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A Prospetive Clinical Study on Complicated Hernias

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Abstract
Hernia is a common surgical problem in our country and a major health care drain. This study was carried out to determine the various types and presentations of complicated abdominal hernias, their age, sex distributions, management modalities, treatment of complicated hernias and its outcome. Fifty patients who presented to ER, Surgery department of Rajah Muthiah Medical College and Hospital during the period of October 2015 to October 2017 were selected. The majority of patients who were admitted as emergencies with complicated hernias have not sought previous medical attention or been diagnosed with the condition in the outpatient department. This observation implies that most hernias that develop complications do so within a relatively short time in the natural history of the disease. 92% of the patients in the study had primary hernia. Obstructed groin hernias turned out to be the commonest cause of small bowel obstruction in patients attending the ER. 96 patients with small bowel obstruction was admitted in the ER during the study period of whom 45 had complicated groin hernias [46%]. Complicated hernias had a peak incidence in 5th and 6th decade of life 42 %. Males had and overall increased incidence of complicated hernias 86%. And complicated femoral hernias where common in females 5 out of 6cases.76% had obstruction as the complication, 10%-strangulation and 14% had irreducible or incarcerated hernias. 70 % had constriction at the neck of the sac. 76 % had ileum as the content followed by cecum, appendix, colon and others.50 % of patients were operated by modified Bassini's technique. 36% by meshplasty. Lotheissen procedure for 5 out of 6 cases of femoral hernias. Wound sepsis was the predominant complication.
Keywords: *Inguinal hernia, femoral hernia, Epi gastric hernia, umbilical hernia. Obstruction, irreducible, strangulation.*

Introduction

Hernia is defined as the abnormal protrusion of a viscus through a normal or abnormal aperture.[3] Abdominal wall hernias include umbilical, epigastric, and hernias of the groin – inguinal, femoral and obturator hernias. Groin hernias are the most common type of hernias. Hernias have been a common surgical problem and a major health care drain throughout the world. Our study aims to review the literature on the management of hernia, focusing on the various types and presentations of complicated abdominal hernias, their age, sex distributions, management modalities, treatment of complicated hernias and its outcome.

Materials and Methods

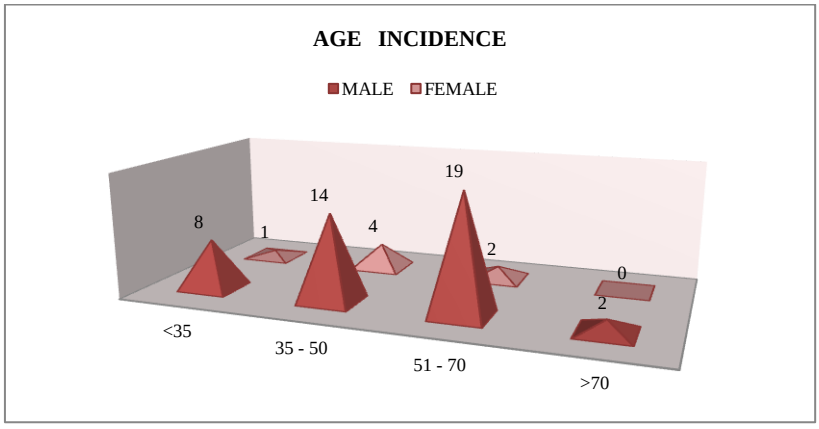
My study is an observational prospective study of 50 patients who presented to the ER, Department of General Surgery, RMMCH during the period of October 2015 to October 2017. Method of sampling was non-random, purposive. Baseline investigations as routinely required were done followed by imaging studies x-ray chest and abdomen, USG, CT abdomen.

Results

Of the 50 patients in our study people between 51-70 years i.e 5th and 6th decade of age had the maximum incidence of complicated hernias- 21 patients-[42%]. Males had an incidence of [86%] - 43 out of 50, which can be explained because of the incidence of indirect inguinal hernia in males, which is more prone for complications. Out of the 6 patients who presented with complicated femora hernias of them were females. 46 patients out of 50 had primary hernia [92%]. 39 had inguinal hernia –[78%]. 6 had femoral -12%. 3 had umbilical and 2 had complicated epigastric hernias. 35 patients out of 50 had right sided groin hernias [67%] and 10 had left sided groin hernias [20%]. The commonest complication encountered was obstruction -36 out of 50 cases [72%] of which 26 were obstructed inguinal hernias [52%]. 5 strangulated hernias [4 inguinal and 1 femoral] 10%. And 9 had irreducible or incarcerated hernias [18%]. Of the total of 96 patients who presented to ER with intestinal obstruction during the study period, 50 was because of hernia obstruction, the rest was because of adhesions/bands16 cases [17%]. Tumors [7%]. Sigmoid volvulus, TB abdomen, Ileo sigmoid knotting and intussusception were the other causes. The site of constriction in most of the cases was the Neck of the sac 34 cases [68%], the external ring in 13 cases [26%] and because of adhesion or other cases in the 3 cases [6%]. Ileum constituted as the content in 38 cases [76%]. Caecum and appendix in 6 cases [12%] sigmoid colon in 4 cases [8%]. Necessary investigations were done and patients were posted for emergency surgery and reduction was the major procedure done -39 out of 50 cases [78%], resection anastomosis for 5 cases [10%], Appendicectomy in 2[4%] cases and Orchidectomy in 6 cases [12%]. Modified Bassini's[12] repair was done for 25 patients out of 50 in our study [50%], Meshplasty was done for 18 patients[36%] using prolene mesh, and darning was done for 7 cases [14%]. Of the 6 complicated femoral hernias, 5 were operated by Lothessien procedure and 1 by McEvedy. The post operative complications were wound sepsis [14%], bladder distension [12%], UTI[10%] and 1 death [2%].

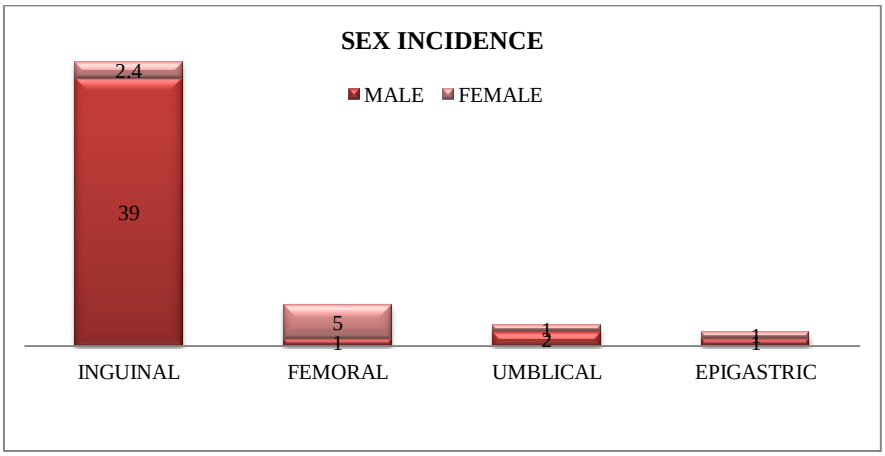
1. Age Incidence

< 35 YRS		35 - 50 YRS		51 - 70 YRS		> 70 YRS	
M	F	M	F	M	F	M	F
8	1	14	4	19	2	2	-
TOTAL	9		18		21		2



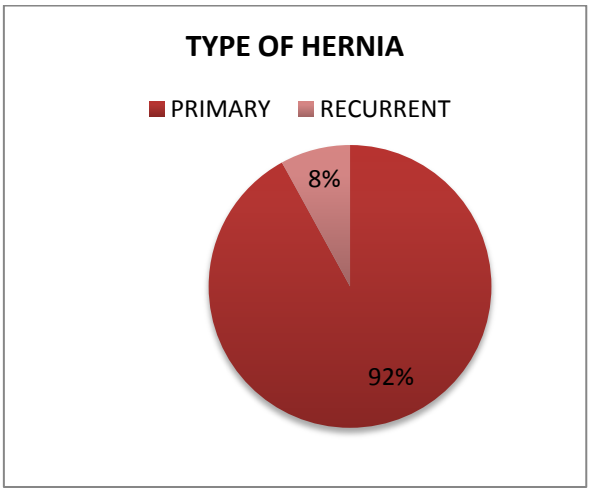
2. Sex Incidence

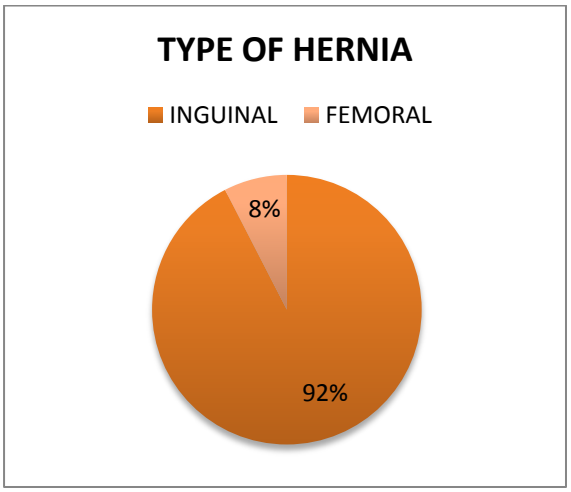
	Male	Female
Inguinal	39	-
Femoral	1	5
Umblical	2	1
Epigastric	1	1
Total	43	7



3. Types of Hernia

Inguinal	39
Femoral	6
Umblical	3
Epigastric	2
Total	50



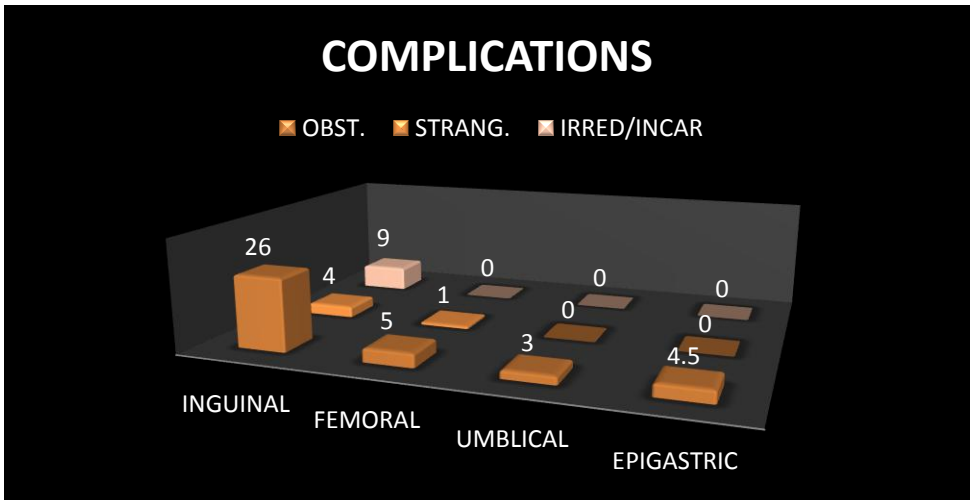


4. Laterality of Hernia

	Right	Left
Inguinal	30	9
Femoral	5	1
Total	**35**	**10**

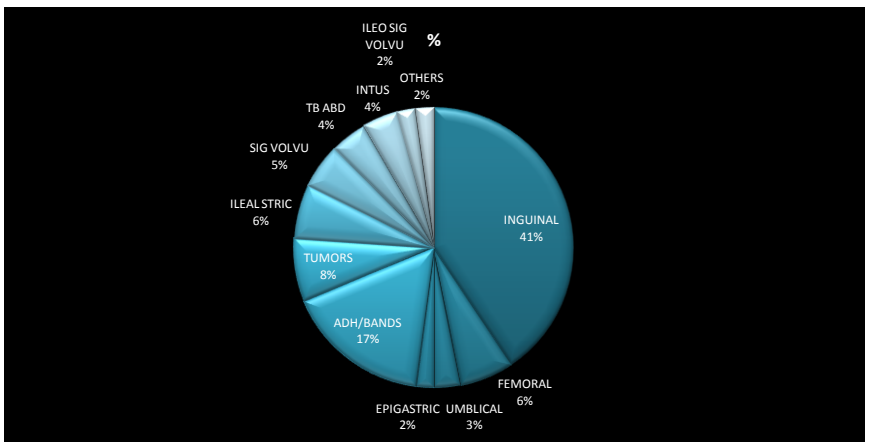
5. Complications Encountered

	Obstructed	Stranguated	Irred/Incar
Inguinal	26	4	9
Femoral	5	1	--
Umblical	3	--	--
Epigastric	2	--	--
Total	36	5	9



6. Intestinal Obstruction Cases

Causes	No. Of Cases
Obstructed External Hernias	
Inguinal	39
Femoral	6
Umbilical	3
Epigastric	2
Adhesions / Bands	16
Tumours	7
Ileal Stricture	6
Sigmoid Volvulus	5
Tuberculosis Abdomen	4
Intussusception	4
Ileo Sigmoid Knotting	2
Others	2
Total	96



7. Site of Constriction

Neck Of Sac	34
External Ring	13
Adhesions/Others	3
Total	**50**

8. Contents of the Sac

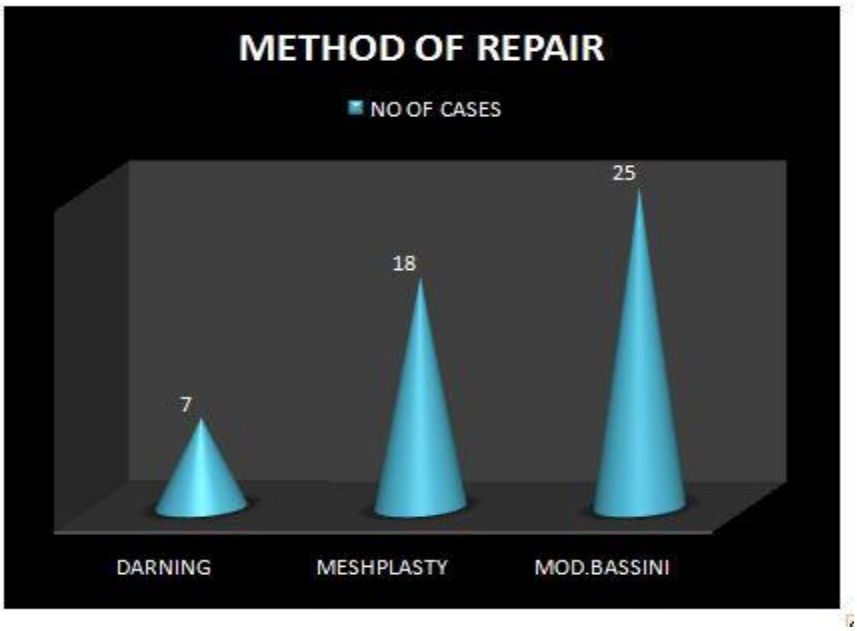
Ileum Alone	38
Ileum, Cecum, Appendix	6
Sigmoid Colon	4
Others	2
Total	**50**

9. Peroperative Procedure

Reduction	39
Resection & Anastomosis	5
Appendicectomy	2
Orchidectomy	6
Others	3

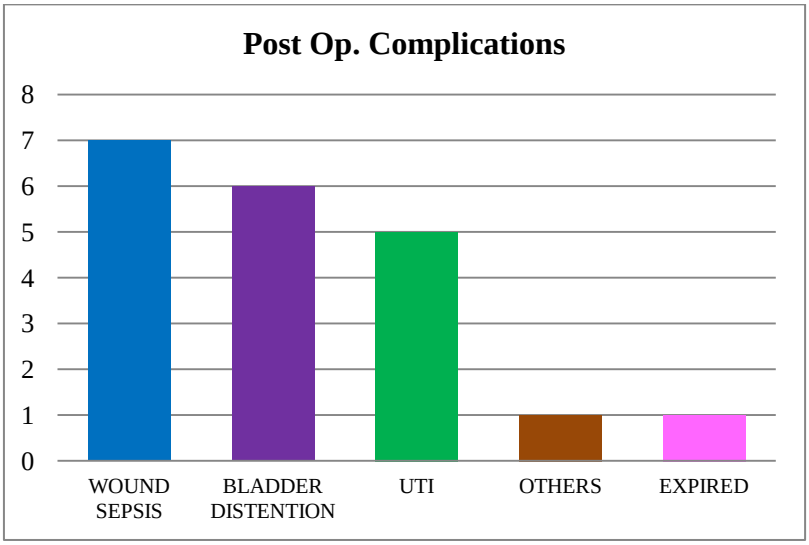
10. Method of Repair-Inguinal Hernia

Darning	7
Modified Bassini	25
Mesh	18
Total Cases	**50**



11. Post Operative Complications

Wound Sepsis	7
Bladder Distension	2
Uti	5
Others	1
Expired	1



Analysis and Discussion

The major complications of groin hernia identified in this study include obstruction and strangulation. The majority of patients who were admitted as emergencies with complicated hernias have not sought previous medical attention or been diagnosed with the condition in the outpatient department. This observation implies that most hernias that develop complications do so within a relatively short time in the natural history of the disease.[4] 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. Thus, patients with a short history of Inguinal hernia should be operated earlier than those with longer histories to prevent complications. Obstructed Groin Hernia have been the most common cause of small bowel obstruction in patients attending the emergency department for the same.[6] This is in marked contrast to the western series where adhesions and Bands top the frequency chart of causes of intestinal obstruction. 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.[10] Associated co-morbid illness like chronic obstructive pulmonary disease, prostatism, abdominal ascites & malignancy also contribute to the higher incidence in old age. There is marked male predominance in the occurrence of complicated groin Hernia. 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 sex ratio in our study is 4: 1.Inguinal Hernia is the most common type of Groin 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. Direct inguinal hernia was never encountered in the study. Most of the presented hernias were of the primary variety. Only 4 cases presented with a recurrent groin swelling with evident complication. In our study it is highlighted that Right sided hernias, regardless of type are more common than left. This is no doubt associated with the later descent of the right testis and a higher incidence of failure of closure of processus vaginalis.[9] Bilateral cases were never encountered during the period of study, although literatures give a 12% Bilaterality. Obstruction of bowel content in the sac remains the most common complication of the groin hernias in the study accounting to about 60% of total cases. Strangulation is the most serious complication of groin hernias. This occurs more frequently with neglected incarcerated hernias with advanced age, and in large hernias with relative small openings. Initial Resuscitation was effectively done in all patients who presented with obstruction and strangulation of contents.[5] The systemic effects of strangulation, as well as other incidental conditions such as diabetes mellitus, arrythmias,

electrolyte imbalance were treated as intensively as possible in the short time available. Preoperative Broad spectrum antibiotics were given to all who showed signs of obstruction and peritonitis.[5] The emergency procedure were carried mostly in regional anaesthesia which included spinal anaesthesia in 37 cases and epidural in 6 cases.[15] Cases who showed features of peritonitis preoperatively and those with prolonged duration of surgery than expected were operated under general anaesthesia. One of the patient did not recover from general anaesthesia, was in ventilator for 36 Hours and subsequently expired. 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 (less common). The study also showed that the neck of sac was the most frequent constricting agent. Most of the incarcerated / irreducible hernias had adhesions within the sac as the constricting agent.

Observation from the study showed that the ileal loops was the predominant content of the opened up hernial sac. In about 5 cases of strangulated bowel, resection and end to end anastomosis was done. Laparotomy was proceeded in two of these cases as the hernial opening was narrow and the bowel loops could not be sufficiently exteriorized. Laparotomy was done through midline incision. Drains were kept for a period of 48 hours. Appendicectomy was carried in those cases (4 in number) where appendix was found as a content of sac. Orchidectomy was done in 4 of the older patients to facilitate efficient repair and to prevent recurrence. The choice of the method of Hernia repair rests on the surgeon. Neither procedures shared significant advantage over others if done properly. Recurrence in a patient who underwent darning was mainly due to wound sepsis during immediate postoperative period. Prosthetic mesh was used incases for Hernia repair, this was done in cases where there were no signs of intra op sepsis. Many of the surgeons employed the Trans inguinal approach of Lotheissen to deal with the obstructed femoral hernia. The neck of these sacs were exposed by incising the posterior inguinal canal. The femoral canal was closed by suturing the conjoint Tendon to the iliopectineal line using three non absorbable sutures. Tanner's muscle slide was done when there was any Tension. Strangulated femoral Hernia were dealt thro High approach of McEvedy, as this gave immediate access to the peritoneal cavity.[6] Wound sepsis and Bladder distension remained the most common complaints of patients in postoperative period. Five of the six cases who presented with bladder distension following catheter removal had preoperative finding of prostatic enlargement. They were advised to undertake further treatment in Urology Department after discharge. Urinary tact infection was reported in five cases which responded well to the Urinary specific antiseptics. One patient who underwent resection and anastomosis for strangulated bowel expired due to overwhelming septicemia. he presented with gross peritonitis at the time of admission. He was on ventilator for 36 hours following failure to recover from anesthesia. The mortality rate in our study is henceforth 3%.Although most of the patients came for suture removal after a week of surgery, only 5 patients came for followup (about 10%). One came with recurrence and another with stitch abscess. The offending suture material was removed.

Conclusion

1) The major complications of groin hernia in our study included irreducibility, obstruction and strangulation.
2) Obstructed groin hernia remains the most common cause of small intestinal obstruction, admitted in emergency department in our part of the country.
3) Most of the complicated groin hernias occur in old aged people. Males out number female in overall incidence. Femoral Hernia is commoner in females.
4) Primary indirect Inguinal Hernia were the most common type of hernia in the study.

5) Right sided Hernias are more common than left regardless of the type of Hernia.
6) Obstruction of the bowel in the hernial sac is the most commonly presented complication.
7) Neck of the hernial sac was the most common constricting agent causing complication.
8) Ileal loops were the most common content of the hernial sac.
9) Initial resection was instituted in all cases of strangulation which helped in smooth preoperative course and smoother postoperative recovery.
10) Choice of Hernia repair was decided on patient's requirement and surgeon's preference. No significant advantage was made one over another
11) Pain and Wound sepsis were the chief postoperative complications encountered by the operated cases.

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