

# A Clinical Study on Pattern of Abdominal Wall Hernias in Females

Sougrakpam Robindro Singh<sup>1</sup>, Khuraijam Dijen Singh<sup>2</sup>

<sup>1</sup>Associate Professor, Department of General Surgery, JNIMS, Imphal.

<sup>2</sup>PGT (3rd Year), Department of General Surgery, JNIMS, Imphal.

Received: December 2019

Accepted: December 2019

**Copyright:** © the author(s), publisher. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Abdominal wall hernias are known to have gender variations. This gender differences are expected to influence the pattern and outcome of management of abdominal wall hernias. This study was done to analyse the pattern of different types of hernia and their incidence in female patients. **Methods:** This was a retrospective study done at Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur, India from January 2016 to December 2018. All the female patients who presented with different types of hernia like inguinal, incisional, umbilical, femoral and epigastric hernias irrespective of the age have been included in the study from January 2016 to December 2018. **Results:** In this study, a total of 108 cases of different types of hernias were studied including inguinal, incisional, umbilical, femoral and epigastric hernias. Among which inguinal hernia was the most common hernia with 78 cases and the most common age of incidence was 0 - 10 years. The next most common presentation was incisional hernia with a total of 17 cases and 41-50 years was the most common age group for incisional hernia. The next common hernia was umbilical hernia and the least common presentation was that of femoral and epigastric hernia with only 1 case each. **Conclusion:** In present study, most commonly encountered hernia was inguinal hernia followed by incisional hernia.

**Keywords:** Female, Abdominal Wall, Hernia, Ventral.

## INTRODUCTION

Hernias have been extensively studied over the years owing to their relative frequency worldwide.<sup>[1]</sup> Over the years, hernia management has witnessed improvements with the development of several techniques. Most available studies on hernias are markedly skewed towards the assessment of the efficacy of these techniques with relatively fewer studies assessing other aspects of the subject of abdominal wall hernias.<sup>[2]</sup> One of such areas where there is relatively sparse information is the pattern of abdominal wall hernias relating specifically to gender. It is not unexpected to find variations in the pattern of hernia presentation and outcome of management between males and females owing to the anatomical, embryological and physiological difference that exist between them.

Some of these have been left to speculations and assumptions with our search revealing very few published literature in this regard. This study set out to review the characteristics of female hernia patients with the aim of describing the demographics, pattern of abdominal wall herniation, mode of presentation and treatment.

### Name & Address of Corresponding Author

Dr. Khuraijam Dijen Singh  
C/o Chanambam Ibotombi  
Thangmeiband Lairenhanjaba Leikai  
PO Imphal, Imphal West, PIN- 795001  
Manipur.

## MATERIALS AND METHODS

This was a retrospective study conducted in 108 female patients who were admitted and operated at Jawaharlal Nehru Institute of Medical Sciences, Imphal for different types of hernias.

All the female patients who presented with different types of hernia like inguinal, incisional, umbilical, femoral and epigastric hernias irrespective of the age have been included in the study from January 2016 to December 2018. All the patients were operated either by herniotomy or hernia repair with / without mesh. All the cases were noted from operation register of the hospital and data were retrieved from the medical records department. Various sociodemographic, clinical and operative data were entered in a preformed chart and were analysed using SPSS 23 statistical software.

## RESULTS

In the study of female hernias conducted from January 2016 to December 2018, the most common hernia which was encountered was inguinal hernia wherein 78 cases were treated, followed by incisional hernia wherein 17 cases were treated, followed by umbilical hernia wherein 11 cases were treated and lastly one femoral hernia and one epigastric hernia were treated.

**Inguinal hernia**

Among the total of 78 cases of inguinal hernias noted the most common age group who underwent treatment belonged to the paediatric age group 0-10 years of age followed by second most common group of 11-20 years age group. 40 patients presented on the right side, 30 patients presented on the left side and 7 patients presented with bilateral inguinal hernia. Of the total 78 cases, 60 patients belonging to the age group 0-10 years, 8 patients belonging to 11-20 years and 4 patients belonging to 21-30 years underwent herniotomy. 2 patients belonging to the age group 31-40 years underwent herniorrhaphy and the rest 4 patients underwent hernioplasty.

**Incisional hernia**

Among the incisional hernias noted the most common age group who underwent treatment belonged to the age group 41-50 years of age. In our study, the most common etiology was either defect arising from a previous caesarean section or from midline exploratory laparotomy procedure. Of the total 17 patients, 15 of them were treated by mesh

repair and the rest 2 patients were treated by primary repair.

**Umbilical hernia**

Among the 11 umbilical hernias noted the most common age group who underwent treatment belonged to the age group 0-10 years of age. Out of the 11 patients, 6 patients were treated by mesh repair and 5 patients were treated by primary repair.

**Epigastric hernia and femoral hernia**

Finally, there were 2 cases - one epigastric hernia and one femoral hernia. Epigastric hernia was treated with primary hernia repair and femoral hernia was treated with mesh repair.

**Table 1: Type of hernia**

Type of hernia	Number of patients	Percentage (%)
Inguinal	78	72.22 %
Incisional	17	15.74 %
Umbilical	11	10.18 %
Femoral	01	0.93 %
Epigastric	01	0.93%
Total	108	100%

**Table 2: Distribution of Different hernias**

Age in years	Number of patients				
	Inguinal Hernia	Incisional Hernia	Umbilical Hernia	Epigastric Hernia	Femoral Hernia
0 - 10	60	0	03	0	0
11 - 20	08	0	02	0	0
21 - 30	04	01	02	0	01
31 - 40	02	01	02	01	0
41 - 50	01	06	02	0	0
51 - 60	02	05	0	0	0
61 and above	01	04	0	0	0
Total	78	17	11	01	01

**DISCUSSION**

The structural differences between males and female may cause variations in both frequency and pattern of hernias. This includes differences in the bony pelvis, the musculofascial layers of the lower abdomen and the descent of the gonads from the retroperitoneum.<sup>[3]</sup>

The predominance of inguinal hernia in this study certainly conforms to general knowledge,<sup>[4]</sup> except that the usual right sided pre-ponderance observed in males which has also been reported by some authors among females to be in the range of 2:1,<sup>[5]</sup> was also observed in this study with greater number of right inguinal of 41 cases and 30 cases of left sided inguinal hernias. The basis for the right sided predominance in males which is the later descent of the testis on the right side is a phenomenon that is non-existent in females. Those who have observed right sided predominance have not been able to attribute it to any scientific hypothesis,<sup>[3]</sup> and as such it may well be considered a chance finding. The embryological basis for the development of inguinal

and umbilical hernias explains why these were the only hernia types found in patients less than 20 years.

Generally, inguinal hernias have been known to be the commonest hernia type irrespective of gender with umbilical, epigastric and femoral hernias ranking next.<sup>[6]</sup> In our series inguinal hernias comprised of 72.22 % followed by incisional hernia of 15.74%. It is however noteworthy that incisional hernia ranked next to inguinal hernia in terms of frequency in this study and in fact more frequent than inguinal hernias in the 41-50 age group. This perhaps underscores the difference in the pattern of hernias observed in females compared with what is generally observed.<sup>[6]</sup>

Incisional hernia is a common long-term complication of abdominal surgery and is estimated to occur in 3% to 13% of laparotomy incisions.<sup>[7]</sup> It may also be a reflection of the increase in the number of surgical operations, particularly obstetric and gynaecological surgeries which are common in this group of patients. Most studies that have evaluated incisional hernias have also reported a

higher incidence in women with majority occurring following obstetric surgeries.<sup>[8-9]</sup> Being a preventable type of hernia, the possibility of its occurrence as a complication of surgery must be taken into consideration and efforts made to prevent its occurrence as much as possible as the number and magnitude of surgical operations continue to increase.

Thairu et al in their study on open inguinal hernias in females questioned the routine use of mesh for open repair of inguinal hernias in females and concluded that its routine use for open indirect hernia repair in females may be unnecessary.<sup>[10]</sup>

Repair of incisional hernias can be technically challenging, and a myriad of methods have been described.<sup>[11]</sup> The most important distinctions in surgical management of incisional hernias are primary versus mesh repair and open versus laparoscopic repair. Primary repairs of incisional hernia include both simple suture closure and components separation. Primary repair by simple suture approximation, even for small hernias (defects <3 cm), is associated with high reported hernia recurrence rates. In a randomized prospective study of open primary and open mesh incisional hernia repairs in 200 patients, investigators from the Netherlands found that after 3 years, recurrence rates were 43% and 24%, respectively.<sup>[11]</sup>

The incidence of umbilical hernia in the adult is largely unknown but most cases are thought to be acquired rather than congenital. It is known to occur more commonly in adult females with a female:male ratio of 3:1. Umbilical hernia is also more commonly found in association with processes that increase intra-abdominal pressure, such as pregnancy, obesity, ascites, persistent or repetitive abdominal distention in bowel obstruction, or peritoneal dialysis. The etiology of umbilical hernia in the adult may be multifactorial, with increased intra-abdominal pressure working against a weak or incomplete umbilical scar.

Umbilical hernias are present in approximately 10% of all newborns and are more common in premature infants. Most congenital umbilical hernias close spontaneously by 5 years. If closure does not occur, elective surgical repair is usually advised. Adults with small, asymptomatic umbilical hernias should be followed clinically.<sup>[11]</sup>

The female pelvis has a different shape to the male, increasing the size of the femoral canal and the risk of hernia. In old age, the femoral defect increases and femoral hernia is commonly seen in low-weight, elderly women. There is a substantial risk of developing a femoral hernia after a sutured inguinal hernia repair. There is no alternative to surgery for femoral hernia and it is wise to treat such cases with some urgency. There are three open approaches and appropriate cases can be managed laparoscopically.<sup>[12]</sup> Gellegos and colleagues noted that the cumulative probability of femoral hernia

strangulation at 3 months and 21 months following diagnosis was 22% and 45% respectively compared to 3% and 4.5% respectively in inguinal hernias.<sup>[13]</sup> The relatively higher rate of complicated femoral hernias may in part be due to the low index of suspicion as some studies have shown that patients particularly females with femoral hernias are less likely to have a groin examination with as high as 40% of cases being missed.<sup>[14-15]</sup>

Epigastric hernia defects are usually less than 1 cm in maximum diameter and commonly contain only extraperitoneal fat, which gradually enlarges, spreading in the subcutaneous plane to resemble the shape of a mushroom. When very large they may contain a peritoneal sac but rarely any bowel. More than one hernia may be present. The most common cause of 'recurrence' is failure to identify a second defect at the time of original repair. Very small epigastric hernias have been known to disappear spontaneously, probably due to infarction of the fat. Small to- moderate-sized hernias without a peritoneal sac are not inherently dangerous and surgery should be offered only if the hernia is sufficiently symptomatic.<sup>[12]</sup>

## CONCLUSION

Inguinal hernias are the commonest hernia type in females in this study. However, in the 4th decade of life incisional hernias predominate. Incisional hernia can be attributed to the usage of absorbable suture material, midline abdominal incision, faulty technique of closure, poor nutritional status of the patient, presence of cough, tuberculosis, jaundice, anaemia and hypoproteinaemia. This can be prevented to some extent by using non-absorbable suture material, good antibiotics to prevent post-operative wound infection and improving the nutritional status.

### Limitation

The retrospective nature of this study and the lack of a standardized follow up schedule may not have allowed for adequate surveillance following surgery.

## REFERENCES

1. Kingsworth A, Le Blanc K. Hernias: inguinal and incisional. *Lancet* 2003; 362:1561-71.
2. Lars N J, Finn G. The role of collagen in hernia genesis. In: Bendavid R et al(ed). *Abdominal wall hernias' principles and management*. 1st ed. New york: Springer verlag: 2001.150-155.
3. Alejandro W, SalvadorV, Denzil G, Alfredo B. Epidemiology of hernias in female. In Bendavid R. et al, (ed). *Abdominal wall hernias, principles and management*.1st Ed. New York: Springer verlag: 2001.613-619.
4. Dabbas N, Adams K, Pearson K, Royle G. Frequency of abdominal wall hernias: is classical teaching out of date? *JRSM Short Rep*. 2011. 19;2(1):5.
5. Czeizel A. Epidemiologic characteristics of congenital inguinal hernia. *Helv Paediatr Acta*.1980;35:57-67.

6. Natalie Dabbas K Adams K Pearson GT Royle. Frequency of abdominal wall hernias: Is classical teaching out of date? JRSM short reports. 2011; 2(1):5.
7. Mudge M, Hughes LE. Incisional hernia: a 10-year prospective study of incidence and attitudes. Br J Surg. 1985;72(1):70-1
8. EA Agbakwuru, EA Agbakwuru, JK Olabanji, OI Alatise, RO Okwerekwu, OA Esimai. Incisional Hernia In Women: Predisposing Factors and Management Where Mesh is Not Readily Available. Libyan Journal of Medicine. 2008;4(2):66-69.
9. Rutkow IM1, Robbins AW. Demographic, classificatory, and socioeconomic aspects of hernia repair in the United States. Surg Clin North Am. 1993;73(3):413-26.
10. Thairu NM, Heather BP, Earnshaw JJ. Open inguinal hernia repair in women: is mesh necessary? Hernia. 2008 ;12(2):173-5.
11. Seymour NE, Berger DH. Abdominal Wall, Omentum, Mesentery, and Retroperitoneum. In: Brunicaardi FC, Anderson DK, Billiar TR et al editors. Schwartz's Principles of surgery. 10th edn. New York: Mc Graw Hill; 2015. p.1449-64.
12. Tulloh B, Nixon SJ. Abdominal wall, hernia and umbilicus. In: Williams NS, O'Connell PR, McCaskie AW editors. Bailey and Love's Short Practice of Surgery. 27th ed. Florida: CRC press; 2018. p.1022-46.
13. Gelleagos NC, Dawson J, Jarvis M, Hobsley M. Risk of strangulation in groin hernias. Br J Surg. 1991;78:1171-3.
14. Nilsson H, Nilsson E, Angeras U, Nordin P. Mortality after groin hernia surgery: Delay of treatment and cause of death. Hernia 2011; 15:301-7.
15. Kjaergaard J, Nielson M, Kehlet M. Mortality following emergency groin hernia surgery in Denmark. Hernia 2010; 14: 351-5.

**How to cite this article:** Singh SR, Singh KD. A Clinical Study on Pattern of Abdominal Wall Hernias in Females. Ann. Int. Med. Den. Res. 2020; 6(1):SG20-SG23.

**Source of Support:** Nil, **Conflict of Interest:** None declared