



Assessment of Clinico-Epidemiological Report and Risk Factors of Inguinal Hernia in Surgical Unit of General Hospital Onitsha (March 15th to June 15th)



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Abstract

Background: Inguinal hernia is the most common general surgical condition that is seen worldwide. If delayed or not repaired, it can lead to the death of the patient. We conducted Joint research to understand the clinico-epidemiological status of inguinal hernia in general hospital Onitsha.

AIM: to assess the clinical epidemiological status and assessment of risk factors for inguinal hernia.

Methodology: this study was done among 100 patients during March 15th to June 15th, 2021 (my surgery posting) who were admitted to the surgery department of general hospital Onitsha for inguinal hernia surgery. All the subjects were studied and examined, tabulated, and analyzed.

Results: among 100 patients, most of them were men (89%) with the mean age of 52.75+, artisans 51% by occupation. 35% were in low socioeconomic status while middle class were more in population (49%). Most of them were in the age of 30-60years (80%), then 7% in the age group of >70yrs. On query regarding symptoms, 75% of them complained of groin swelling, and 15% of them complained of swelling down to the right or left scrotum. Less than half of them complained of groin pain and sensation of heaviness in the scrotum. On clinical examination, right sided (67%), left sided (23%) and bilateral (10%) were found respectively in the study. All were indirect inguinal hernias respectively. Most of the hernias were reducible (57%). Strangulated hernias were less in our study (25%). During our observation on risk factors of inguinal hernia, 51% carried heavy weight, 17% were smokers and the rest were more than age of 40yrs. Most of our hernia repair procedures were Bassini repair (54%), Shouldice repair (30%), both Mesh repair and Lichtenstein's repair were (6%) respectively, and De sarda repair (4%). All were totally open procedures done in our facility.

Keywords: Inguinal hernia; Epidemiology; Risk factors; Study population; Respectively and patients

Introduction

Hernia was coined from Latin, meaning "abnormal protrusion of a viscus or part of a viscus through a normal or abnormal opening in the wall of its containing cavity". Generally, inguinal hernias are 10 times more common in men than in women and more on the right side than in the left side [1,2]. A distinction was made between direct and indirect inguinal hernia, external oblique hernia, pantaloon hernia, and ventral hernia. worldwide, there are more than 20 million inguinal hernia cases per year. Very often hernia as a disease is ignored especially in under-developed and developing countries as they may remain asymptomatic for prolonged periods, the severity is often overlooked and ultimately

it results in higher mortality as high as 7% in emergency surgeries [3-5]. Inguinal hernia can be congenital or acquired [5]. There are associated risk factors which includes heavy weightlifting, obesity, increased intra-abdominal pressure, trauma, smoking, constipation or diarrhea, older age (50-70 yrs.), chronic cough, connective tissue disease and pregnancy.

Clinical signs and symptoms include groin swelling in the left or right inguinal region, it can extend to the scrotum, it can be painless or painful, which describes a sharp and intermittent pain, sometimes, they complain of an aching or heavy feeling in their groin area. On examination, in most cases, the swelling is

felt on cough impulse. It can be reducible or irreducible. Other observations like tenderness, skin color changes and obese conditions.

Investigations like x-ray can be of little value, ultrasound which is low cost and operator dependent which are the investigation that is occasionally used in the facility, but the condition can be detected on physical examination by a good medical diagnostician. Management plan for hernia includes herniotomy in small children because of the presence of the processus vaginalis, herniorrhaphy in adults. These repairs include Bassini, Shouldice, De sarda's, Mc Avay and Lichtenstein which is used in the facility. Early complications of this condition include pain, bleeding, urinary retention, anesthetic related, middle complications include seroma, wound infection and late complications like chronic pain and testicular atrophy.

In Onitsha, there is insufficient record or data on the clinical and epidemiological report of patients presenting with inguinal hernia and this research may provide further understanding to the associated risk factors of inguinal hernia development and may estimate the prevalence, age and gender differences. This included data will help to reduce the burden of hernia in general hospital Onitsha.

Materials and Method

During March 15th to June 15th, 2021, this study was carried out precisely among 100 patients who were clinically diagnosed with primary inguinal hernia and admitted to the surgical ward of general hospital Onitsha for theatre surgery. Necessary information regarding relevant history, risk factors, clinical data, examination findings and operation theatre procedure logs were recorded in a questionnaire, then tabulated and analyzed by SPSS (VERSION 24.0) software.

Inclusion criteria

- Patient's age >18 years having primary inguinal hernia.
- Only elective cases were included.

Those who willingly gave informed consent.

Exclusion criteria

- Patient's age < 18 years.
- Recurrent hernias.
- Previous history of operated for contralateral inguinal hernia.
- History of surgery for any groin or ventral hernia in the past.
- Patients being operated on for coexisting with other surgical conditions including ventral hernias were excluded.
- A well-informed written consent was taken from each

patient prior to being enrolled into this study.

Results

100 patients were drafted in this survey, mean age was 52.7+9.55 and majority of the patients belong to the 30-50yrs.age group. Heightening frequency noted in early age and in old age (Figure 1). Among 100 patients 89 were male and only 11 were female (Figure 2) (Tables 1 & 2).

The profession that came on top were the artisans (carpenters, bricklayers, and masons) 51% while the businessmen were 21%, civil serv-ants, 18%, farmers, 3%, tertiary students, 2%, others, 5% (Table 3).

In this survey, 35% of the patients were in low socioeconomic status, while 49%, which the greater percentage were middle class, 16% were higher socioeconomic class respectively (Table 4).

On inquiry, regarding symptoms of inguinal hernia, 75% complained of groin swelling, 15% complained of swelling down to the left or right scrotum (inguinoscrotal swelling), the remaining 10% complained of other symptoms like groin pain, sensation of heaviness in the scrotum, features of obstruction and strangulation respectively (Table 5).

On clinical examination, right sided mass, 67%, left sided mass was 23% and bilateral mass was 10%. All were indirect. 57% were reducible, 65% were simple hernia and less were complicated (35%) (Tables 6).

During our inquiry, risk factors for inguinal hernia, 51% carried heavy weight, 17% were smokers, history of obesity, trauma, chronic cough, older age(50-70yrs.), constipation, others were noted in 5%, 7%, 10%, 5%, 3%, and 2% of survey patients respectively (Table 7).

Most common hernia repair were the Bassini repair in 54% of the survey patients, followed by Shouldice repair procedure in 30% patients, all 100% were total open procedures and no laparoscopic procedures were done in our facility (Table 8).

Discussion

Among 100 patients, most of them were men with mean age of 52.75+9.55 that corresponds with other studies [6-8]. Also, Ngowe et al (Cameroon) found a greater mean age of 60yrs as well as Konate et al in 2010, 50.5yrs. (Senegal) and Ourahaman in Morocco (49.7yrs.) [9-11]. Therefore, surveying the age distribution, most of the patients in this report were in the age group of 30-60yrs (80%), followed by <20yrs (13%). This type of bimodal rise was found among the elderly and the young in other studies [6,7,12]. The fragility of the anatomical structures with age answers the question regarding the occurrence of hernias in the elderly. Strenuous activities requiring physical effort are associated with the development of hernia in young adults.

Table 1: Age distribution of patients in the study population.

Age Distribution of Study Patients(n=100)	No of Patients(n=100)	Percentage (%)
<20years	13	13%
30-40 years	25	25%
40-50 years	34	34%
50-70 years	21	21%
>70 years	7	7%
Total	100	100%

Table 2: Sex of the study population.

Sex of the Patients	No of Patients	Percentage (%)
Male	89	89%
Female	11	11%
Total	100	100.00%

Table 3: The table below shows the occupational status of the study population.

Occupational status	No of Patients	Percentage (%)
Artisans	51	51%
Businessmen	21	21%
Civil servants	18	18%
Farmers	3	3%
Tertiary students	2	2%
Others	5	5%
Total	100	100%

Table 4: Socioeconomic status of the study population.

Socioeconomic Class Survey	No of Patients	Percentage (%)
Low class	35	35%
Middle class	49	49%
High class	16	16%
Total	100	100%

Table 5: Symptoms of inguinal hernia seen in our facility

Symptoms	No of Patients	Percentage (%)
Groin swelling	75	75%
Inguinoscrotal swelling	15	15%
Groin swelling + others like groin pain, sensation of heaviness in the scrotum, features of obstruction and strangulation	10	10%
Total	100	100%

Table 6: Clinical examination of inguinal hernia in the study patients.

Types of Hernia	Number of Patients(n=100)	%
Indirect		
Right indirect	67	67
Left indirect	23	23
Direct		

Right direct	0	0
Left direct	0	0
Pantaloon		
Left pantaloon	0	0
Right pantaloon	0	0
BILATERAL	10	10
TOTAL	100	100
Reducibility		
Reducible	57	57
Irreducible	43	43
TOTAL	100	100
Simple or Complicated		
Simple	65	65
Obstructed	20	20
Strangulated	15	15
TOTAL	100	100

Table 7: This table indicates the distribution of patients according to risk factors present (n=100).

Risk Factors for Inguinal Hernia	No of Patients	Percentage (%)
Heavyweight lifting	51	51%
Smokers	17	17%
Chronic cough	10	10%
Trauma	7	7%
Obesity	5	5%
Older age (50-70 years)	3	3%
Constipation	5	5%
Others	2	2%
Total	100	100%

Table 8: Different surgical procedure done in study population.

Operative Repairs	No of Patients (n=100)	Percentage (%)
Open procedure		100%
Bassini	54	
Shouldice	30	
Lichtenstein's procedure	6	
Mesh plug repair	6	
De Sarda's repair	4	
Mac Avay's repair	0	
Laparoscopic procedure	0	0%
Total	100	100%

Inguinal hernias are noticed to be more in low socioeconomic class. However, this survey does not correspond with the other research because most of our patients were in middle class (49%) while low and high socioeconomic class were 35% and

16% respectively. Prior to the prevalence in gender, Kammo et al in [13] (Cameroon) matched the same percentage with our own study. He even explained further with some authors that this male dominance is due to the anatomical difference between the male

and female sex. In men, the inguinal canal is crossed by the cord which makes it weak, which is not the same for women whose inguinal canal contains only the round ligament.

In this survey, right inguinal hernia was more common than the left, approximately ratio of 2.91:1 and 10% of the cases were bilateral which corresponds similarly with some other studies. The socio professional statuses were different, and artisans were dominant in 51% of this case. This result coincides with that of Diop et al and Rouet et al who were ranking a dominant figure of 67% and 72% respectively. Concerning symptoms, swelling was the main reason for consultation (90%), it was inguinal (groin swelling) 75% and inguinoscrotal (swelling down to the left or right scrotum) 15%. The result is slightly more than that of sanogo [14] in Mali who found swelling in 72.62% of the patients.

In our survey, heavy weightlifting and smoking were the most common risk factors in our facility. Other common risk factors in our survey: history of obesity (5%), trauma (7%), chronic cough (10%), older age(>50yrs.), constipation (3%) and others (2%) were totally different from that of Robinedera Kour et al. [15] and some other studies. Constance et al organized a survey that found out older age, chronic cough, obesity, and others were associated risk factors for inguinal hernia and were supported by much research like Lau. H et al [12] and Junge et al [16] which showed that family history is an important predictor for development of inguinal hernia as well as recurrent hernias but in this study, there was no information regarding family history in our study but neither family history was excluded nor specified as "OTHERS" in this survey [17-20].

Regarding treatment modalities, surgery was our most important treatment (herniorrhaphy) and it has different open procedure but we performed 6 open surgical procedures in 100 total survey patients which the facility provided us with [21-25]. No laparoscopic procedure was recorded in the operation theatre log records. The most common operation in our survey was the Bassini repair (54%) which is easy to learn and perform although some authors have similar views because they choose the bassini procedure to be performed in complicated surgeries (strangulated or obstructed). Among open procedures, the most common hernia repair procedure was the bassini procedure in 54% followed by Shouldice procedure (30%) [26,27]. Laparoscopic repair was not done/recorded in our facility due to financial restraints and lack of sponsorship in the hospital.

Conclusion

From this survey, we found out that males are more affected than females. Right sided and indirect hernia is more commonly seen in our facility. Most of our patients came from the middle socioeconomic class. Most of the socio professional status were artisans. Main risk factors are weightlifting heavy objects, smoking, history of obesity, constipation, older age, trauma, chronic cough, and others. The major complaints of the patients

were mostly groin swelling and bassini repair procedure was the most common hernia repair used in our facility.

Author's Contribution

Okonkwo CK: Evaluation and optimization of all patients and compilation of results.

Okonkwo VS: Data entry, SPSS analysis and review of article.

Okonkwo SC: Provided expert in clinical opinion.

All authors edited and approved the manuscript prior to submission.

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