

A Clinical Study on the Management of Complicated Inguinal Hernias



Medical Science

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Dr. Manish Baria

Senior Resident in Surgery department, M. P. Shah Medical College, Jamnagar, Gujarat

Dr. Ankita Parmar

Resident Doctor in community medicine, C. U. Shah Medical College, Surendranagar, Gujarat

ABSTRACT

Background

Complicated inguinal hernias pose a threat to the life of the patient as well as increase the morbidity associated with management of an otherwise straightforward condition.

Aim

The aim of this study was to determine the presentation, treatment and management outcome of complicated inguinal hernias in our set up.

Methods

The study was carried out among 50 patients admitted in the Department of General Surgery of our institute during the period of 2011 to 2013 with complicated inguinal hernia. Data obtained included demographic characteristics, presentation, operative findings and outcome.

Conclusions

From the present study it is evident that most patients of complicated inguinal hernias present with painful irreducible inguinoscrotal swellings. These swellings if not taken care of, then of course progress to obstruction and strangulation.

Introduction

An inguinal hernia, either direct or indirect is one of the most common problems that we face in our routine surgical practice and uncomplicated hernias possess no difficulty so far as many advances are present for repair of defect.

Complications generally occur with indirect inguinal hernias in form of irreducibility, obstruction, inflammation and strangulation. Management of these complicated hernias is different from the management of uncomplicated hernias. Most important is the morbidity and mortality associated with these complicated hernias, because generally the patients of complicated hernias are of older age group and have some sort of compromised cardio-respiratory function.

Inguinal hernias are among the most common problems encountered by surgeons and may have significant complications. Anterior abdominal wall hernia occurring with strangulation is a serious surgical emergency, as it is associated with high morbidity and mortality.^(1,2) It is generally agreed that a hernia should be electively repaired to avoid the complicated presentations.⁽³⁾ Nevertheless, many patients remain undiagnosed or are reluctant to have surgical correction of hernias, and, as a result, many emergency procedures are performed for complications of neglected hernias.

Compared to uncomplicated hernias, the treatment of which has made great progress in modern times, complicated hernias have been relatively neglected, and for fear that their treatment may cause even greater risk to the patient than the hernia itself. (4)

This study was carried out to describe the presentations & management of such patients.

Aims and Objectives

1. To study the incidence of complications in inguinal hernias, such as obstruction, strangulation and incarcerated inguinal hernia.
2. To study the incidence of patients presented with irreducible inguinal swelling.

The objectives of this study are to find out the incidence of complications presented in our set up, along with the relevant management.

Methodology

The study was conducted among the 50 patients admitted in the Department of General Surgery, GG Hospital Jamnagar during the period of 2011 to 2013. Following criteria were taken for

the patient selection:

➤ Case selection:-

1. All patients that have presented with complicated inguinal hernias like obstructed, strangulated, incarcerated and irreducible inguinal hernia.
2. All patients of inguinal hernia required emergency surgery.

➤ Exclusion criteria:-

1. All patients that have gone for elective surgery of inguinal hernia.
2. All paediatric patients with congenial inguinal hernia.

All these patients were studied and findings were recorded.

Results

Among the 50 patients, 36% was in group of 41- 60 years of age. As hernia is more common in middle age group of 30 to 60 years was maximally affected. As people of this age group are engaged in strenuous heavy work they were the sufferers.

Most of the patients (70%) had right side inguinoscrotal swelling which proves the fact that right side hernias are more common. Also taking into consideration the criteria of selection of patient in this study (complicated hernia), most of the patients are right handed. Thus due to various manual tasks and activities with right hand, so developing right sided complications is more and another possibility is that right side processus vaginalis obliterates later than left side.

Pain and irreducible swelling was presenting symptom in all patients, this is because the occurrence of pain makes the patients to seek medical advice and all such irreducible hernia will have some element of pain associated with swelling. (Table 1)

32% patients presented within 2 years of onset of hernia and 8% patients presented with first episode of a complicated hernia with no previous history of any inguino scrotal swelling (Table 2). Majority (80%) of patients presented with an irreducible hernia. 12% of the patients had a strangulated hernia.

Table 1: Symptomatology

Findings	No. Of patients	%
Pain	50	100%
Irreducible swelling	50	100%

Nausea	15	30%
Vomiting	10	20%
Constipation	10	20%
Abdominal distension	10	20%
Pain	50	100%

Table 2: Time duration before occurrence of complication

Duration of hernia	No. of patients with complications	Percentage
First time	04	08%
< 1 year	08	16%
1 to < 2 year	16	32%
2 to < 3 year	08	16%
3 to < 4 year	10	20%
4 to < 5 year	04	08%

These findings suggest painful irreducible swelling is one of the presenting symptoms, thus preventing other complications in hernia by timely surgical intervention.

Table 3: Contents of the sac and Status of contents

Type	No. Of patients	Percentage
Omentum	15	30%
Small bowel	35	70%
Status of contents		
Viable bowel	28	56%
Nonviable bowel	07	14%
Omentum	15	30%

As 14% bowel was not viable so, resection and anastomosis was carried out and 30% of patients had an omentocoele and omentectomy was carried out irrespective of the status of omentum taking into consideration the inflammation and some fibrosis of that omentum. On exploration of 50 patients for the level of obstruction it was found at internal inguinal ring in 42 patients (84%) while in 16% level of obstruction was at external inguinal ring.

As internal inguinal ring is small than external inguinal ring so more chances of obstruction are at internal inguinal ring.

Table 4: Procedure Performed

Procedure	No. Of patients	%
Herniorrhaphy	08	16%
Omentectomy with herniorrhaphy	05	10%
Resection and anastomosis with herniorrhaphy	07	14%
Meshplasty	20	40%
Omentectomy with meshplasty	10	20%
Resection and anastomosis with meshplasty	-	-

Out of 50 patients, meshplasty was done in 20 patients (40%). In 10 cases (20%) of omentocoele, omentectomy with meshplasty was done. In 8 patients (16%) only herniorrhaphy was done. Resection and anastomosis of small bowel with herniorrhaphy was done as bowel was non-viable. As in this type of procedure, chances of wound infection is very high and so mesh was not

inserted and in 5 patients (10%) omentectomy with herniorrhaphy was done as musculature was very healthy.

In 35 patients (70%) postoperative recovery was uneventful. In 5 patients (10%) induration of wound was seen so antibiotics were further continued. In 5 cases (10%) seroma developed which was aspirated and antibiotics were continued.

In 4 cases (08%) there was wound gapping and secondary closure was done and antibiotics were given according to culture and sensitivity report and 1 patient expired due to sudden cardio-respiratory arrest due to septicaemia due to peritonitis. All the patients were followed and examined at 1 month, 3 months, 6 months interval for condition of local scar, recurrence and any local complain. There was no recurrence of hernia in this study.

Discussion

Although in this study age of the patient was not one of the criteria of selection, most of the patients 36% were of middle age (41- 60 years). Due to the active life style, inguinal hernia is more common in middle age group which can progress to complications later on as seen in present study.

In the study by Ernesto et.al ⁽⁶⁾, the average age of the patients was 71 (range: 26-92 years). In another study by J. A. Alvarez et.al ⁽⁵⁾, 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.

From the study it is evident that a painful irreducible swelling was the chief complain among most of the patients. While only few patients presented with signs and symptoms of obstruction and strangulation. Most of the time a hernia tends to undergo complications 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. Also taking into consideration the aetiology of patent processus vaginalis which obliterates late on right side (although rare to account) most of the patients had a right sided hernia.

Complications that develop in external hernias, such as irreducibility and obstruction, with or without strangulation may make an easily treatable condition a life-threatening one. Identification of risk factors that may predict development would help place the patient in a high-risk group. While not inherently impaired, the reserve capacity of the older individual to compensate for stress, metabolic derangement, and drug metabolism is increasingly limited. Functional disability occurs faster and takes longer to remediate, necessitating early preventive interventions. (7) Advanced age in the patients with complicated groin hernia has been associated with an unfavourable outcome. (3,8,9)

Ernesto et.al (6), reported 90.69% cases having vomiting, constipation, abdominal distension, 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. Alvarez et.al (5), 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.

Most of the patients had a previous history of inguinoscrotal swelling (an uncomplicated hernia) but for some reason or other they did not prefer to seek medical advice. In these patients the hernia eventually progressed to a complication for which urgent medical advice become necessary. There were 8% of patients in whom an inguinoscrotal swelling had appeared and complication taken place simultaneously at the time of admission.

In the study by J. A. Alvarez et.al (5), 74 cases (50.3%) presented with a history of inguinal swelling and in a study by Ernesto et.al (6), 10 cases (23.2%) presented with recurrent inguinal swelling and 33 cases (76.7%) presented with primary inguinal her-

nia.

About 40 (80%) patients developed irreducible inguinal hernia, 6 (12%) patients had strangulated inguinal hernia and 4(8%) patients had obstructed inguinal hernia.

Nearly 20% of the patients developed obstruction and/or strangulation of inguinal hernia. In the study by J. A. Alvarez et.al (5), 61(41.4%) patients presented with strangulated inguinal hernia and 85 (57.8%) patients presented with incarcerated inguinal hernia. All patients in the study of Ernesto et.al (6) had strangulated hernias.

All the patients in the present study were managed by operative intervention as early as possible and it was evident in per-operative findings that in 6 patients there was strangulation and resection of non-viable bowel was carried out. In 15 patients there was an omentocoele and omentectomy was carried out taking into consideration the inflammation of entrapped omentum. Among the rest patients who had obstruction i.e. in 84% of cases, level of obstruction was at deep inguinal ring.

Though after admission every patient was operated in emergency as early as possible, 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 which was done in 14% cases.

Regarding the type of repair, herniorrhaphy and meshplasty were carried out in most (56%) of patients. Herniorrhaphy and meshplasty along with omentectomy or with resection of bowel were done in rest of the patients. In no patient of resection and anastomosis, meshplasty was advocated. Thus even in emergency hernia repair the treatment of the pathology (relief of obstruction or removal of dead tissue) as well as the aetiology (weakness of abdominal wall) can be tackled simultaneously.

In the study by Ernesto et.al (6), hernia repair with meshplasty with resection and anastomosis of small intestine was carried out in 34 (79%) cases and by J. A. Alvarez et.al (5), hernia repair with meshplasty with resection and anastomosis of small intestine was carried out in 4 (5.7%) cases.

In Post operative period the infection rate was 8%, Seroma collection and induration were found in 5 patients each. Thus the morbidity in this study was 20%. The seroma collection was aspirated and induration was treated with broad spectrum antibiotics. In the study by Ernesto et.al (6), 6% patients had seroma, 3% patients had wound infection, and 1% patients had incisional hernia. In the study by J. A. Alvarez et.al (5), 28.6% patients had wound infection, 14% patients had seroma, hematoma and wound dehiscence.

All these patients had no long term post-operative complications with respect to recurrence of hernia and condition of local scar. In the Study by J. A. Alvarez et.al (5), reported recurrence rate was 1%-4%.

The present study indicated that most of the complicated inguinal hernias are a medical as well as surgical emergency and with appropriate management, successful repair and post-operative management, the morbidity and mortality associated with such complicated hernia can be reduced drastically.

Conclusions

From the present study it is evident that most patients of complicated inguinal hernias present with painful irreducible inguinoscrotal swellings. These swellings if not taken care of, then of course progress to obstruction and strangulation. Patients of irreducible hernias have thus to be clinically examined for a complication, resuscitated, investigated (more importantly with x-ray abdomen standing/lying down and Ultrasonography) and must be prepared for emergency surgical intervention, as with each passing moment the bowel present in the sac is at increased risk of obstruction, strangulation and perforation. In most of these patients the level of obstruction was at deep inguinal ring and along with the repair of the defect in the abdominal wall by meshplasty or herniorrhaphy, resection of the gangrenous bowel or omentum can be carried out simultaneously in this modern era of efficient surgical care, intravenous fluid therapy, antisepsis and broad spectrum antibiotics. Only in cases where resection of bowel is done; meshplasty is not advocated due to risk of infection and rejection of the mesh. No patient had recurrence of hernia or local wound complications in subsequent follow up period.

REFERENCE

1. Andrews NJ (1981) Presentation and outcome of strangulated external hernia in a district general hospital. *Br J Surg* 68:329-332 | 2. Haapaniemi S, Sandblom G, Nilsson E (1999) Mortality after elective and emergency surgery for inguinal and femoral hernia. *Hernia* 3:205-208 | 3. Oishi SN, Page CP, Schwesinger WH (1991) Complicated presentations of groin hernias. *Am J Surg* 162:568-571 | 4. Stoppa RE (1989) The treatment of complicated groin and incisional hernias. *World J Surg* 13:545-554 | 5. Incarcerated Groin Hernias in Adults: Presentation And Outcome. By J. A. Alvarez, Service of General Surgery, Hospital San Agustín, Aviles, Spain. November 19. Springer-Verlag 2003. | 6. Strangulated Inguinal Hernia: Department de Cirugia, Hospital General Gonzalez Garza, Centro Medico La Raza, Instituto Mexicano Seguro Social, Mexico. Volume 80, NO-4, July-August 2012, By Ernesto Manuel Gongora-Gomez | 7. Oskvig RM (1999) Special problems in the elderly. *Chest* 115 (suppl):158-164 | 8. Rai S, Chandra SS, Smile SR (1998) A study of the risk of strangulation and obstruction in groin hernias. *Aust N Z J Surg* 68:650-654 | 9. Heydorn WH, Velanovich V (1990) A five-year U.S. Army experience with 36,250 abdominal hernia repairs. *Am Surg* 56:596-600 |