

Original Research Article

Are rare hernias rarer: a ten-year observational study

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ABSTRACT

Background: Hernia is one of the most common ailments encountered in general surgery practice. The inguinal hernia constitutes majority of cases. The available literature describes umbilical, femoral, lumbar, perineal and many others rarer varieties. Our preliminary observations indicated a changing scenario. With a view to ascertain it, investigations were made to find out the incidence of hernia with frequency data of different types and demographic details of patients during last decade at tertiary care teaching hospital in Pune and then comparing it with the existing literature.

Methods: Ten years data from October 2008 to October 2018 of all the adult population suffering from hernia reporting to this center was collected from the archives of hospital records maintained in OPD, wards and the department.

Results: Inguinal hernia was the most common constituting 76.9% of the total cases. The right side was more affected than the left side with 51.0% cases being on right side. This was followed by umbilical hernia, 12.26% of the total cases. Males were more affected than the females except in incisional hernia. Only two cases of spigelian hernia had undergone repair over last one decade. There were no cases of femoral hernia, lumbar hernia and perineal hernia encountered during the last ten years in this center.

Conclusions: The relative frequency of the incidence of different types of hernia was inguinal, umbilical, epigastric; incisional which have been in descending order. In the last decade at this centre which is in contrast with hernia incidence figures quoted in common reference books and the available literature.

Keywords: Incidence inguinal hernia, Femoral hernia, Rare hernia

INTRODUCTION

Hernia is one of the most common ailments which have affected mankind since ages. Primarily, it is simply a condition in which viscus or a part of viscus protrudes through the wall of cavity containing it. Hernia usually causes more of morbidity and loss of workdays than mortality. As a disease it usually affects the elderly population. The discomfort from the protruding mass brings the patient to the surgical OPD. The use of prosthesis and improvement in the health care facilities

makes it one of the common surgeries being performed in the hospital.

There are various types of hernias, however the most common variety is that of inguinal hernia which have occurrence of varying frequencies ranging from 70 to 75%. The lifetime risk of developing inguinal hernia is 15-27% in men and 3% in women.^{1,2} The probability of requirement of surgery for inguinal hernia is more in males than female.³ The change in body habitus has led to shift in the incidence and prevalence of abdominal wall

hernia repair.¹ In spite of propagation of minimal invasive surgery there has been simultaneous increase in the number of annual laparotomies resulting higher proportion of cases of incisional hernia repair as well as likelihood of more internal hernias.⁴ The other types of hernias encountered are femoral, umbilical, epigastric and few rarer ones. To allow better comparison of different types of hernia repair European Hernia society proposed a classification for uniform taxonomy throughout the world.⁵

The exact statistics of the disease for our country is not known and one has to juxtapose the data available for elsewhere. However, the incidence and burden quoted in various standard literatures sometimes does not seem to match with what is encountered in daily clinical practice.⁶⁻¹² In view of this there is a need to have a detailed account of type of prevailing hernias in our society for facilitating appropriate and quick remedial measures. In this connection our observations on the spectrum of the types of reported hernia indicate a changing scenario with rarer of the hernia disappearing. With these in view a retrospective study was conducted at a Tertiary Care Teaching Centre in Western Maharashtra to find out the incidence of hernia with frequency data of different types and demographic data of patients and then compare the results available with the existing literature to ascertain the actual data on incidence and prevalence of hernias in India.

METHODS

In this retrospective observational study, 10 years data from October 2008 to October 2018 from hospital archives of OPD and ward of a Tertiary Care Teaching Centre in Pune, Western Maharashtra were collected and evaluated. The data included the demography of the patient and the type of hernia. For this age wise distribution of males and females, the type of hernia, laterality, frequency, distribution among males and females, recurrence and types were considered. The excluded cases included congenital hernia and parastomal hernias. These data were analyzed using Microsoft Excel 2016.

RESULTS

The present study revealed that a total of one thousand nine hundred forty-one cases of hernia were treated at the centre during the last decade.

The age wise distribution of various types of hernias amongst males and females is depicted in Figure 1. It is clear that amongst the population studied predominant were males constituting 85.88% of the population studied.

In males out of 1667 cases, 1143 patients had age less than 60 years while in 524 males it was more than 60 years, whereas 234 females were less than 60 years while

remaining 40 were more than 60 years out of total 274 females. Thus, a larger proportion of cases are less than 60 years of age. The mean age of the population was 49.3 ± 17.3 years.

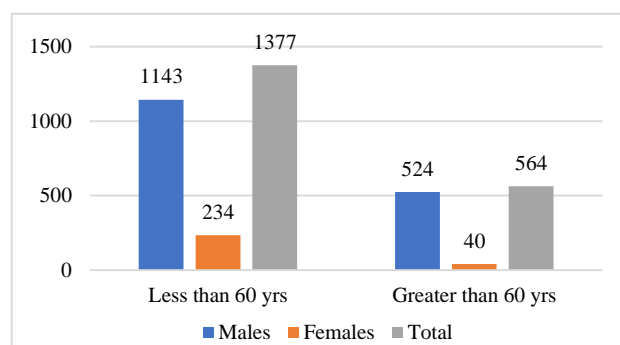


Figure 1: Age wise distribution of the hernia cases.

Of the various types of hernia, it was observed that inguinal hernia was most common, constituting about 78.92% of the total cases studied with a male preponderance that constituted 88.48% of the total inguinal hernia cases (Figure 2).

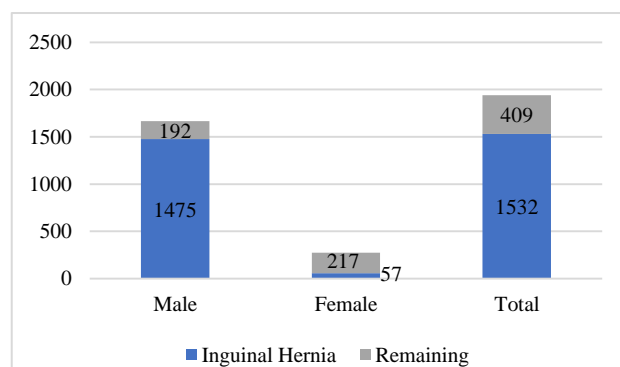


Figure 2: Sex wise distribution of the inguinal hernia cases.

On analyzing the laterality, right side inguinal hernia was found common among both males and females. Right inguinal hernia constituted 51.0% of the total inguinal hernia cases. Bilateral inguinal hernia was seen in 227 male and seven female cases (Figure 3).

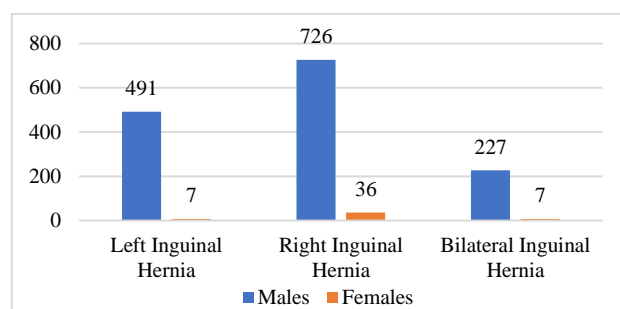


Figure 3: The frequency of the inguinal hernia amongst males and females.

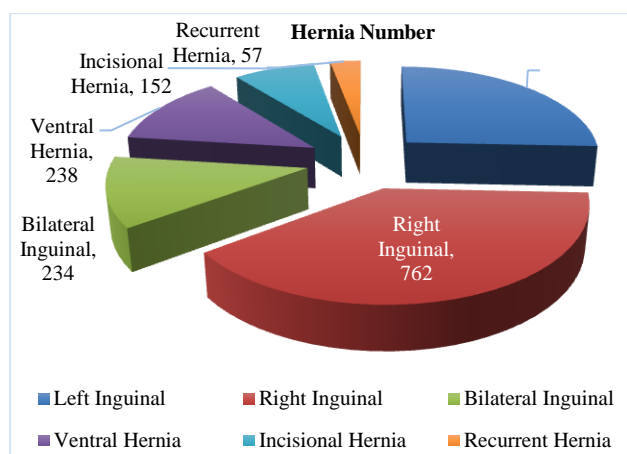


Figure 4: Relative frequency of all the varieties of hernia.

The other varieties of hernia observed in the study are depicted in Figure 4, which indicates the frequency of ventral hernia, incisional hernia and the recurrent hernia. It is clear that the ventral hernia constituted 12.26%, the incisional hernia 7.83% and recurrent hernia 3% of the total cases.

In all the studied cases of hernia males outnumbered females, however in case of incisional hernia, the females constituted higher numbers. The relative frequency of ventral hernia was also higher in females as compared to males where ventral hernia accounted for 34.3% of the total cases and incisional hernia accounted for 40.87% of the total cases.

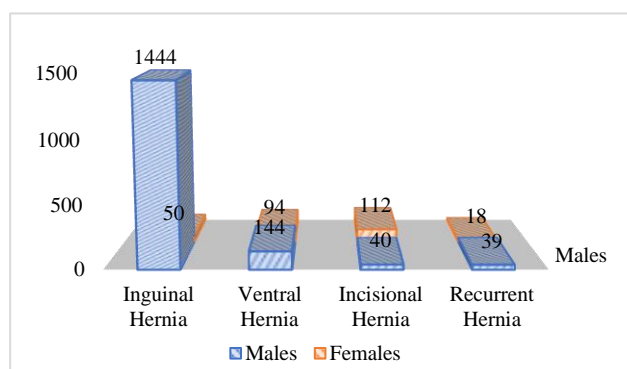


Figure 5: The frequency of the types of hernia encountered among males and females.

Figure 5 depicts the number of different varieties of hernia in males and females. The relative number of ventral hernia cases is more in females as compared to males. It is also evident that relative cases of recurrent hernia are more in females as compared to males (Figure 5).

Further, the ventral hernia affecting the studied population was umbilical hernia and epigastric hernia in both males and females (Figure 6).

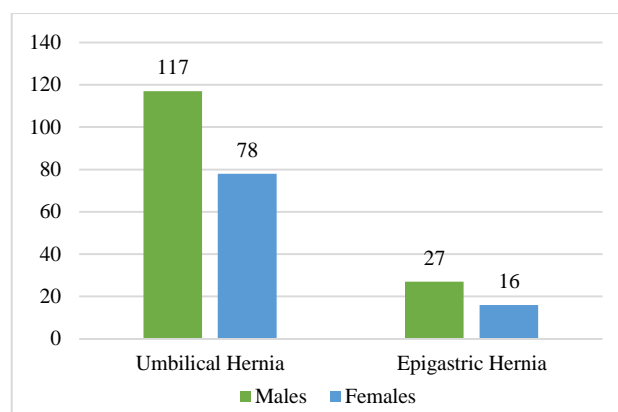


Figure 6: Ventral hernia varieties seen in males and females.

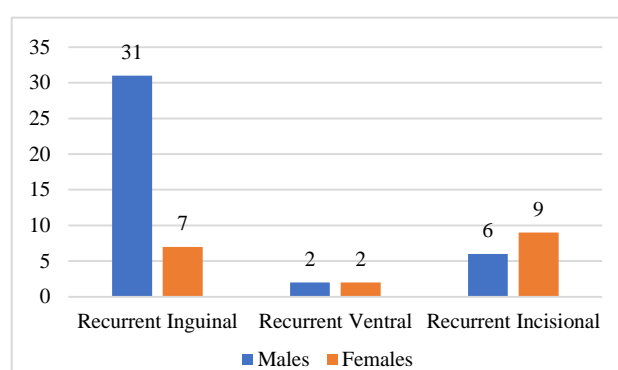


Figure 7: The distribution of different types of recurrent hernia.

DISCUSSION

Hernia repair is one of the most common procedures carried out by surgeon.⁴ It is estimated that annual hernia repairs carried out worldwide is about 20 million.¹³ The life time risk to develop hernia is about 2%.¹ Among the different types of hernias, inguinal hernia is the most common accounting for around 75% of all the abdominal hernias and its risk amongst males is more.² With the use of prosthesis the rate of recurrent hernia has reduced and so also the morbidity that is associated with the surgery. The incidence of incisional hernia is in between 9-20% after one year of the operation.¹⁴

The study by Dabbas et al and Seker et al have already brought out the fact that over the last few decades there has been a change in the frequency of hernia.^{1,4} The body habitus is known to play role in the development of hernia. To provide effective treatment it is imperative to know the status of disease in the society. The burden of the disease as mentioned in the standard textbooks relies primarily on the data from western population. There have been few studies that have mentioned the incidence of hernia.^{1,4,15,16}

This study is one of the largest retrospective surgery carried out in our country in which data of one decade of

the tertiary care centre has been studied and evaluated. Hernia as a disease has affected males more than females. This result is consistent with the other studies that have been carried out in this regard. Males constituted 88.48% of the total cases which is little higher than other studies. Ayesha et al. reported 84.8% cases of inguinal hernia in males.⁸ Balamaddaiah and Reddy in their study on inguinal hernia had 79.2% of male patients and 20.8% as female's hernia.¹⁷ Some of the studies have attributed the lower proportion of the female cases because of under reporting by females in our society.¹⁸ Nevertheless the males have been more affected than females as per the available literature.

Amongst females the incisional hernia constituted the largest proportion in our study. It accounted for about 40.8% of the total cases amongst females. The ventral hernia also was relatively seen more in females. These findings are consistent with the findings of Dabbas et al, Seker et al and Sangwan et al.^{1,4,18} The low rates of recurrent cases are attributed to improved surgical facilities at the tertiary care centre and use of prosthesis in nearly all the cases.

The right-side inguinal hernia is more common than the left side. In our study the right sided inguinal hernia constituted 51% of the total cases. This finding is consistent with the findings of others and the likely cause being the late descend of right testis and persistent right processus vaginalis.

With the advancing age the risk for development of inguinal as well as abdominal hernia increases due to weakness of abdominal muscles and obesity. The changing body habitus has been attributed to increase in the number of ventral hernia cases.¹ In another study by Pradeepa et al, the prevalence of obesity in the population of western Maharashtra is about 15.4% and there has been an increase in the prevalence of obesity in the urban population due to change in lifestyle as well as the food habits.¹⁹

The mean age of the studied population in this study was 49.3±17.3 years. Less than 60 years of age constituted a larger proportion of the cases with the median age of study population being 52 yrs. This correlates with other studies where a bimodal age distribution of hernia has been described, first peak in the first decade which includes cases of congenital hernia and second peak in fifth or sixth decade for acquired hernia either the groin hernia or the ventral hernia.²⁰

In this study abdominal wall hernia constitutes 12.2% of the total cases studied with larger proportion being umbilical hernia. The prevalence of abdominal wall hernia increases with advancing age with possibility of 4% of the population above 45 years of age being at a risk of developing the disease.

In the standard text books of surgery the other most common type of groin hernia described is femoral hernia. In our analysis of the last decade of the records available not even a single case was encountered at this centre. It is possible that since femoral hernia is more common in females, the patient never availed health care facility for the same. However, the relative percentage mentioned around 7% in the text, absence of even single case cannot be explained with the above reason. Femoral hernia is mentioned as the third most common primary hernia in Sabiston textbook of Surgery and further the male: female ratio of inguinal hernia as 25:1 and for femoral hernia it is 1:10. The findings of inguinal hernia are nearly same in our study however the same does not apply for femoral hernia.⁹ Bailey and Love textbook of Surgery in its 25th edition had mentioned femoral hernia as the third most common primary hernia but the same is not mentioned in the latest 27th edition of the book. The male: female ratio of paraumbilical hernia is 1:5 which does not match with the findings of the present study.¹⁰

As far as umbilical hernia is concerned certain textbooks do mention of it being more common in females. However, our study suggested it being more common in males as far as the absolute numbers is concerned. In the subgroup analysis, umbilical hernia constituted 28.4% of the total hernia cases amongst females and constituted 7.01% in males. Certain textbooks do mention that it is more common in females, with obesity and stretching of the abdominal musculature being implicated as the reason for increase prevalence in females.

Some of the other hernias which have been mentioned rare and were not seen in this study included Lumbar hernia, Obturator hernia, Perineal hernia and Sciatic hernia. The etiopathogenesis for developing hernia is multifactorial and body habitus is known to play a role in the development of hernia. This study is one of the largest retrospective study carried out in our country and the results from this study possibly suggests that prevalence of different types of hernia could possibly be different from the Western literature. A larger multi-centric population-based study including primary health centers is probably required to ascertain the prevalence and burden of the disease and to adjudge the real magnitude of the problem in our country.

Studies have suggested that the average age of population had changed in the UK and also the frequency of the abdominal hernia increased over the period of time.¹ The incisional hernia cases are seen more in females, probably due to the females having undergone to caesarean section and cholecystectomies. The above findings and our observations suggest further consolidation and a need for larger population based multicentered study to know the actual burden of disease in the different geographic regions.

CONCLUSION

The most frequently encountered cases of hernia were inguinal hernia. It was more common in males than females. The most common form of hernia among females was incisional hernia. However, no case of femoral hernia, obturator hernia, lumbar, perineal hernia were encountered in this study. The real incidence of these rare hernias in the Indian subcontinent may require a multicentric prospective observational study to ascertain if rare hernia is getting rarer.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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