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SPECTRUM OF VENTRAL HERNIA IN PATIENTS PRESENTING AT INDIRA GANDHI MEDICAL COLLEGE SHIMLA

Dr. Vipul Parmar[1], Dr. RS. Jhobta[2], Dr. Geeti Parmar[3], Dr. Vishal Thakur and Dr. Ramesh Kaundal[4]*

[1]Medical officer, MS General Surgery, CH Theog.
[2]Professor Department of General Surgery, IGMC Shimla.
[3]Junior Resident Department of Pharmacology, IGMC Shimla.
[4]Assistant Professor Department of General Surgery, SLBSGMC Ner Chauk.
[5]Medical Officer, MS General Surgery, CH Theog.

***Corresponding Author: Dr. Ramesh Kaundal**

Assistant Professor Department of General Surgery, SLBSGMC Ner Chauk.

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ABSTRACT

Background: ventral hernia is one of the common complications encountered in surgery OPD day by day and is an important cause of morbidity. It can be repaired by following anatomical, mesh or laparoscopic methods. The incidence of these hernias is high even with recent advances in surgery, anaesthesiology, antibiotics, and suture materials used. We wanted to study the epidemiology, aetiology, mode of presentations, modalities of treatment and its outcome of ventral hernia repair. **Method:** with the aim of studying spectrum of the ventral hernia in Indira Gandhi medical college, study was conducted on 207 patients who presented in IGMC Shimla with in two year period. History, clinical examination, radiological as well as laboratory investigations, comorbid conditions, operative techniques, post operative period was recorded on a preformed performa and analysed. **Results:** 207 patients were studied age ranging from 10-88 with mean age was found to be 51.33 years with female predominance with ratio 1.5:1. Most of the patients who present in IGMC are from shimla district and Epigastric hernia (41.55%) was commonest variety followed by incisional hernia (30.43%), umbilical, paraumblical, recurrent incisional and spigelian hernia. 104 patients were symptomatic and prostatism (29.80%) was the most common comorbidity followed by hypertension, respiratory and diabetes. Majority of the patients underwent anatomical repair (37.68%), open mesh hernioplasty 31.67% and laparoscopic ventral hernia was done in 19.8%. Patients followed for one month after surgery for post op complications and only 10 patients (4.8%) of operated patients had wound infection. **Conclusion**: Ventral hernias are common surgical burden in Himalayan population. Better treatment strategies need to be devised to manage these. Presence of ventral hernia is an indication for surgery even in presence of co-morbid conditions like ascites, COPD, BPH as these patients are more prone for complications and of course these conditions need proper addressal.

KEYWORD: Ventral hernia, Incidence, Prevention, Risk factors.

INTRODUCTION

Ventral Hernia is defined as a protrusion of an abdominal viscus or part of a viscus through the anterior abdominal wall. The term ventral hernia refers to the hernias of the anterior abdominal wall except groin hernias. It represents a heterogeneous subtype of hernia disease that includes incisional hernias, paraumbilical hernias, umbilical hernias, epigastric hernias and spigelian hernias respectively.[1]

Epigastric hernia[2] is the protrusion or herniation of extraperitoneal fat through a defect in the linea alba anywhere between the xiphoid process and the umbilicus, usually midway between these structures. This type is typically infrequent in children and is usually found in adults with a male to female ratio of around 3:1.

Incisional hernia[2] is one where the peritoneal sac herniates through an acquired scar in the abdominal wall usually caused by a previous surgical operation or an accidental trauma.. These are infrequent under the age of 40 years and their incidence increases with age. Ventral incisional hernia comes out to be a common complication of abdominal surgery, with the overall incidence ranging from 2% to 20%. It is very common in females.

Spigelian hernia[2] comprises about 0.12% of all the abdominal wall hernias. This is a type of inter-parietal hernia occurring at the level of arcuate line through spigelian point. Spigelian hernia can occur above (10%) or below (90%) the umbilicus. Below the umbilicus it occurs at the junction of linea semilunaris and linea semicircularis. Spigelian hernias are most frequently

found in adults from ages 40 to 70,typically in the patients around 50 years of age and the male to female ratio is 1:1.8. The incidence of Spigelian hernias in children is very low.

Lumbar hernia[2] is herniation either through superior (Grynfelt's) or inferior lumbar triangle (Petit's triangle) Approximately 20 per cent of lumbar hernias are congenital while the rest of these are acquired (80%), either primarily or secondarily(25%). Ventral hernias are among the most common clinical problems seen by a surgeon.

Epigastric hernia[2] is the protrusion or herniation of extraperitoneal fat through a defect in the linea alba anywhere between the xiphoid process and the umbilicus, usually midway between these structures. This type is typically infrequent in children and is usually found in adults with a male to female ratio of around 3:1. Only a few studies are available on the incidence of epigastric hernias, where they account for approximately 1–5% of abdominal wall hernias.

A thorough understanding of the pathophysiology and complete spectrum of ventral hernias can improve management of such patients. Multiple important factors are related to the occurence and successful repair of ventral hernias which include patient-specific characteristics, presence or absence of comorbidities, technique of repair and the type of material used among others. A very few studies relate to study the spectrum of ventral hernias in the state of Himachal Pradesh in India.

Thus present study aims to find the incidence and prevalence of ventral hernias in the population of Himachal Pradesh which represents a distinct geographic, environmental and diet consuming entity than the rest of the Indian subcontinent. This study also aims to find the effect of various factors including type of repair, choice of material used to repair, presence or absence of associated comordities, age and gender on the management and outcomes of ventral hernia repair.

METHODS

The present study study is an observational type of study conducted prospectively, in the Department of Surgery at I.G.M.C Shimla, on 207 patients who presented with symptoms of ventral hernia in the Department of Surgery from 1st July 2016 to 30th June 2018.

Inclusion criteria

The following patients were included in the study

- USG proven ventral hernias, admitted in the department of Surgery
- Verbal and written consent was taken from all the patients of ventral hernia and all those who agreed for procedure were included in the study.

Exclusion criteria

The following patients were excluded

- Groin hernia and lumbar hernia diagnosed patients.

Patients who were reviewed on outpatient basis were excluded

All the patients who met the inclusion criteria evaluated thoroughly and there history, clinical examination and various investigations are recorded in a preformed performa and entered on masterchart in MS excel. Patients were diagnosed and treated accordingly. The patients were evaluated on the following parameters**.**

- History and Physical examination
- Age
- Gender
- Geographical distribution (district wise)
- Fitness for surgery
- Smoker or non smoker
- Co-morbidities
- Diagnosis
- USG Finding
- Treatment given
- Use of mesh
- Content of hernial sac
- Length of hospital stay
- 1 month follow-up for wound sepsis.

Various treatment options included anatomical repair, open mesh hernioplasty (onlay, sublay and underlay) and laparoscopic ventral hernia repair

All the parameters will be noted as per Performa attached and the data so collected was analyzed statistically using softwares Epi info and latest version of SPSS. P value < 0.05 was considered to be statistically significant.

RESULTS

Over a period of one year, 308 cases of abdominal wall hernias were studied at our institute out of which 16 patients were not operated due to unfitfor surgery. Age varies from 10 months to 88 years with an increasing incidence with age (**Table 1**). The mean age of patients presented in this study was found to be 51.33 years. The male to female ratio is 1:1.5 as shown in **Table 2**. Ventral hernias showed a female dominance (**Table 2**). Epigastric hernia was commonest variety followed by incisional hernia, umblical, paraumblical,recurrent incisional and spigelian hernia distribution is shown in **table no. 3**. Patients presenting at IGMC Shimla were from all region of Himachal Pradesh and most of the patients are from district Shimla, 97 out of 207 (46.86%) and lowest from Una i.e. only 1 patient(.48%). Area wise distribution is depicted in table no.4.

104 patients were symptomatic like pain, tenderness, and features of intestinal obstruction. Prostatism was commonest associated illness followed by hypertension and respiratory diseases (Table 5). Wound infection was commonest complication in post operative period followed by pyrexia despite routine use of antibiotics in 10 cases out of 207 patients (4.8%).

After assessing and diagnosing the patients various surgical techniques were performed according to their diagnosis and size of defect. Various approaches are mentioned in table no.6.

Tableno.1: Age wise distribution.

Age group (yrs)	No. of patients	% of total patients
<15 years	3	7.18
15 to 30 years	13	9.68
31 to 45 years	59	10.93
46 to 60 years	71	17.50
>60 years	61	19.06

Table no 2: Sex distribution.

Gender	No. of patients	% of total patients
Male	80	38.65%
Female	127	61.35%
Total	207	100.00%

Table no 3: Typewise distribution of abdominal wall hernia.

Type of hernia	No. Of patients	% of total patients
Epigastric hernia	86	41.55%
Para-umbilical hernia	21	10.14%
Incisional hernia	63	30.43%
Umbilical hernia	25	12.08%
Recurrent incisional hernia	10	4.83%
Spigelian hernia	2	0.97%

Table no 4: Area wise distribution.

District	No. of patients	% of total patients
Shimla	97	46.86%
Mandi	44	21.26%
Bilaspur	14	6.76%
Kangra	3	1.45%
Sirmour	14	6.76%
Kullu	12	5.80%
Hamirpur	3	1.45%
Ludhiana	1	0.48%
Solan	16	7.73%
Kinnaur	2	0.97%
Una	1	0.48%
Total	207	100.00%

Table 5: Comorbid illnesses.

Diseases	No. of patients	% of total patients
Diabetese Mellitis	22	10.62
Hypertension	50	24.03
Respiratory	30	14.42
Prostatism	62	29.80

Table no.6: Surgical Approaches.

Surgery	No. Of patients	% of total patients
Not operated as unfit for surgery	17	8.21%
Anatomical repair	78	37.68%
Onlay mesh hernioplasty	66	31.88%
Laparoscopic ventral hernia repair	41	19.8%
Sublay mesh hernioplasty	3	1.45%
Underlay mesh hernioplasty	2	0.97%
Total	207	100.00%

DISCUSSION

Being a commonly performed general surgical operation, abdominal wall hernia comprises a significant proportion of total surgical work load in most of the centres.[3] In present study female patients have the higher incidence of ventral hernia(i.e.61.35%) as compared to males (38.65%) which is in accordance with the study of McAdam Eccles et al[4] and Fanklin et al study.[5] Our study shows that maximum incidence of the ventral hernia is in the age group of 31 to 45 i.e. 34.30% and mean age of the patient was found 51.33 year which is similar to the various studies conducted worldwidw.[5,6] Most common ventral hernia in our study is epigastric hernia followed by incisional hernia and varies in all ages. However this result differ siltly from the study coduncted by sangwan et al[7] where they found paraumblical hernia as with highest frequency. Epigastric hernia are not uncommon and have been documented as an acquired disease in more than 90% cases.[8] In our study epigastric hernia account for 41.55%. Multiparity, obesity, malnutrition and raised intra abdominal pressure have been assigned as predisposing factors. Incisional hernia was noticed in approximately 30.43% of the cases which is significantly highr than USA and UK where it has been reported in 6% - 10% of cases but in accordance with African literature.[9,10] At this instititute patient presents from all over the himachal Pradesh but maximum no. of the the patients were from shimla district i.e. 46.86% due to nearby area and less no. Of patients are from border area of the himachal because proximity to the other care centres outside the state. Concomittent medical disease has been reported as having role in its etiology as well as in increasing morbidity and mortility in postoperative period. Symptoms of prostatism were present in approximately 29.9% cases while hypertension and diabetes were present in approximately 24% and 10% cases respectively. In the past decades the complication rates of abdominal wall hernias have drastically improved with the use of prosthetic mesh. We have used mesh unanimously in all cases except pediatric, strangulated and small ventral hernias. No recurrence has been reported till date. Complication rate in the form of post operative pain, seroma formation has been noticed. Wound sepsis of 4.8% has been noticed in our study which is in the range of 4% - 12% mentioned in literature.[11] Complications of the ventral hernia like irreducibility, obstruction and strangulation has been reduced in recent era as increased awareness of population. Various surgical approaches has been used according to patients diagnosis and defect size. 17 patients were unfit for surgery and rest 190 patients underwent for surgery. Laparoscopic ventral hernia was performed in 19.8% of patients and open hernia repair was done in 80.1% patients. Open mesh herniopalsty was done in 34.3% patients and 37% patients underwent anatomical repair due to their small size defect. Laparoscopic incisional hernia repair is a widely used and accepted operative technique, assuming general advances of laparoscopy are also valid for this group. In our study laparoscopic ventral hernia repair has given promising result as recent studies have shown that in the short term laparoscopic repair is superior to open repair in terms of less blood loss, fewer perioperative complications, and shorter hospital stay.[12,13]

CONCLUSION

Ventral hernias are common surgical burden in Himalayan population. Better treatment strategies need to be devised to manage these. Presence of ventral hernia is an indication for surgery even in presence of co-morbid conditions like ascites, COPD, BPH as these patients are more prone for complications and of course these conditions need proper addressal. Options for the surgical management of ventral hernias continue to evolve and laparoscopic ventral hernia repair is the treatment of choice in present era.

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