



A STUDY ON COMPLICATIONS OF EXTERNAL HERNIAS

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ABSTRACT

**Background:** External Hernias include Groin (Indirect, Direct & Femoral), Ventral (Umbilical, Para-Umbilical, Epigastric, Spigelian), Posterior (Lumbar), Incisional, Obturator & Sciatic Hernias. Groin Hernias form the commonest Subgroup. The complications encountered are irreducibility, obstruction with or without strangulation. Strangulated hernias are surgical emergencies and constitute an important cause of morbidity and mortality in patients with external hernias. **Methods:** This study was performed in a tertiary care hospital from June 2009 to August 2011 and included 50 patients. The main aim of the study was to identify the complications of external hernias. **Results:** The incidence of complicated External Hernia were notably higher(54%) in the older age group, a large number belonging to 5th and 6th decade. With regard to sex incidence, the majority (68%) were males. Irreducibility was the important complication occurring in the External Hernia at around 62%. **Conclusion:** The major complications of External hernia in our study included irreducibility, obstruction and strangulation. Most of the complicated hernias occur in old aged people. Primary indirect Inguinal Hernia were the most common type of hernia in the study. Irreducibility of the bowel in the hernial sac is the most commonly presented complication. Neck of the hernial sac was the most common constricting agent and omentum was the content in most of the cases. Wound sepsis and UTI were the chief postoperative complications encountered by the operated cases.

**KEYWORDS :** External hernias; complicated hernia; hernia

INTRODUCTION

Hernia is defined as the protrusion of whole or part of the viscus through the wall that contains it. Hernias develop through an opening or natural weakness in the abdominal wall(1).

External Hernias include Groin (Indirect, Direct & Femoral), Ventral (Umbilical, Para-Umbilical, Epigastric, Spigelian), Posterior (Lumbar), Incisional, Obturator & Sciatic Hernias. Groin Hernias form the commonest Subgroup(2).

Complications do develop if the above surgical conditions are not treated in time. In External hernias, the complications encountered are irreducibility, obstruction with or without strangulation(3). Trapped tissues and blood vessels can lead to irreversible necrosis within a few hours. Strangulated hernias are surgical emergencies and constitute an important cause of morbidity and mortality in patients with external hernias(4).

A number of studies have been undertaken to establish the criteria for Predicting the development of these complications. This prospective study is conducted in to identify the risk factors and outcome of patients who presented to our emergency room with complications.

MATERIALS & METHODS

This study was a prospective study done in a tertiary care Hospital from June 2009 to August 2011. The study group was managed only by surgery.

Patients are of age group over 30 yrs.

All cases with complications of External Hernia coming to Our Department in the study period will be taken as study Population.

The factors analysed and tabulated are

- Age
- Sex
- Type of hernia
- Complication of hernia

- Contents of hernial sac
- Site of constriction
- Type of surgery performed
- Post-operative complications

This was done to understand the possible correlation amongst them and the effect they may have on the final outcome of the patients. Based on the history and clinical presentation certain important clinical findings were noticed and analysed.

- Abdominal pain
- Bowel disturbances
- Abdominal distention
- Abnormal bowel sounds
- Local tenderness

These cases were studied from time of admission till discharge and followed up in out patient department. A detailed history was elicited and clinical examination was done.

All patients were given pre-operative antibiotics and the same was continued for 4 days post operatively.

Patients in our study include those with good health to those with associated medical disorders.

The results of study were later analyzed and have been presented in this study.

RESULTS

The incidence of complicated External Hernia were notably higher(54%) in the older age group, a large number belonging to 5th and 6th decade. This reflected the lack of attention to hernia in elderly people. Significantly about 3 young adults were admitted with complicated Hernia.

Table 1: Age Incidence

31-50 YRS		51-70 YRS		>70YRS	
M	F	M	F	M	F
10	8	20	7	4	1
TOTAL 18		27		5	

With regard to sex incidence, the majority (68%) were males

and it is also evident that 30 had a complicated inguinal Hernia. Females predominantly encountered complicated Hernia of around 32%.

Our study showed that most of the patients around 64%(32 cases) had Inguinal hernia in accordance to the literature. About 14 pts had complicated ventral Hernia. Only 4 Patients had Femoral Hernia.

Our study revealed that Irreducibility was the important complication occurring in the External Hernia. About 31 cases (24 inguinal and 7 ventral) presented as Irreducibility of around 62% of the patients presented with features of strangulation, severe abdominal pain and evidence of peritonitis in abdomen. Obstruction was seen in 26% of cases, while strangulation was present in 12% of patients.

**Table 2: Complications Of External Hernias**

HERNIA	OBSTRUCTION	STRANGULATION	IRREDUCIBILITY
INGUINAL	7	1	24
FEMORAL	2	2	-
VENTRAL	4	3	7
OTHERS	-	-	-
TOTAL	13	6	31

Careful observation in our study revealed that neck of the sac was the ultimate site of constriction in 40 cases. Adhesions contributed to complications in 10 pts in our study.

In the study, it was noted omentum alone was the content of the sac in most totalling 33 cases, Ileum alone was the content in 15 cases. ileum along with adjacent cecum was the content in 1 case. Sigmoid colon was the content in Left sided Femoral Hernia in 1 case in our study.

The decision about the peroperative procedure to be carried was made on looking at the viability of the contents. Reduction was done in 44 cases who had viable bowel while resection of the nonviable bowel and subsequent anastomosis of the normal bowel segment carried out in 6 cases.

In our study, wound sepsis (12%) and UTI (14%) were the predominant complications encountered by the pts in the immediate postoperative period. Significantly 3 pts had Bladder distension; 1 patients expired in the post operative period; the cause being Cardiac arrest in that case.

**Table 3: Post Operative Complications**

COMPLICATIONS	NO OF CASES
WOUND SEPSIS	6
BLADDER DISTENSION	3
UTI	7
EXPIRED	1

**DISCUSSION**

The major complications of External hernia identified in this study include irreducibility, obstruction and strangulation.

The majority of patients who were admitted as emergencies with Complicated External hernias have not sought previous medical attention or been diagnosed with the condition in the out patient department. This observation implies that most hernias that develop complications do so within a relatively short time in the natural history of the disease. In adults, Gallegos estimated the cumulative probability of strangulation for inguinal hernia is 2.8% after three months, rising to 4.5% at the end of 2 years(5).

Thus, patients with a short history of External hernia should be operated earlier than those with longer histories to prevent complications.

Old age is a significant risk factor for a complicated hernia. The age incidence derived from this study projects out the fact that peak incidence of complications occur in the 5th and 6th decade of life. Associated co-morbid illness like chronic obstructive pulmonary disease, prostatism, abdominal ascites & malignancy also contribute to the higher incidence in old age. This was consistent with a study by Dunphy, who suggested that old age with its associated medical problems was a major factor for the high complication rate in hernia(6).

There is marked male predominance in the occurrence of complicated External Hernia. The sex ratio in our study is 2 : 1. Andrews et al and McEntee et al reported that more men had complicated hernias than women(7,8). But it is noteworthy to mention that Femoral Hernia is more common in the Female patients in our study; almost all of the cases in accordance with the literature. The musculoaponeurotic attachments are such that women are proportionally more prone to develop femoral hernias(9).

Inguinal Hernia is the most common type of External Hernia as evident from the study. All of the complicated Inguinal Hernias had an indirect sac. In view of its indirect course, it does not often reduce itself spontaneously when the patient lies down and is more prone to irreducibility than the direct inguinal variety. In a study conducted by Frankau et al, 559 indirect hernias presented with complications whereas only 14 direct hernias presented with complications(10). Direct inguinal hernia was never encountered in the study. All the presented hernias were of the primary variety.

Irreducibility of bowel content in the sac remains the most common complication of the External hernias in the study accounting to about 62% of total cases. Strangulation is the most serious complication of External hernias. This occurs more frequently with neglected incarcerated hernias with advanced age, and in large hernias with relative small openings(6).

Negotiating the site of constriction was the main step in emergency hernia surgery. In order of frequency, the constricting agent is a) the neck of the sac b) the external inguinal ring especially in children c) adhesions within sac (rarely). The study also showed that the neck of sac was the most frequent constricting agent. Most of the irreducible hernias had adhesions within the sac as the constricting agent.

Observation from the study showed that Omentum was the predominant content of the opened up hernial sac in 66% of cases followed by ileum in 30% of patients. 1 case had adjacent caecum along with the ileal loops. 1 patient had Sigmoid colon as the content. A study conducted by Shakya et al, revealed small bowel as the most common content of a hernia sac(11) which contradicted our study.

The choice of the method of Hernia repair rests on the surgeon. Neither procedures shared significant advantage over others if done properly. Prosthetic mesh was used in most of cases for Hernia repair; expect for those who underwent Resection Anastomosis & those presented with features of peritonitis the reasons being to avoid the incidence of wound infection in emergency situation. Stoppa et al, prescribed the use of prostheses in strangulated hernias, and Stoppa and Warlaumont elaborated along the same lines: "The use of a prosthesis must be reserved for cases in which the viability of the intestine is assured, where the operation takes place in an aseptic setting(12).

Wound sepsis and UTI remained the most common complaints of patients in immediate postoperative period. All cases who presented with bladder distension had

preoperative finding of prostatic enlargement and hence they required bladder catheterisation. They were advised to undertake further treatment in Urology Department after discharge. Urinary tract infection was reported in 7 cases which responded well to the Urinary antiseptics. According to John Jenkins et al, the incidence of post-operative complications varies between 1% and 7% with the most common complication being wound infection(13).

1 patient who underwent resection and anastomosis for strangulated bowel expired due to overwhelming septicemia. she presented with gross peritonitis at the time of admission. she was on ventilator for 1 week following failure to recover from anaesthesia. The mortality rate in our study is henceforth 2%. Adesunkanmi et al reported a mortality of 2.7% in their case series which correlates well with our study(14).

## CONCLUSION

- 1.The major complications of External hernia in our study included irreducibility, obstruction and strangulation.
- 2.Most of the complicated hernias occur in old aged people. Males outnumber female in overall incidence. Femoral Hernia is commoner in females.
- 3.Primary indirect Inguinal Hernia were the most common type of hernia in the study, incidence being 64%.
- 4.Irreducibility of the bowel in the hernial sac is the most commonly presented complication, incidence being 62%.
- 5.Neck of the hernial sac was the most common constricting agent causing complication.
- 6.Omentum was the most common content of the hernial sac.
- 7.Choice of Hernia repair was decided on patient's requirement and surgeon's preference. No significant advantage was made one over another
- 8.Wound sepsis and UTI were the chief postoperative complications encountered by the operated cases.

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