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Determining the clinic-demographic profile and associated risk factors of inguinal hernia: A prospective observational study

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Abstract

Objective: To determine the clinic-demographic profile and associated risk factors of inguinal hernia.

Methodology: This observational study was conducted among 65 patients who attended Surgery OPD of Government Hospital Sarwal, Jammu for inguinal hernia repair or recurrence. All the study subjects who had come to the hospital with complaints of groin swelling with or without pain were examined.

Results: Among the 65 patients included in the study, most of them were men (72.3%) with a mean age of 44.11 years. (49.2%) and had predominantly right-sided hernia. Most of the patients presented late to the hospital due to the lack of awareness of the disease. Strenuous activity such as lifting weights followed by constipation, smoking and family history was the common risk factors.

Conclusion: Late presentation of disease is the hallmark of this disease in rural areas due to the lack of awareness. Increasing awareness of the disease among general population will lead to inguinal hernias being detected at earlier stage and will decrease the morbidity due to this disease.

Keywords: Hernia, risk factors, strenuous activity

Introduction

Hernia is Latin term meaning rupture of a portion of structure. It can be defined as an “abnormal protrusion of a viscus or part of a viscus through a normal or abnormal opening in the wall of its containing cavity”.^[1]

Abdominal wall hernias are common, with a prevalence of 1.7% for all ages and 4% for those aged over 45 years. Inguinal hernias account for 75% of abdominal wall hernias, with a lifetime risk of 27% in men and 3% in women^[2].

Obstructed hernias are the most common cause of intestinal obstruction in India, whereas adhesions are the cause in the west. Although appears innocuous most of the time, it can become life-threatening when it is complicated. Cure of inguinal hernia can only be brought by surgery^[3, 4].

The surgical repair was revolutionized when Bassini in 1887 described his technique. Basically, Bassini regarded the posterior wall of the inguinal canal as the weak structure to be repaired. It is well known that he did this by joining the medial part of the arch of the conjoint tendon, to the inguinal ligament.

Since then, many modifications have taken place and being practiced. The fact that they are a large variety of operations suggests that many of the questions of both pathophysiology and management of this condition remains un-addressed^[5, 6]. Hence the present study aimed to study the incidence and etiology of inguinal hernia in adults.

Materials and methods

This observational study was conducted among 65 patients who attended Surgery OPD of Government Hospital Sarwal, Jammu for inguinal hernia repair or recurrence. All the study subjects who had come to the hospital with complaints of groin swelling with or without pain were examined.

Informed consent and ethical approval

The study protocol was reviewed by the Ethical Committee of the Hospital and granted ethical clearance. After explaining the purpose and details of the study, a written informed consent was obtained.

Data collection

Demographic details were taken by means of a questionnaire, which included the patient's identity, family history, life style habits, nature of job, and duration of swelling, cough, constipation and co morbidities.

Methodology

A thorough clinical examination was performed by the surgeon and the nature of the examination, privacy and confidentiality was explained to the patient. Details of the hernia, such as the type of hernia, primary or recurrent, time gap between present and the primary operation, nature of mesh used, time of recurrence and nature of the final repair were also noted.

The patient was palpated at each groin to observe if there was a visible and clearly palpable hernia, a palpable impulse or a previous operational scar. Clearly visible hernias were identified by a visible lump. If its neck was continuous with the inguinal canal or directed backwards into the abdomen, it was diagnosed as a palpable hernia. If there was no visible lump, the scrotum was invigilated by the little finger to reach the external ring, and the subject was asked to cough, in order to determine whether there was a palpable impulse. Scarring at the site was taken as recurrence of hernia.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages. The statistical tests applied for the analysis were Pearson's chi-square test (χ^2) and student t-test. For both the tests, confidence interval and p-value were set at 95% and ≤ 0.05 respectively.

Results

Table 1: Demographic distribution of the study population

Age	N	%
<40	12	18.5
40-60	32	49.2
>60	21	32.3
Mean \pm SD	44.11 \pm 1.14	
Sex		
Male	47	72.3
Female	18	27.7
Total	65	100

Table 2: Distribution according to type of hernia

Hernia type	N	%
Primary	46	70.8
Recurrent	19	29.2
Total	65	100

Table 3: Distribution according to side involved

Side involvement	N	%
Right side	32	49.2
Left side	18	27.7
Bilateral	15	23.1
Total	65	100

Table 4: Distribution of risk factors in the study population

Risk factors	N	%
Lifting heavy objects	33	50.8
Constipation	17	26.1
Smoking	7	10.8
Family history	5	7.7
Others	3	4.6
Total	65	100

Discussion

In the present study, the most common affected age group was 40-60 years. This was in concordance with a study by Balram *et al*, wherein, 42-50 years age group was the most common age group [7]. Bimodal peaking among the young and the elderly was observed in some other studies [8].

In present study, primary hernia was more common than recurrent hernia. Both primary and recurrent hernia was more common in males than in females. The preponderance of males to females was also seen in other studies [9, 10]. This preponderance of hernia in males was might be attributed to the fact that here was involvement of more strenuous exercises and lifting of weights by them and the anatomical differences between the two.

49.2% of the patients had right side hernia followed by left. Bilateral hernia was seen in the least number of patients. Other workers also reported similar results [11] This dominance was similar in both the genders equally. The cause for the right side predominance was said to be due to late fall down of the testis and more frequent failure of closure of right processus vaginalis [12]

Strenuous activity such as lifting weights followed by constipation, smoking and family history was the common risk factors for the development of inguinal hernia in our study. Increased intra-abdominal pressure has long been suspected in the pathogenesis of inguinal hernia, though with little quantitative evidence. In his study conducted by Constance *et al* [13] did not find an association with factors that might exert an effect through such a mechanism, including physical activity, constipation, chronic cough, and chronic obstructive pulmonary disease. An increased risk of inguinal hernia with greater physical exertion was found in two Spanish hospital-based case-control studies. Other factors that might increase intra-abdominal pressure were not associated with inguinal hernia in previous studies, with the exception of an increased risk with constipation in the Dutch study.

Conclusion

The present study concluded that; predominance of males over females. Right side occurrence is more common and the main risk factors are straining or lifting heavy objects and constipation. Late presentation of disease is the hallmark of this disease in rural areas due to the lack of awareness. Increasing awareness of the disease among general population will lead to inguinal hernias being detected at earlier stage and will decrease the morbidity due to this disease.

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