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Study on Complicated Inguinal Hernia

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Abstract

An inguinal hernia is one of the most common problems in routine surgical practice. Uncomplicated hernia possess no difficulty as many advanced techniques are available for repair. In our set up patients present very late and with complications either because of illiteracy or ignorance of patients, In the study 38% were of middle aged (51–60 years) and 28% patients were aged between 61–80 years. 2 patients were below the age of 20 and 3 patients were above the age of 80. 96% of operative wounds were drained by negative suction drain. In 86% of cases postoperative period was uneventful and patient recovered completely. In the present study the infection rate was 12%. Seroma collection and induration were found in 1(2%) patients each. The morbidity in this group was 16%. There were no long-term-post operative complications with respect to recurrence of hernia and condition of local scar.

Keywords: Complicated Inguinal Hernia.

Introduction

An inguinal hernia is one of the most common problems that we face in routine surgical practice. Uncomplicated hernia possess no difficulty as many advanced techniques are available for repair. In our set up patients present very late and with complications either because of illiteracy or ignorance. Complications generally occur in indirect inguinal hernias in form of irreducibility, obstruction, inflammation and strangulation.

Management of these complicated hernias differs from the management of uncomplicated hernias.

Most important is morbidity and mortality associated with these complicated hernias, because generally the patients of complicated hernia are of older age group and have some sort of compromised cardiorespiratory function. This study was carried out to describe the presentation and management of such patients.

Aims and Objectives

1. To study the incidence of complications in inguinal hernia, such as irreducibility, obstruction, strangulation and incarcerated inguinal hernia.
2. To study the incidence of level of obstruction.
3. To study the incidence of morbidity and mortality in these patients.

Material and Methodology

Materials

- *Study Settings:* Department of General

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Surgery in a large teaching public health hospital. All the cases were examined clinically, investigated and operated. The procedure, post-operative complications duration of hospitalisation and the recurrence rates was studied.

- *Study period:* Two year.
- *Sample Size:* 50 Cases.
- *Study Type:* Retrospective Study.

Inclusion Criteria: Patient presenting with

- Lower abdominal pain and inguinoscrotal pain.
- Associated with multiple episodes of vomiting.
- Swelling over inguinal region.
- Fever.
- Exaggeration of pain on heavy exercise and straining.

Exclusion Criteria

Patients with uncorrected coagulopathies are excluded from the study.

Results

Table 1: Complication with Respect to the Type of Repair and Surgery

Procedure	Complication				Total	%
	Seroma	Induration	Infection	Death		
Herniorrhaphy	0	0	0	0	0	0
Omentectomy with Herniorrhaphy	0	0	0	0	0	0
Resection and Anastomosis with Herniorrhaphy	0	0	1	0	1	2
Meshplasty	1	1	5	0	7	14
Omentectomy With Meshplasty	0	0	0	0	0	0
Resection and Anastomosis and Meshplaty	0	0	0	0	0	0

Complication with respect to the type of repair and surgery performed. One patient who was treated by herniorrhaphy with resection and anastomosis of small bowel developed wound infection, and 5 patients following meshplasty develop wound infection. One patient of meshplasty had postoperative induration and seroma of wound developed which responded to broad spectrum antibiotic treatment (Table 1).

Table 2: Type of Hernia

Type	No of patients	Percentage
Only irreducible hernia	37	74
Obstructed hernia	12	24
Strangulated hernia	1	2

In the present study majority (74%) of patients presented with an irreducible hernia. 2% of the patients had a strangulated hernia; these findings suggest painful, irreducible swelling is one of the presenting symptoms, thus preventing other complications in hernia by timely surgical intervention. Also taking into consideration the small number of patient studied the probable incidence of patients presenting with signs and symptoms of obstruction or strangulation cannot be known for which further detailed studies are required (Table 2).

Discussion

Age Distribution

In the study most of the patients 38% were of middle aged (51–60 years) and 28% patient of 61–80 years of age while 2 patients were below the age of 20 and 3 patients were above the age of 80. Due to the active lifestyle, inguinal hernia is more common in middle age group which can progress to complication later on as seen in present study.

In the study by Sanjay Prakash[3] the average age of the patients was 62 year (range: 50–70 years).

In the study by Manish Baria[1], the average age of the patients was 71 year (range: 26–92 years).

In the study by Hariprasad *et al.*[2], the average age of the patients was 60 year (range: 44–74 years).

In the study by Ernesto *et al.*[5], the average age of the patients was 71 year (range: 26–92 years).

In the study by J. A. Alvarej *et al.*[4], 66.7% patients were over 65 years of age and the mean age of the patients were 70 + 15.2 years ranging from 24 to 96 years.

Chief complain of the patients

From the study it is evident that a painful irreducible swelling was the chief complain of most of the patients. A few patients presented with signs and symptoms of obstruction and strangulation. Most of the time a hernia tends to get complicated when it is of a large size and if such a swelling is associated with

pain, then even those patients, who ignore swelling, seek medical advice for pain. Thus painful irreducible inguinoscrotal swelling warrants a careful scrutiny and management to prevent further complications. Most of the patients had a right sided hernia.

Sanjay Prakash *et al.*[3] reported 63% cases presenting with vomiting, constipation, abdominal distention, nausea etc. suggestive of obstruction and 14% patients had signs of peritonitis.

Hariprasad *et al.*[2] reported 30% cases presenting with vomiting, constipation, abdominal distension, nausea etc. suggestive of obstruction and 12% patients had signs of peritonitis.

Manish Baria *et al.*[1] reported 20% cases presenting with vomiting, constipation, abdominal distention, nausea etc. suggestive of obstruction and 2% patients had signs of peritonitis.

Ernesto *et al.*[5], reported 90.69% cases presenting with vomiting, constipation, abdominal distention, nausea etc. suggestive of obstruction, and 19 cases (44.18%) had dehydration and 55.8% patients had signs of peritonitis.

In the study by J.A. Alvarej *et al.*[4] 99 (67.3%) patients presented with signs and symptoms of mechanical bowel obstruction, and 133 patients (90.5%) presented with irreducible swelling and pain at local site.

Previous history of inguinal swelling

Most of the patient except 3, had previous history of inguinoscrotal swelling (an uncomplicated hernia) but they did not seek medical advice. In these patients the hernia eventually progressed to a complication for which urgent medical advice became necessary. There were 6% of patients in whom an inguinoscrotal swelling had appeared and complication taken place simultaneously at the time of admission.

In the study by Manish Baria *et al.*[1] 46 cases (92%) presented with a history of inguinal swelling.

In the study by J. A. Alvarej *et al.*[4] 74 cases (50.3%) presented with a history of inguinal swelling.

In the study by Ernesto *et al.*[5] 10 cases (23.2%) presented with recurrent inguinal swelling and 33 cases (76.7) presented with primary inguinal hernia.

Types of hernias present

In our study 37 (74%) patients had irreducible inguinal hernia, 1 (2%) patients had strangulated inguinal hernia and 12 (24%) patients had obstructed inguinal hernia.

In the study by Sanjay Prakash[3] (14%) presented with strangulated inguinal hernia and (23%) patients presented with incarcerated inguinal hernia.

In the study by Hariprasad[2] (30%) presented with strangulated inguinal hernia and (70%) patients presented with incarcerated inguinal hernia.

In the study by Manish Baria[1] 6(12%) presented with strangulated inguinal hernia and (80%) patients presented with incarcerated inguinal hernia.

In the study by J.A. Alvarez *et al.*[4], 61(41.4%) presented with strangulated inguinal hernia and 85 (57.8%) patients presented with incarcerated inguinal hernia.

All patients in the study of Ernesto *et al.*[5] strangulated hernias.

Procedure

All the patients in the present study were managed by operative intervention as early as possible. It was evident in peroperative findings that there was strangulation in one patient and resection of non-viable bowel was carried out. In 1 patient there was an omentocele and omentectomy was carried out taking into consideration the inflammation of entrapped omentum. In 12% of obstructed hernias, the obstruction was at deep inguinal ring.

The condition of bowel was dependent upon the duration of time spent before arriving to hospital. After the onset of complication when more than 12 hours had passed, the bowel was non-viable and resection and anastomosis was necessary in 2% cases.

Mesh repair was carried out in most (92%) of patients. Herniorrhaphy and mesh repair along with omentectomy or with resection of bowel was done in rest of the patients. Thus even in emergency hernia repair the treatment of the pathology (relief of obstruction or removal of dead tissue) as well as the etiology (weakness of abdominal wall) can be tackled simultaneously.

In the study by Manish Baria[1], herniorrhaphy in 16%, omentectomy and herniorrhaphy in 10%, herniorrhaphy with resection and anastomosis of small intestine was carried out in (14%) cases and hernia repair with meshplasty in 40% and omentectomy with meshplasty in 20%.

In the study by Hariprasad[2], herniorrhaphy in 75%, omentectomy and herniorrhaphy in 12.5%, herniorrhaphy with resection and anastomosis of small intestine was carried out in (10%) cases.

In the study by Sanjay Prakash[3], herniorrhaphy in 82.8%, omentectomy and herniorrhaphy in 8.6%, herniorrhaphy with resection and anastomosis of small intestine was carried out in (8.6%) cases.

In the study by Ernesto *et al.*[5], hernia repair with meshplasty with resection and anastomosis of small intestine was carried out in 4 (5.7%) cases.

Drain

Ninety six percent of operative wounds were drained by negative suction drain.

In the study by Manish Baria[1], drain was put in 96% patient.

In the study by Ernesto *et al.*[5], drain was put in 79.06% patient.

Radiological investigation

Radiological investigations as evident from present study are very useful in the diagnosis of obstruction and strangulation. Multiple air and fluid levels were seen in X-rays abdomen standing film in 26% of patients suggestive of obstruction.

Ultrasonography when performed by an experienced senior sonologist can detect free fluid in peritoneal cavity, dilated bowel loops (26%), the thickness of the intestinal wall in the sac, presence of fluid in the sac (formation of abscess) and presence of omentum in the sac.

In the study by Hariprasad[2], 25% patients showed multiple air fluid levels

In the study by Manish Baria[1], 20% patients showed multiple air fluid levels and 20% had dilated bowel loops in various radiological investigations.

In the study by Ernesto *et al.*[5], 83% patients showed multiple air fluid levels and 90.6% had dilated bowel loops in various radiological investigations.

In the study by J.A Alvarez *et al.*[4], 43.5% patients had multiple air fluid levels present.

Complication

In 86% of cases postoperative period was uneventful and patient recovered completely. The infection rate was 12%. Seroma collection and induration were found in 1 (2%) patients each. The morbidity in this group was 16%.

The seroma collection was aspirated and induration was treated with broad spectrum antibiotics.

In the study by Hariprasad[2], 22.5% patients had wound infection, 36.5% patients had seroma, hematoma and wound dehiscence.

In the study by Manish Baria[1], 10% patients had wound infection, 10% patients had seroma, hematoma and wound dehiscence.

In the study by Ernesto *et al.*[5], 6% patient had seroma, 3% patients had wound infection and 1% patients had incisional hernia.

In the study by J.A. Alvarez *et al.*[4], 28.6% patients had wound infection, 14% patients had seroma, hematoma and wound dehiscence.

Recurrence

All these patients had no long-term post operative complications like recurrence of hernia and scare related complications.

The morbidity and mortality of complicated hernias can be improved significantly by considering them as a medical and surgical emergency. Appropriate radiological investigations, resuscitation and fluid and electrolyte management, successful repair and careful postoperative management improves the outcome.

In the study by Hariprasad *et al.*[2], reported recurrence rate was 0%.

In the study by Manish Baria *et al.*[1], reported recurrence rate was 0%.

In the study by J.A. Alvarez *et al.*[4], reported recurrence rate was 0%.

Conclusion

From the present study it is evident that most patients of complicated inguinal hernias have painful irreducible inguinoscrotal swellings; which if not taken care of progress to obstruction and strangulation. Patient of irreducible hernias have thus to be clinically examined for a complication, resuscitated, investigated (more importantly with x-rays abdomen standing/lying down and ultrasonography) and must be prepared for emergency surgical intervention. In most of these patients the obstruction was at deep inguinal ring and along with repair of the defect in the abdominal wall by mesh repair or herniorrhaphy, resection of the gangrenous bowel or omentum can be carried out simultaneously in this modern era of efficient surgical care. Only in 1 case resection of bowel was done; mesh repair was not carried out due to risk of infection and rejection of the mesh.

In the present study, infection rate was 12%, morbidity rate was 14% and mortality rate was nil. These figures are probably not indicative of the true incidence of postoperative complications in the management of complicated hernias, after taking into consideration the small number of patients studied. No patients had recurrence of hernia or local wound complication in subsequent follow up period. However more such detailed studies and trials are required to effectively reduce the mortality and morbidity rates that are seen in the present study.

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