence rates were observed among patients with obesity, smoking habit, alcoholism, prostatism, and intra-abdominal malignancy. Patients who develop hernias will face restriction from work or any other usual activities. As these hernias enlarge, there will be a dem, and for surgical repair.

The abdomen is a cylindrical chamber that extends from the inferior margin of the thorax to the superior margin of the pelvis, and lower limb. The abdomen wall contains an abdominal cavity, a space that holds the abdominal organs like the stomach, small& large intestines, liver, pancreas, gallbladder, spleen,, and kidney. All these organsare held together by connecting tissues, which allows them to expand, and, and slide against each other. Aorta, inferior vena cava (IVC), and their branches travel through the abdomen. The abdomen is protected by a tough, thin layer of tissue called fascia in the front, further covered by abdominal muscles, and skin. Back muscles protect the abdomen in the rear.[7] The abdominal cavity boundaries include dorsal, ventral, and lateral, which are formed by three pairs of flat muscles that include internal oblique, external oblique,, and transversus abdominis & their aponeuroses.

The continuous positive pressure of 2-20 mm of Hg is maintained inside the abdominal cavity, increasing to 150 mm of Hg during cough or vomiting. The abdominal wall counters the abdominal cavity pressure, resulting in continuous strain over the abdominal wall tissues. The abdominal wall also elevates the abdominal cavity pressure during defecation, respiration, and micturition. This increase of intra-abdominal pressure, and other risk factors like obesity & constipation acts as a contributing factor in herniation pathogenesis.

Hernias were thought to be the result of a single event, *e.g.,* lifting a heavy object,, but the repetitive mechanical strain is the possible damaging factor. Chronic mechanical strain, without any prior biological defect, induce changes in the structure & function of load-bearing muscle, tendon,, and fascial layer. There is no adequate literature for simulating hernia or replicating the increased intra-abdominal pressure from erect postural gravitational forces on the abdominal wall floor. The recent investigations had reported that primary fascial pathology, and surgical wound failure are the two fundamental biological mechanisms of herniation. In both cases, extra-cellular, and cellular molecular matrix defects were reported.

Ventral hernias occur through the anterior abdominal wall, which presents as swelling & rarely go for complications like incarceration, strangulation,, and present with respective manifestations. Hernias are mostly diagnosed clinically,, and they do not need any special investigations to get diagnosed. Rarely do they need investigations like ultrasonography, computerized tomography, and herniography for the confirmation of diagnosis.

Hernias cause a considerable economic loss to the patient & their family, and ultimately to the nation. It is necessary to perform the best-suited operation procedure, which will offer a permanent cure with minimal risk. For this challenging disease, several surgical procedures were developed from time to time.

Usage of non-absorbable synthetic mesh prostheses sheets, placed

across the defective area, stitched to the abdominal wall. This revolutionalized the abdominal wall defect repair.

This study's idea is not introducing a new magical technique, but to know the proportion of ventral hernias occurring in genders, various age groups, and to study the clinical presentations, risk factors, treatment,, and complications of ventral hernias

AIMS AND OBJECTIVES:

1. To estimate the incidence of ventral hernia concerning demographic factors.
2. To study the cost-effectiveness among various treatment modalities of ventral hernia.
3. To study the complications in the ventral hernia.

MATERIALS AND METHODS:

Study Design: A hospital-based-analytical prospective cross-sectional study.

PERIOD OF STUDY: The study was conducted for two years, i.e., from November 2019 to April 2021

STUDY AREA: The study was done in the Department of Surgery of Alluri Sitarama Raju Academy of Medical Sciences at Eluru, West Godavari (District), Andhra Pradesh.

STUDY POPULATION: During the study period of 24 months, about one hundred and ninety-two (192) new ventral hernia cases reported in the out-patient and emergency department. All the 192 cases were under inclusion criteria. In the present study, about fifty (50) ventral hernia cases were included under inclusion criteria.

SAMPLING METHOD: A systematic random sampling method was used to select the ventral hernia cases under inclusion criteria among the total 192 cases who had visited for outpatient and emergency services.

SAMPLING TECHNIQUE: Every 4th ventral hernia case with proper inclusion criteria was chosen to participate in the study (48 out of 192 ventral hernia cases were included in the study). For better results, the sample size was rounded off to be the nearest whole fifty (50) cases.

INCLUSION CRITERIA:

i. Patients between 18 to 60 years of age.
ii. Patients who had given consent to participate in the study.
iii. Both male, and female genders.

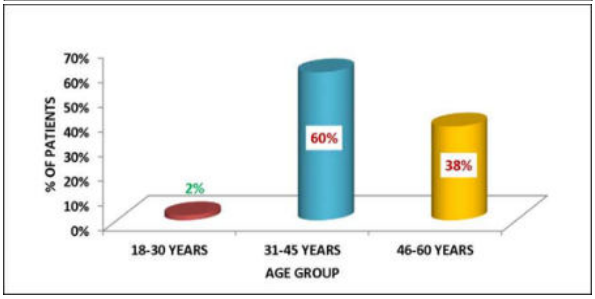
EXCLUSION CRITERIA:

i. Congenital abdominal wall weakness.
ii. Severe comorbid conditions (uncontrolled ascites, severe cardiopulmonary disease)
iii. Pre-existing surgical site skin infection.
iv. Multiple post-operative scars.
v. Patients undergoing emergency surgery.
vi. Recurrent hernias.
vii. Incisional hernias.
viii. Anemia.

RESULTS:

Age Distribution Of Patients Concerning Ventral Hernia

AGE GROUP	NUMBER OF PATIENTS	PERCENTAGE (%)
18-30 YEARS	01	2.0
31-45 YEARS	30	60.0
46-60 YEARS	19	38.0
TOTAL	**50**	**100**
MEAN + ST, ANDARD DEVIATION OF AGE = 42.82 + 6.42 YEARS		

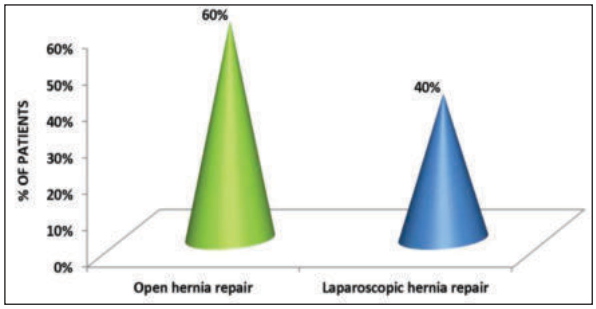


Gender Distribution Of Patients Concerning Ventral Hernia

GENDER	NUMBER OF PATIENTS	PERCENTAGE OF PATIENTS (%)
MALE	19	38
FEMALE	31	62
TOTAL	**50**	**100**

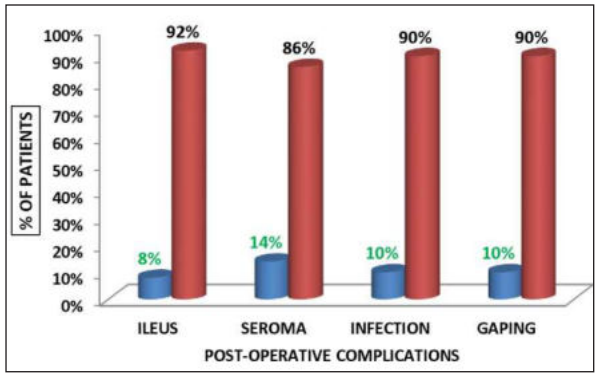
Distrbution of Patients Based On Operative Procedure

OPERATIVE PROCEDURE	NUMBER OF PATIENTS	PERCENTAGE (%)
Open hernia repair	30	60%
Laparoscopic hernia repair	20	40%
TOTAL	**50**	**100%**



Distribution Of Patients Based On Post-operative Complications

POST-OPERATIVE COMPLICATIONS	PRESENT	ABSENT
ILEUS	4 (8%)	46 (92%)
SEROMA	7 (14%)	43 (86%)
INFECTION	5 (10%)	45 (90%)
GAPING	5 (10%)	45 (90%)



Return To Regular Activities Vs Type Of Operative Procedure

LAPAROSCOPIC HERNIA REPAIR	OPEN HERNIA REPAIR	p-Value
22.85 ± 3.25	24.82 ± 3.24	**< 0.05**

DISCUSSION:

A total number of fifty ventral hernia patients were included in the study during the study period of two years from November 2019 to April 2021. The study was done in the Department of Surgery of Alluri Sitarama Raju Academy of Medical Sciences at Eluru, West Godavari (District), Andhra Pradesh. Through the systematic random sampling method, every 4th ventral hernia case with proper inclusion criteria was chosen to participate in the study (48 out of 192 ventral hernia cases were included in the study). The sample size was rounded off to be nearest whole number fifty (50) cases for better results.

Both the genders aged between 18-60 and who gave consent to participate in the study were included. The study included 38 p.c of males and 62 p.c of females with ventral hernias, and the mean age was 42 years.The patients who had undergone laparoscopic hernia repair surgery returned to regular activities in 22.8 days. The patients who had undergone open hernia repair surgery returned to regular activities in 24.8 days. There was a statistically significant mean difference between the two operative procedures concerning return to regular activities (p-value <0.05). The patients who had undergone laparoscopic hernia repair surgery stayed in the hospital for 5.3 days. The patients who had undergone open hernia repair surgery stayed in

the hospital for 6.2 days. There was a statistically significant mean difference between the two operative procedures concerning hospital stay duration (p-value <0.05).

CONCLUSION:

The incidence of ventral hernias was more among females when compared to males. The operative procedure conducted through laparoscopy for ventral hernia repair gave promising results than open ventral hernia repair in terms of decreased postoperative pain, complications, hospital stay duration, and return to normal activity duration. In terms of cost-effectiveness, open hernia repair was more advantageous when compared to laparoscopic hernia repair. Still, due to government initiations towards helping the poor through medical & surgical expenses, laparoscopic hernia repair was more advisable.

REFERENCES

1. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston textbook of surgery E-book. Elsevier Health Sciences; 2016 Apr 22. (Last accessed on 5/9/2020).
2. Fitzgibbons Jr RJ, Forse RA. Groin hernias in adults. New Engl, and Journal of Medicine. 2015 Feb 19;372(8):756-63. (Last accessed on 5/9/2020).
3. Bennet H.D, Kingsworth N.A, Hernias, umbilicus, and abdominal wall: Bailey &love's, Short practice of Surgery, 24th edn. 2004; Arnold publishers, London; 73: 1272 - 1293. (Last accessed on 5/9/2020).
4. Jaykar RD, Varudkar AS, Akamanchi AK. A clinical study of ventral hernia. International Surgery Journal. 2017 Jun 22;4(7):2326-9. (Last accessed on 5/9/2020).
5. Bencini L, Sanchez LJ, Bernini M, Mir, anda E, Farsi M, Boffi B, Moretti R. Predictors of recurrence after laparoscopic ventral hernia repair. Surgical Laparoscopy Endoscopy & Percutaneous Techniques. 2009 Apr 1;19(2):128-32. (Last accessed on 6/9/2020).
6. Lavanya S, Manvi PN. A clinical study, and different modalities of management of ventral hernias. International Surgery Journal. 2018 Oct 26;5(11):3589-93. (Last accessed on 6/9/2020).
7. Elango S, Perumalsamy S, Ramach, andran K, Vadodaria K. Mesh materials, and hernia repair. BioMedicine. 2017 Sep;7(3). (Last accessed on 7/9/2020).
8. Klinge U, Prescher A, Klosterhalfen B, Schumpelick V. Development, and pathophysiology of abdominal wall defects. Der Chirurg; Zeitschrift fur Alle Gebiete der OperativenMedizen. 1997 Apr 1;68(4):293-303. (Last accessed on 7/9/2020). accessed on 7/9/2020).
9. Rosch R, Junge K, Lynen P, Mertens PR, Klinge U, Schumpelick V. Hernia—a collagen disease?. European Surgery. 2003 Jan 1;35(1):11- 5. (Last accessed on 8/9/2020).
10. Kang SK, Burnett CA, Freund E, Sestito J. Hernia: Is it a work-related condition?. American journal of industrial medicine. 1999 Dec;36(6):638-44. (Last accessed on 8/9/2020).