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A study to assess the prevalence and risk factors of inguinal hernia

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Abstract

Background: Hernia is a protrusion of any viscous from its proper cavity. Inguinal hernias being more frequent. The present study was conducted to assess the prevalence and risk factors of inguinal hernia. The present study was conducted to assess the prevalence and risk factors of inguinal hernia.

Material and methods: The present study was carried out among 320 adults who had come to the surgery outpatient department for inguinal hernia repair or recurrence over the period of 2 years. The demographic details were taken by means of a questionnaire. A thorough clinical examination was performed by the surgeon. Details of the hernia were also noted. Scarring at the site was taken as recurrence of hernia. Statistical analyses were performed using SPSS version 21.0 statistical software (SPSS, Chicago, IL).

Results: In the present study total patients were 320. Maximum patients 36.56% were of age group 31-40yrs and minimum (4.68%) were of age group 20-30yrs. Primary hernia was 76.56% and recurrent hernia was 23.43%. Period of swelling was less than one year for majority (56.25%) of the patients, while the least of them had swelling for more than 2 years (10.93%). The most common side where the hernia was observed was on the right side (46.87%), followed by the left side (31.25%). 21.87% patients had inguinal hernia on both the sides (bilateral). The most common cause for the presence of hernia was lifting heavy objects (44.37%).

Conclusion: This study concluded that maximum patients were of age group 31-40yrs and minimum were of age group 20-30yrs. Primary hernia was more. Period of swelling was less than one year for majority of the patients. The most common side where the hernia was observed was on the right side. The most common cause for the presence of hernia was lifting heavy objects.

Keywords: Hernia, Inguinal hernia, risk factors

Introduction

Hernia is the protrusion of an organ through an abdominal opening in the muscle wall of the cavity that surrounds it ^[1]. It may be congenital or may result from the failure of certain structures to close after birth or may acquire later in life because of obesity, muscular weakness, surgery or illness ^[2]. Inguinal hernia is one of the most common surgical pathology. It is the most common form of abdominal wall hernia and occurs more frequently among adult men. Well over one quarter of adult men in the united states of American would be expected to have a medically recognized inguinal hernia ^[3]. It is very common in men with lifetime risk of 27% and 3% for women ^[4]. Inguinal hernia repair is a commonly performed general surgery procedure in both adults and children with inguinal hernias constituting more than 95% of all groin hernia repairs ^[5]. The common sites of herniation are the groin, umbilicus, Linea Alba, semilunar line of Spiegel, diaphragm and surgical incisions ^[6]. Repair of the inguinal hernias is one of the most common operations in the general surgery, with rates ranging from 10 per 100,000 of the population in England and about 28 per 100 000 in the United States ^[7]. The well known risk factors and causes of the inguinal hernias have been reported as increased abdominal pressure, pre-existing weakness of abdominal muscles, straining during defecation, heavy lighting of weights, obesity, pregnancy etc. Although several hypotheses regarding the ethology of inguinal hernia have been proposed, large-scale data on the occurrence of inguinal hernia may provide further understanding to the pathophysiology of inguinal hernia development ^[8]. The present study was conducted to assess the prevalence and risk factors of inguinal hernia.

Material and methods: The present study was carried out among 320 adults who had come to the surgery outpatient department for inguinal hernia repair or recurrence over the period of 2

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years. Before the commencement of the study ethical approval was taken from the ethical committee of the institute and written informed consent was obtained from the patients. All the study subjects had come to the hospital with complaints of groin swelling with or without pain. The demographic details were taken by means of a questionnaire, which included the patient's identity, Family history, Life style habits, Nature of Job, Duration of swelling, cough, constipation and comorbidities. A thorough clinical examination was performed by the surgeon. 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 invaginated 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. Data obtained was tabulated using Microsoft Excel (MS Excel 2010, Microsoft Corporation). Statistical analyses were performed using SPSS version 21.0 statistical software (SPSS, Chicago, IL).

Results: In the present study total patients were 320. Maximum patients 36.56% were of age group 31-40yrs and minimum (4.68%) were of age group 20-30yrs. Primary hernia was 76.56% and recurrent hernia was 23.43%. Period of swelling was less than one year for majority (56.25%) of the patients, while the least of them had swelling for more than 2years (10.93%). The most common side where the hernia was observed was on the right side (46.87%), followed by the left side (31.25%). 21.87% patients had inguinal hernia on both the sides (bilateral). The most common cause for the presence of hernia was lifting heavy objects (44.37%).

Table 1: Age wise distribution of the patients

Age group	N (%)
20-30	15(4.68%)
31-40	117(36.56%)
40-50	113(35.31%)
50-60	75(23.43%)
Total	320(100%)

Table 2: Types of hernia

Type of hernia	N (%)
Primary hernia	245(76.56%)
Recurrent hernia	75(23.43%)
Total	320(100%)

Table 3: Period of swelling

Period of swelling	N (%)
<1 years	180(56.25%)
1-2 years	105(32.81%)
≥2 years	35(10.93%)
Total	320(100%)

Table 4: Side of hernia

Period of swelling	N (%)
Right	150(46.87%)
Left	100(31.25%)
Bilateral	70(21.87%)
Total	320(100%)

Table 5: Risk factors for inguinal hernia

Risk factors	N (%)
Family history	45(14.06%)
Smoking	112(35%)
Alcoholism	118(36.87%)
Lifting heavy objects	142(44.37%)
COPD	127(39.68%)
Bowel disturbances	132(41.25%)
Diabetes	88(27.5%)
Benign hypertrophy of prostate	23(7.18%)
Unknown	21(6.56%)

Discussion

Hernia is of different types such as abdominal wall hernia, indirect inguinal hernia, direct inguinal hernia, femoral hernia, umbilical hernia, Richter hernia, incisional hernia, spiling

hernia, obturation hernia, hiatal hernia, reducible hernia, incarcerated hernia and strangulated hernia^[9]. Inguinal hernia occurs in the groin (the area between the abdomen and thigh).¹⁰ Strangulation is the most important and potentially threatening complication of hernia^[11].

In the present study total patients were 320. Maximum patients 36.56% were of age group 31-40yrs and minimum (4.68%) were of age group 20-30yrs. Primary hernia was 76.56% and recurrent hernia was 23.43%. Period of swelling was less than one year for majority (56.25%) of the patients, while the least of them had swelling for more than 2years (10.93%). The most common side where the hernia was observed was on the right side (46.87%), followed by the left side (31.25%). 21.87% patients had inguinal hernia on both the sides (bilateral). The most common cause for the presence of hernia was lifting heavy objects (44.37%).

Indrani Basu *et al.* study showed that the incidence of inguinal hernia was 42 to 57 years^[12].

A study by Balram *et al.*, wherein, 42-50 years age group was the most common age group in Jalaun, Uttar Pradesh^[13].

It is relatively less common in adolescent age groups. This evidence was not supported by many studies. But in some studies it is shown that age distribution is bimodal peaking at early childhood and old age^[14].

Russel *et al.* Found a 57% incidence of inguinal hernia^[15].

The incidence of hernia was higher among males who were addicted to smoking (13.63%). The risk factor of smoking was not found in females. All of these males had an inguinal hernia. Smokers have a fourfold risk of hernia^[16] Studies of connective tissue from patients with inguinal hernia have shown that smoking may be associated with hernia formation due to a defective connective tissue metabolism^[17].

In a study, the overall recurrence rate was 30.30%^[18] and smoking and age were the major risk factors for recurrence^[19].

Kumar *et al.* wherein 68% of the patients had swelling for less than 1 year^[8]. In the study by Balram *et al.* where the right side hernia was the commonest. 6.9% of the patient in his study

showed bilateral hernia^[13]. 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 processes vaginalis^[20, 21].

Conclusion

This study concluded that maximum patients were of age group 31-40yrs and minimum were of age group 20-30yrs. Primary hernia was more. Period of swelling was less than one year for majority of the patients. The most common side where the hernia was observed was on the right side. The most common cause for the presence of hernia was lifting heavy objects.

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