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A CLINICAL STUDY OF INGUINAL HERNIA AND ITS MANAGEMENT IN THE GENERAL SURGICAL PRACTICE AT TERTIARY CARE MEDICAL INSTITUTION

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Abstract

Background: Inguinal hernias are frequently encountered in surgical practice. Early analysis and elective repair is a safe and effective approach for patients of all ages that keep away from incarceration, strangulation, and complications and reduces morbidity and mortality. **Aim and Objective:** To study inguinal hernias and their management at a tertiary care hospital at NCMCH. **Material and Methods:** 60 cases of inguinal hernia admitted in NC Medical College and Hospitals were selected by purposive sampling method. All the cases were clinically suspected and diagnosed with inguinal hernia, above 12 years of age. All subjects underwent detailed clinical and radiologist examination and data was recorded. Post-operative follow-up was done to assess the complications. **Result:** Our study showed that indirect inguinal hernia (80%) was the more common than direct inguinal hernia (20%). 96.67% was reported unilateral hernia (Right 56.67% and Left 33.33%) and bilateral hernia in 6.67% of the cases. In 58.33% of cases, the bowel was the hernial content and in 41.67% of cases, omentum was the hernial content. It was observed that postoperative complications were very minimal i.e. wound infections (5%), groin pain (3.33%), hematoma (3.33%), scrotal swelling (1.67%), and recurrence (1.67%). **Conclusion:** The prevalence of inguinal hernia is increasing nowadays. The study concluded that hernioplasty (51.67%) is a better surgical choice for controlling hernia. For the better

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management of hernia, there is a need for awareness in the population that might also help detect it at an advanced stage and reduce the disorder's morbidity.

Keywords: Inguinal Hernia, Postoperative Complications, Medical Institution

Introduction

Inguinal hernia is the most common condition generally encountered by surgeons to identify and confirm the presence of an inguinal hernia [1]. Globally, inguinal hernia is the most common type of hernia, comprising approximately 75% of all abdominal wall hernias [2]. Inguinal hernia repair is one of the most common general surgical operations worldwide accounting for 10 - 15% of all surgical procedures and is the second most common surgical procedure after appendectomy [3,4]. In addition, a patent processus vaginalis on the contra lateral side is seen in nearly 40% of patients with a symptomatic unilateral hernia. However, the mere presence of processes vaginalis does not always indicate that it will become symptomatic in the future. The congenital inguinal hernia has a higher familial occurrence [5], In the presence of an inguinal hernia, many related genital problems such as undescended testes, cystic fibrosis, bladder exstrophy, increased intra-abdominal pressure, increased peritoneal fluid, and connective tissue disorders may contribute [6]. The incidence of inguinal hernia is 19, 57,850 in India every year reported[7]. The management of inguinal hernia depends upon the duration and type of presentation. Delay in the treatment may lead to visceral organ strangulation with additional risks of gangrene, perforation, and infection of the peritoneal cavity. A higher rate of morbidity and mortality was reported in developing countries due to delays in reporting, lack of modern surgical facilities, and delay in treatment [8]. Early diagnosis and elective repair are safe and effective strategies for patients of all ages that avoid incarceration, strangulation, and complications [9]. Several studies have reported that two third of hernias are indirect and nearly two third of recurrent hernias are direct [10]. The inguinal hernia has approximately 10% incidence of incarceration and a portion of these may be strangulated. The recurrence rate is less than 1% in children and varies in adults according to the method of repair [11].

The study was conducted for the better management of hernia and to study the factors associated with it that might help detect it at an early stage and reduce the disorder's morbidity.

Materials and Methods

The present prospective, hospital-based study was undertaken in the Department of General Surgery, at NC medical college and Hospital, Panipat. Ethical clearance was obtained from the institutional ethical committee. Informed consent was obtained from all the cases before starting the study.

A total of 60 cases clinically suspected and diagnosed with inguinal hernia attending in the General Surgery OPD and emergency department above 12 years of age were recruited for the study. Patients with primary groin hernias, both unilateral and bilateral groin hernias, patients aged 11 to 70 years, and ASA Grade 1 to 3 were included in the study. In the medical examination the general situation, aspect, type of swelling, type of hernia, and type of difficulty were studied. They have been investigated by plain X-ray abdomen erect view, X-ray Chest PA view, ECG, and baseline investigations like blood sugar, urea, creatinine, whole haemogram, urine examination, bleeding time, and clotting time completed for all cases. Surgical control

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changed into performed in all cases. The maximum of the surgical procedure turned into performed in spinal anesthesia, few were done in general anesthesia. during the surgery, the type of hernia, the type of content material, and the significance of the hernia had been cited. Postoperative all cases were followed up regularly. In the observed wound contamination, hematoma, pain, scrotal swelling, and recurrence were noted. Recurrent Inguinal hernias, femoral hernias, previous per-peritoneal surgery, and ASA Grades 4&5 were excluded from the study.

Statistical Analysis: The data were entered into Microsoft Excel and analyzed using SPSS version 16 to compute the frequency and percentages. The relevant data of the 60 cases were tabulated by using suitable statistical methods.

Result and Observation:
Out of the 460 cases who were admitted to the surgical ward in NCMCH, Panipat,50 had inguinal hernias.

Table1. 1: Demographic details of study participants.

Variables (Years)	**Frequency**	**Percentage**
11-20	2	3.33
21-30	4	6.67
31-40	8	13.33
41-50	13	21.67
51-60	15	25
61-70	18	30

As shown in table no. 1.1, the incidence of hernia was high in old age i.e above 60 years (30%) followed by 51- 60 years (25%), 41-50 years (21.67%), 31-40 years (13.33%), 21-30 years (6.67%) and 11-20 years (3.33%)

Table 1.2: Onset of symptoms (In months)

Variables (months)	**Frequency**	**Percentage**
0-1	2	3.33
2-3	6	10
3-4	10	16.67
5-6	17	28.33
7-8	12	20
9-10	8	13.33
11-12	5	8.34

In table no. 1.2, among the study sample, the symptoms were studied and it was found that a majority of the cases reported onset of symptoms between 6-7 months (28.33%), followed by 4-5 months (16.67%), 9-10 months (13.33%), 2-3 months (10%), 11-12 months (8.34%), and 0-1 months (3.33%) respectively.

Table 1.3: Types of Hernia

ISSN: 0975-3583,0976-2833 VOL14, ISSUE6, 2023

types	Frequency	Percentage
Direct	12	20
Indirect	48	80

Table no.1. 3 revealed that indirect inguinal hernia was found in the majority of cases (80%) and 20% of cases had direct inguinal hernia

Table1. 4: Liberality of Hernia

Liberality of Hernia	Frequency	Percentage
Right	36	60
Left	20	33.33
Bilateral	4	6.67

The unilateral hernia was seen in 96.67% of cases (Right 56.67% and Left 33.33%) and bilateral hernia in 6.67% of cases as observed in Table no.1.4

Table1. 5: Content of the Hernia

Content of hernia	Frequency	Percentage
Bowel	35	58.33
Omentum	25	41.67

Table no. 1.5 shows that In 58.33% of cases, the bowel was the Hernial content and in 41.67% of cases, omentum was the Hernial content.

Table 1.6: Complications of presentation

Complications on presentation	Frequency	Percentage
Irreducible	10	16.67
Obstructed	6	10
Strangulated	3	5

The present study shows that irreducibility was seen in 16.67% of cases, obstruction by hernia in 10% , and strangulation of hernia in 5% of cases. (Table no. 1.6)

Note: the Duration of surgery was on an average 90 minutes per surgery

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Figure 1: Types of the operative procedure

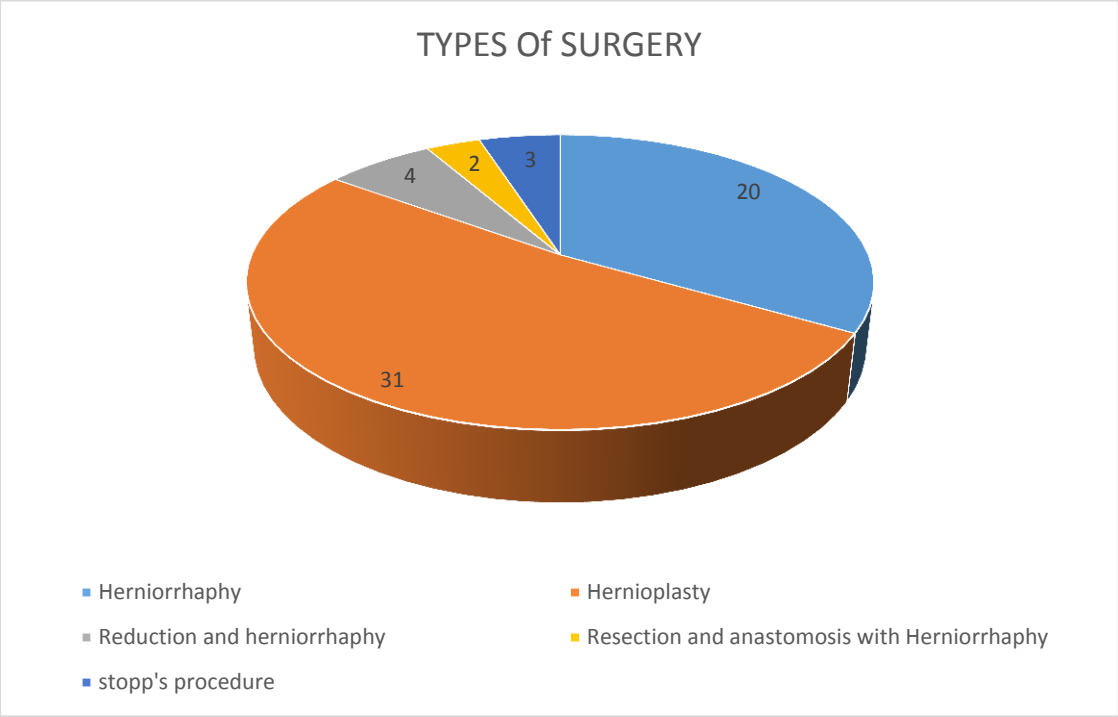

Table No.1.7 Types of Operative Procedure

Types of surgery	Frequency	Percentage
Herniorrhaphy	20	33.33
Hernioplasty	31	51.67
Reduction and herniorrhaphy	4	6.67
Resection and anastomosis with Herniorrhaphy	2	3.33
Stopp's procedure	3	5

Table No.1.7 depicts that Hernioplasty (51.67%) was the most common operative procedure used to manage the cases followed by Herniorrhaphy (33.33%), stoppa's procedure (5%), reduction with Herniorrhaphy (6.67%) and resection partly and anastomosis with Hernioplasty (3.33%)

ISSN: 0975-3583,0976-2833 VOL14, ISSUE6, 2023

Table 2: Post-operative complication in study participants.

Complications	Frequency	Percentage
Wound Infections	3	5
Groin Pain	2	3.33
Hematoma	2	3.33
Scrotal Swelling	1	1.67
Recurrence	1	1.67

In table no.2 we observed that post-operative complications were very minimal i.e. wound infections (5%), Groin pain (3.33%), Hematoma (3.33%), Scrotal swelling (1.67%) and recurrence (1.67%)

Table 3: Complications following the nature of Surgery.

Complications	Frequency	Percentage
Herniorrhaphy	3	5
Hernioplasty	2	3.33
Reduction and Herniorrhaphy	2	3.33
Resection and anastomosis with Herniorrhaphy	1	1.67

Herniorrhaphy (5%), Hernioplasty (3.33%), Reduction and Herniorrhaphy (3.33), and Resection and anastomosis (1.67) were respectively causes of nature surgery, as shown in table no. 3

Discussion

An inguinal Hernia does not heal on its own and must be treated due to the significant risk of strangulation or detention. In our study total of 60 cases clinically diagnosed with inguinal hernia were studied. Regarding age distribution, the majority of cases were above 60 years (30%), followed by 51- 60 years (25%), 41-50 years (21.67%), 31-40 years (13.33%), 21-30 years (6.67%) and 11-20 years (3.33%). A study by Singh S et al. included 51.85% of cases between the 45-64 years age group, 31.48% of cases between 15-44 years, and 16.67% of cases above 65 years [12]. A study by Pulin Ch Kumar and Paul Pratik reported that out of 50 hernia cases, the majority of cases were falling under the age group of 50-60 years (30%) and very less numbers below 20 years [13]. A study by Hariprasad and Srinivas observed the majority of cases with complicated inguinal hernias between the age group 51-60 years (22.5%) [14]. Our study was matched with the findings of Prakash S et al., who reported the majority of cases between 60-69 years (37.1%), followed by 50-59 years (28.6%) [15]. In the present study also supported by Bhanu Prasad Nagula et al the incidence of inguinal hernia was most common in people of the 5th decade and above age group. Hernioplasty (58%) was the preferred surgical option in the management of hernia.

ISSN: 0975-3583,0976-2833 VOL14, ISSUE6, 2023

Increasing awareness in the general population may help detect at an earlier stage and will reduce the disease morbidity[16], as observed by our study.

Our study reported the majority of onset of symptoms between 6-7 months (28.33%), followed by 4-5 months (16.67%), 9-10 months (13.33%), 2-3 months (10%), 11-12 months (8.34%), and 0-1 months (3.33%). In this study, irreducibility was seen in 16.67% of cases, obstruction by hernia in 10% of cases, and strangulation of hernia in 5% of cases (Table 1). Similar findings observed by Pulin Ch Kumar and Paul Pratik reported [13].
It was reported that 80% of cases had indirect inguinal hernia and 20% of cases had direct inguinal hernia. The unilateral hernia was seen in 96.67% of cases (Right 56.67% and Left 33.33%) and bilateral hernia in 6.67% of cases. A study by Rao SS et al. noticed direct hernia in 16.39%, and indirect hernia in 83.61% of cases. Unilateral right side hernia was seen in 57.38%, left side in 36.07%, and bilateral in 6.56% of cases [9]Right-sided hernias tend more to present with features of strangulation than left side; $p < 0.044$ which is statistically significant, observed by Pulin Ch Kumar and Paul Pratik [13]. A study by Prakash S et al. reported that right-sided hernias are most complicated than left-sided [15]. The results of the present study were comparable with the results of the above studies where more cases had right side hernia than left side and bilateral hernia cases are very less.

In 58.33% of cases, the bowel was the hernial content and in 41.67% of cases, omentum was the hernial content. A study by Rao SS et al., reported that the content of the hernia sac was large bowel in 1.64%, omentum in 13.11% of cases, and none in 85.25% cases [8]. The result of the present study was consistent with the above studies where more cases had hernia content as bowel.

The average duration of surgery was 90 minutes (Table 1). In this study, hernioplasty (51.67%) was the common operative procedure used to manage the cases followed by herniorrhaphy (33.33%), stoppa's procedure (5%), reduction with herniorrhaphy (6.67%) and resection and anastomosis with hernioplasty (3.33%) (Figure 1). A study by Pulin Ch Kumar and Paul Pratik reported various operative procedures to manage inguinal hernia i.e. reduction and hernioplasty in 56% of cases, omentectomy and herniorrhaphy in 6% of cases, resection of bowel with hernioplasty in 32% cases, resection of bowel with stoma formation with herniorrhaphy in 4%, appendectomy with herniorrhaphy in 2% cases [13].

In this study, postoperative complications were very minimal i.e. wound infections (5%), groin pain (3.33%), hematoma (3.33%), scrotal swelling (1.67%), and recurrence (1.67%) (Table 2). A study by Rao SS et al. found postoperative complication rate was only 4.92% [9]. A study by Singh S et al., noticed postoperative complications like hematoma in 3.70% of cases, seroma in 5.65% of cases, and infection in 3.70% of cases [12]. A study by Prakash S et al., reported wound infection in 11.5% of cases, seroma in 2.8% of cases, and death in 5.7% of cases as postoperative complications. However, no complications were observed in 80% of cases [16]. Wound infection was the leading postoperative complication in all the studies. Occurrence of pain, neuralgia or surgical site infections in the post-operative phase of an inguinal hernia repair may sometimes have deleterious effects on the overall patient outcome.

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Conclusion

Hernia repair is the gold standard measure for training the residents in any hospital. The results indicated that right-sided inguinal swelling (60%) was more common than on the left side (33.33%). The bowel was the most common hernial content. post-operative complications were very minimal i.e. wound infections (5%), groin pain (3.33%), hematoma (3.33%), scrotal swelling (1.67%), and recurrence (1.67%). The incidence of postoperative complications was more in old-age cases. Once an Inguinal Hernia is developed, early surgical intervention in the form of inguinal Herniplasty is the most appropriate management of an inguinal hernia otherwise it can lead to complications. So, there is a need for awareness in the population that might also help detect at an advanced stage and reduce the disorder's morbidity.

Competing interests

None declared

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ISSN: 0975-3583,0976-2833 VOL14, ISSUE6, 2023

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