

## Original Research

### Prevalence and Risk Factors of Inguinal Hernia: A Study in a Semi-Urban Area

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#### ABSTRACT:

**Background-**The protrusion from the bodily cavity through the epithelial duct is termed herniation. this can be the foremost common style of hernia and affects chiefly men. It is commonly said to be related to aging and repeated strain to the abdominal muscles. The prevalence of the wall hernia is estimated to be 1.7% for all ages and 4% of these who are over 45 years old. The inguinal hernias account for 75% of the abdominal hernias with a life time risk of 27% in males and three within the females. **Aim and objectives-** to determine the prevalence and risk factors of inguinal hernia. **Materials and Method-** Patients were palpated at each groin to look at if there was a visual and clearly palpable hernia, a palpable impulse or a previous surgical scar. Clearly visible hernias were identified by a visual lump. Diagnosis as a palpable hernia was made if its neck was continuous with the epithelial duct or directed backwards into the abdomen. If there was no visible lump, the scrotum was invaginated by the tiny finger to succeed in the external ring, and also the subject was asked to cough, so as to see whether there was a palpable impulse. **Results-** Primary inguinal hernia was seen in, 76.6 % males of the primary hernias diagnosed, while in females, the incidence of primary hernias was 23.4%. Recurrent hernias were seen in 84.2% males of the recurrent cases while it was 15.8% in females. The most common cause for the presence of hernia was lifting heavy objects in 52.4% and improper bowel movements, largely which was constipation, seen in 47.7% of the patients. 30.6% had diabetes and 40.5% had chronic Obstructive Pulmonary Disease. **Conclusion-** Predominance of males over females within the time of life group within the incidence of primary and recurrent hernia. Right side occurrence is more common and also the main risk factors are straining or lifting heavy objects and irregular bowel movements. These kind of studies have to be conducted in every region so it may be helpful for future studies in prediction of the prevalence of inguinal hernias.

**Keywords-** Chronic Obstructive Pulmonary Disease, Benign Hypertrophy Of Prostate, Urethral Strictures

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#### INTRODUCTION-

A hernia occurs when an organ of the body pushes itself through a gap within the muscle or tissue that's imagined to hold it in situ. This kind of hernia is commonest within the abdominal region. This opening or the orifice may be a defect within the innermost layer of the abdomen and therefore the hernia is outpouch of the peritoneum. Wall hernias only occur in certain areas namely, where aponeurosis and fascia are destitute of the protective support of musculus. These is also acquired through muscular atrophy, surgery or trauma. Therefore the common sites of hernia include the groin, umbilicus and also the linea alba.<sup>1</sup> The protrusion from the bodily cavity through the epithelial duct is termed herniation. This

can be the foremost common style of hernia and affects chiefly men.<sup>2</sup> It is commonly said to be related to aging and repeated strain to the abdominal muscles. The prevalence of the wall hernia is estimated to be 1.7% for all ages and 4% of these who are over 45 years old. The inguinal hernias account for 75% of the abdominal hernias with a life time risk of 27% in males and three within the females.<sup>3</sup> Repair of the inguinal hernias is one among the foremost common operations within the general surgery, with rates starting from 10 per 100,000 of the population in England and about 28 per 100 000 within the us.<sup>4</sup> Ninety five per cent of patients presenting to medical care are male, and in men the incidence rises from 11 per 10 000 person years aged 16-24 years to 200 per

10 000 person years aged 75 years or above.<sup>5</sup> The well-known risk factors and causes of the inguinal hernias are reported as increased abdominal pressure, pre-existing weakness of abdominal muscles, straining during defecation, heavy lifting of weights, obesity, pregnancy etc. Although several hypotheses regarding the etiology of hernia are proposed, large-scale data on the occurrence of hernia may provide further understanding to the pathophysiology of hernia development.<sup>6</sup> This study was conducted with the intention of identifying the varied forms of herniation observed in our area furthermore as their risk factors.

**MATERIALS AND METHODS-**

The present study was conducted as an observational study at a private medical college on 200 adults who had come to the OPD for hernia repair or recurrence over a period of two years. The subjects were entered into the department with complaints of groin swelling with or without pain. An intensive clinical examination was performed by the surgeon and also the nature of the examination, privacy and confidentiality was explained to the patient and also the details of the hernia, were also noted down. After obtaining consent from all the participants, demographic details were gathered with the assistance of a questionnaire, including the patient’s identity, case history, life style habits, nature of job, duration of swelling, cough, constipation and other comorbidities. The patients were palpated at each groin to look at if there was a visual and clearly

palpable hernia, a palpable impulse or a previous surgical scar. Clearly visible hernias were identified by a visual lump. Diagnosis as a palpable hernia was made if its neck was continuous with the epithelial duct or directed backwards into the abdomen. If there was no visible lump, the scrotum was invaginated by the tiny finger to succeed in the external ring, and also the subject was asked to cough, so as to see whether there was a palpable impulse. Scarring at the positioning was considered as recurrence of hernia.

**RESULTS-**

Out of the 200 patients, 79% patients were males and 21% were females. 34.7% of the patients were aged between 46-60 years, which was the commonest age group, followed by 31-45 years with 30.4% of the patients (Table 1). Period of swelling was less than one year for majority of the patients, while the least of them had swelling for more than 2 years (Table 2). Primary inguinal hernia was seen in, 76.6 % males of the primary hernias diagnosed, while in females, the incidence of primary hernias was 23.4%. Recurrent hernias were seen in 84.2% males of the recurrent cases while it was 15.8% in females (Table 3). The most common cause for the presence of hernia was lifting heavy objects in 52.4% and improper bowel movements, largely which was constipation, seen in 47.7% of the patients. 30.6% had diabetes and 40.5% had chronic Obstructive Pulmonary Disease. 39.1% of the patients were alcoholics and 36.2% of them were smokers (Table 4). 47% of the hernia were present in the right side. (fig.1)

**TABLE-1 Distribution according to age**

Age	Percentage
18-30	3.2%
31-45	30.4%
46-60	34.7%
61-75	21.5%
>75	10.2%

**Table 2: Period of swelling**

Period of swelling	Number	Percentage
< 1 years	112	56.4%
1-2 years	61	30.9%
>2 years	27	12.7%

**Table- 3: Prevalence of primary and recurrent hernia among men and women.**

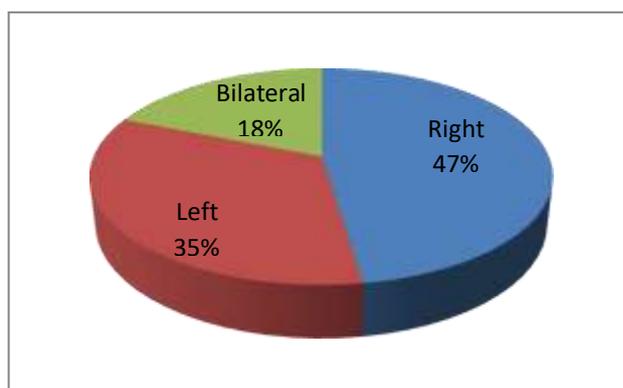
	Primary hernia (%)	Recurrent hernia (%)	Total (%)
Male	76.6%	84.2%	160.8 (79.2%)
Female	23.4%	15.8%	39.2 (20.8%)

**Table 4: Risk factors for inguinal hernia**

Risk factors	Percentage
Family history	14.5%
Smoking	36.2%
Alcoholism	39.1%
Lifting heavy objects	52.4%

COPD	40.5%
Bowel disturbances	47.7%
Old Age (>60 years)	27.7%
Ascitis	14.7%
Diabetes	30.6%
Benign hypertrophy of Prostate	6.2%
Urethral strictures	15%
Unknown	5.2%

**Figure 1: Side of hernia**



**DISCUSSION-**

A hernia occurs when an enclosed a part of the body pushes through a weakness within the muscle or surrounding tissue wall. In many cases, hernias cause no or only a few symptoms, although you will notice a swelling or lump in your tummy (abdomen) or groin. The lump can often be pushed back in, or will disappear once you change posture. Coughing or straining may make the lump appear. Hernia is taken into account a complication of PD. The pathophysiology relies on the concept of increased abdominal pressure (mechanical effect) affecting a weak paries.<sup>7</sup> In the present study, the foremost common affected people was 46-60 years followed by 30-45 years. This was in concordance with a study by Balram et al, wherein, 42-50 years people was the foremost common age bracket in Jalaun, state.<sup>8</sup> This was just like other studies like Sayanna et al and Basu et al.<sup>9,10</sup> a way younger people was shown to possess more prevalence of hernia in an exceedingly study by Kumar et al, 20-49 people perceived to have almost 0% of the burden. Hernia was seen to be less common among the adolescents.<sup>6</sup> Bimodal peaking among the young and also the elderly was observed in another studies.<sup>11</sup> 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 like Balram et al, Sayanna et al, Gulzar et al and Ruhl et al.<sup>8,9,12,13</sup> This preponderance of hernia in males was attributed to the actual fact that here was involvement of more strenuous exercises and lifting of weights by them and

therefore the anatomical differences between the 2.<sup>8</sup> Most of the patients (57.1%) had swelling for fewer than a year before they came to the OP. This was in accordance to a study by Kumar et al wherein 68% of the patients had swelling for fewer than 1 year.<sup>6</sup> this is often because most of the patients don't seek medical attention till the pain or discomforts limits their daily activity. In most of the cases, the hernia is reducible i.e. pushed into the abdomen when lying down or putting pressure thereon. In some cases irreducible hernia occur which cause complications like obstruction, incarceration and strangulation. 48% of the patients had right side hernia followed by left. Bilateral hernia was seen within the least number of patients. Similar was the case within the study by Balram et al where the correct side hernia was the most common. 6.9% of the patient in his study showed bilateral hernia.<sup>8</sup> Other workers also reported similar results.<sup>14-16</sup> This dominance was similar in both the genders equally. The cause for the proper side predominance was said to ensue to late drop of the testis and more frequent failure of closure of right processus vaginalis.<sup>17,18</sup> The main risk think about present study was lifting of heavy weights (52.4%) followed by bowel disturbance which accounted for 46.7% of the cases. Smoking and diabetes were other common reasons for hernia. Hernia because of heavy object lifting was common in an exceedingly similar study by Kumar R et al, 48.8% had hernia because of lifting heavy objects, with smoking habits and chronic cough being the opposite common risk factors. The occupation of the many of the boys was farming, hauling construction, lifting weights at the factory etc.

These factors increase the abdominal pressure during cough or straining, which further increase the danger of herniation. A study in USA reported that hernia was related to older age, obesity, greater height, chronic cough or rural residence.<sup>19</sup> Family history was another important factor contributing to occurrence of hernia in patients. This was concurred by others like Lau et al and Junge et al, who also predicted hernia if a friend previously had it.<sup>20,21</sup> Diet, diseases and private habits of the patients are known to affect and cause recurrence of herniation.<sup>22</sup>

#### CONCLUSION-

The present study shows a predominance of males over females within the time of life group within the incidence of primary and recurrent hernia. Right side occurrence is more common and also the main risk factors are straining or lifting heavy objects and irregular bowel movements. These kind of studies have to be conducted in every region so it may be helpful for future studies in prediction of the prevalence of inguinal hernias.

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