COMPLICATED GROIN HERNIAS- RISK FACTORS, CONSERVATIVE MANAGEMENT AND TIMING OF SURGICAL MANAGEMENT

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ABSTRACT: Groin hernia is a very common ailment among surgical patients. Irreducibility, obstruction and strangulation are its commonest complications encountered in surgical practice as acute emergencies. Despite the well known sequelae of many types of hernias, it is surprising to find that the complication of strangulation still has an appreciable mortality in the modern era even with better care and improved anaesthetic management. Here we have studied prospectively 60 cases of groin hernias regarding the age, sex, type of hernia, side of hernia, common symptoms of presentation, duration of presentation since the appearance of the first symptom, associated medical illness and regarding the taxis and emergency surgery. Most of the cases were between 50- 70 years of age. Males are predominant in inguinal hernial complications and females are predominant in the femoral hernial complications. Right sided hernias were more common and late presentation lead to strangulation and more deaths.

KEYWORDS: Groin hernia, Risk factors, Taxis, Strangulation, Complications, Mortality

INTRODUCTION: Groin hernia is a very common ailment among surgical patients and irreducibility, obstruction and strangulation are its commonest complications encountered in surgical practice as acute emergencies¹. Despite the well known sequelae of many types of hernias, it is surprising to find that the complication of strangulation still has an appreciable mortality in the modern era even with better care and improved anaesthetic management^{2, 6}. Groin hernias are among the most common problems encountered by surgeons and may have significant complications. It is generally agreed that a hernia should be electively repaired to avoid the complicated presentations³. 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 itself¹. Though it is a superficially seen swelling, patients present late either due to negligence, ignorance or delay in reference from peripheral centers. Though it is difficult to predict strangulation in a hernia with confidence, it is necessary to have a criterion to diagnose strangulation from simple obstruction which can be treated with taxis alone and surgery done on elective basis⁸. So here we have studied the pattern of clinical presentation in irreducible, obstructed and strangulated hernias. The identification of risk factors like age, sex, type of hernia, duration since first symptom and associated pre existing medical illness helps to give priority in admission and treatment to such patients. It also helps to identify patients to be taken up for early surgery and prevent complication. The delay in surgery in case of complicated hernia increases the morbidity and mortality in such patients⁹.

So this study was done to evaluate the pattern of clinical presentation, early identification of risk factors, to review the role of taxis and to re-stress the importance of early surgery.

MATERIALS AND METHODS: This is a prospective study done between January 2008 and December 2012 in our medical college hospital. All the consecutive patients of complicated groin hernias that were admitted and treated in our hospital were included in the study. A proforma was drafted and details of all the consecutive patients of complicated groin hernia was entered. The clinical findings including the age, sex of the patient, type of hernia, duration of hernia, side of hernia and the coexisting medical illness was recorded in detail. The pre operative treatment, operative findings and post operative outcome were documented. All patients of groin hernia with history of pain in swelling, symptoms of obstruction, irreducibility were included. All patients who were admitted with history of irreducibility or obstruction without evidence of strangulation were treated with conservative treatment (taxis) initially and then were taken up for emergency surgery. The details of whether taxis were successful were recorded. All patients with evidence of strangulation who underwent emergency surgery were also included in the study. The patients below the age of 12 years, hernias which were reducible and other swellings in the groin presenting similarly were excluded from the study.

RESULTS: In the present series 60 patients of complicated groin hernias were studied. In the present study in all the patients with swelling of the groin, pain was the main symptom in 76.6% of the patients followed by vomiting (60%), bowel disturbance (50%) and distension of abdomen (38.33%). In this study, pain, vomiting and constipation was the combination of symptoms which was constantly present in 64.83% of patients (TABLE-1). Two patients presented with shock and both of them died after the surgery. In this study maximum number of patients was in the age group of 61-70 years (20%), followed by 51-60 years (18.33%) and 21-30 years (16.6%), 41-50 years (16.6%). The youngest patient in the series was 13 years and the eldest was 80 years. In this study 93.44% of the patients were males and 6.66% were females. In this study all the inguinal hernias were found in males. Among the femoral hernias 64.68% was found in females and 35.32 % was in males. Among the 60 patients studied, 54 patients had inguinal hernias and 6 patients had femoral hernia. Among the inguinal hernias 88.88% were indirect hernias and 11.11% were direct hernias (TABLE-2). Among the inguinal hernias 24% patients were irreducible, 68.5% were obstructed and 7.43 patients had strangulated hernias. Among the femoral hernias, 16.27% patients had irreducible hernias, 16.27% patients had obstructed and 66.6% of patients had strangulated hernias (TABLE-3). In this study 44 patients had hernias on the right side and 16 patients had hernia on the left side. In this study 14 out of the 38 inguinal hernia patients developed a complication within one month of developing inguinal hernia and 3 out of 6 patients of femoral hernia developed complication in the first month. Out of the 54 complicated inguinal hernias 38 of them got complicated in the first 6 months of developing the hernias. All the 6 femoral hernias got complicated within first 6 months of developing the hernia (TABLE-4). In this study 32 patients had preexisting medical illness either urological or of respiratory system.

In this study, except for the patients who had obvious signs of strangulation, conservative treatment (taxis) was tried in all the other cases (TABLE-5). Only in 22 cases it was possible to reduce the hernia and there was no death in any of the patients tried with taxis and operated as

emergency. There were two deaths in the patients with the signs of strangulation where surgery was the first option of treatment. In this study there was increase in the number of cases of strangulation as the duration since the first symptom increased. There was no mortality in 1-6 hours. The mortality between 6- 24 hours was 1, between 24-72 hours was 2 and between 3- 6 days was 3 deaths. In this study out of the 6 cases who underwent emergency surgery with suspicion of strangulated bowel, 5 of them had resection of gangrenous bowel. As the duration increased, the chances of resection of bowel increased with a proportionate increase in the mortality (TABLE-6).

DISCUSSION AND CONCLUSION: In the present study, in all the patients with groin hernias, pain in the swelling was the main symptom with 76.6% and vomiting and abnormal bowel sounds in 60%. In study done by Andrews et al, pain was the major symptom in 91.4% of the patients and vomiting and abnormal bowel sounds forming 76.68% and 64.52% respectively². The difference in observation could be due to the fact that Andrews study contained more of strangulated hernias while in our study the majority were of the obstructed type. This study shows that, a patient of groin hernia developing pain in the swelling with vomiting and constipation should be regarded as complicated and the patient should be treated immediately. In this study 39% of the patients were in the age group 50- 70 years. In the study done by Frankus et al it was 40%¹⁰. The incidence in the age group of 21-40 years was 30%. While in the study by Frankus it was 19%¹⁰. The difference in incidence in the age group of 21-40 years might be due to the fact that most of the patients in this study were labourers either lifting heavy weights or doing strenuous activities. The study shows that the chances of the groin hernia increases with age due to associated medical illness and age related degeneration of tissues. It also shows that younger patients doing heavy work are also prone for the complication. In this study majority of patients were males with 93.44%. In the study done by Adensunkanmi et al it was 81%¹². All the patients with complicated inguinal hernias were males while, females formed the majority of complicated femoral hernia with 64.68%. In the study done by Andrews 87.87% were males with inguinal and 80.56% with femoral hernia². This study shows that male sex being a risk factor overall, female sex has increased risk of complicated femoral hernia.

In this study 90% of complicated hernias were inguinal and 10% were femoral compared to Adensunkanmis study of 94.4% and 5.6%¹². Among the inguinal group, indirect hernias formed 88.88% and direct 11.11% compared with Adensunkmis study of 92% and 8%¹³. The findings are similar to the present study when compared. Though it seems that inguinal hernias are a major risk factor, statistics show that strangulation with femoral hernia is more common. This study also shows that indirect inguinal hernia is more prone for complication compared with direct hernia. In this study the right to left ratio for inguinal and femoral were 2.85 and 2 compared with Andrews study of 2.9 and 1.8². The findings are almost similar to the compared study showing that a hernia on the right side increases the risk of complication. In this study 24 inguinal and 4 femoral hernias occurred with complication in the first 6 months out of the 32 inguinal and 6 femoral hernias. Comparing the percentage of uncomplicated hernias getting complicated in the first 6 months of occurrence of hernia in this study (63.3%) with Grossfiellds study (50%), it shows that the chances of a hernia is high in the first six months¹⁴. This study shows that the chances of hernia getting complicated in the first 6 months is maximum. In this study 53.3% of the patients had urological or respiratory problem, compared with Adensunkanmis study of 62.2%, showing that a patient with

hernia with a coexisting medical illness which increases the intra abdominal pressure has high chances of getting complicated¹³.

In this study taxis was tried in all patients without obvious signs of strangulation .Although it was successful in only 22 cases there was no mortality .In all patients in whom taxis was successful were also taken up for emergency surgery in this series. This study shows that taxis is a safe procedure when there is no doubt about pathology and with preparedness for emergency surgery. It is better to keep in mind the following views by previous authors: Wangsteen- that taxis is of “doubtful value unless the patient is seen within a short time”, Alexander- that taxis or manual reduction was overdone and should not be taught in medical school, Power- advised against using taxis if strangulation was over five hours in duration, Coley- considered five minutes as a time limit for efforts at reduction⁸. In this study the number of cases of strangulation and mortality increased with the increase in duration since the first symptom. The strangulated bowel resection and anastomosis also increased the mortality. The maximum death and the number cases of strangulation increased after 24 hours. This study shows that surgery is better done within first few hours of occurrence of symptom.

TABLE-1: COMMON SYMPTOMS

SYMPTOMS	NUMBER OF CASES	PERCENTAGE
Pain	46	76.6
Vomiting	36	60
Bowel disturbance	30	50
Distension	23	38.33
Abnormal bowel sounds	36	60
Pain, vomiting, constipation	31	51.66
Pain, constipation	13	21.66
Persistent vomiting	5	8.33
Shock	2	3.33

TABLE-2: MALE: FEMALE DISTRIBUTION

SEX	NUMBER OF PATIENTS	PERCENTAGE
Male	56	93.44
Female	4	6.66
INGUINAL HERNIA		
Male	54	100
Female	0	0
FEMORAL HERNIA		
Male	2	35.32
Female	4	64.68

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TABLE-3: TYPES OF COMPLICATION

TYPE	NUMBER OF PATIENTS	PERCENTAGE
INGUINAL HERNIA		
Irreducible	13	24.07
Obstruction	37	68.5
Strangulation	4	7.43
FEMORAL HERNIA		
Irreducible	1	16.27
Obstruction	1	16.27
strangulation	4	66.6

TABLE-4: RELATION OF DURATION OF HERNIA TO COMPLICATION

DURATION OF HERNIA (MONTHS)	COMPLICATED INGUINAL HERNIA	COMPLICATED FEMORAL HERNIA
1	14	3
1-3	10	1
3-6	8	2

TABLE-5: RESULTS OF CONSERVATIVE TREATMENT (TAXIS)

	CASES	DEATHS	MORTALITY
NONSURGICAL TREATMENT TRIED	54	NIL	NIL
NOT TRIED	6	2	33.33

TABLE-6: RELATION OF DURATION SINCE FIRST SYMPTOM TO STRANGULATION

DURATION(HOURS)	NO OF CASES OF STRANGULATION	MORTALITY
1-6	Nil	Nil
6-24	1	Nil
24-72	2	1
3-6 days	3	1

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