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RESEARCH ARTICLE

GROIN HERNIAS PRESENTING AS EMERGENCY IN ADULTS AND ITS OUTCOME, A PROSPECTIVE STUDY

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ABSTRACT

Aims and Objectives:
1.To study emergency presentation of groin hernias and its outcome
2.To study about various Acute surgical emergencies in groin hernia
4.To study various symptoms of presentation and complication
5.To study age and sex incidence
6.To study types of inguinal hernia that presented as acute emergency
7.To study the laterality among cases
8.To study content of hernial sac
9.To study duration of hernia before acute presentation
10.To study the type of surgery done
Materials and Methods:
Study design: Prospective study
Study centre: Department Of General Surgery, Thanjavur Medical College Hospital, Thanjavur, Tamilnadu, India
Study period: SEPTEMBER 2014 to SEPTEMBER 2015
Duration of study: 12 months
Total number of cases studied: 47
Inclusion criteria:
1.Both sex, with age >18 years,
2.Incarcerated and strangulated inguinal and femoral hernias , recurrent irreducible inguinal hernias
3.Cases which were regular for post treatment follow-up.
4.Patients willing to be part of this study.
Exclusion criteria:
1.Age <18 years
2.Ventral and incisional hernias
3.Cases which did not come for regular follow-up and
4.Patients not willing to be part of this study.
Conclusion: Complicated groin hernias has been associated with increased mortality and morbidity and hence elective repair of hernia should be done once it is diagnosed. Even if it presents as emergency it should be treated surgically as early as possible to avoid grave complications like bowel gangrene, anastomotic leak, iliostomies, septicemia and even death. Incarcerated hernias should be operated in less than 12 hrs of presentation and strangulated hernia on an emergency basis to prevent prolonged morbidity and mortality.

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INTRODUCTION

Inguinal hernia is the most commonly performed surgery in general surgery. Overall risk of developing hernia is 15% in men and < 5% in women. Hernia repair has evolved and turned into a day care procedure nowadays. 75% of all abdominal wall hernia are groin hernia making it the most common herniae among all abdominal wall hernia. About 95% of all groin hernia are inguinal hernia and about 5% are femoral herniae. Inguinal hernia are about 9 times more common in males than in female. Femoral hernia are more common in women, but inguinal hernia are the most common hernia women present with. It is estimated that 40% cases of femoral hernia present acutely in emergency department with strangulation / incarceration. The prevalence of hernia is more

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in the extremes of age, which is after an initial peak during infancy they become more prevalent with advancing age. The procedures advocated for hernia repair are simple and decrease morbidity and mortality in a major way. Incarcerated hernia should be operated in less than 12 hrs of presentation and strangulated hernia on an emergency basis to prevent prolonged morbidity and mortality. The need for study arises because though the treatment of groin hernia is simple and can be done as a day care procedure ignorance on the part of the patient might lead to complications like irreducibility, incarceration, obstruction and strangulation resulting in prolonged morbidity and might result in mortality too, which can be prevented if the presenting patients with hernia undergo treatment on an elective basis. In spite of various developments in the treatment modalities of hernia, the morbidity and mortality has not reduced significantly. Henceforth it becomes necessary to study the various clinical manifestations and the management of complicated groin hernia.

Groin hernias

Inguinal hernias are of two types, direct hernia and indirect hernia. Indirect inguinal hernia sac passes from deep inguinal ring obliquely towards superficial inguinal ring and at last into the scrotum . Direct inguinal hernia sac bulges outward and forward and deep inguinal ring and inferior epigastric vessels lies lateral to it . Surgical management of indirect and direct inguinal hernia being the same, they need not to be differentiated from one another. Combined direct and indirect hernia is called pantaloon hernia.

Incidence

Hernia's incidence, complication like strangulation hence bowel gangrene increases with age, Strangulation, the most common serious complication of a hernia, occurs in only 1% to 3% of groin hernias and is more common at the extremes of life. Mostly indirect inguinal hernias goes for strangulation. Also strangulation is most common in femoral hernia due to narrow neck (15% to 20%), hence once diagnoses femoral hernia has to be repaired immediately.

Etiology

1. Patent processus vaginalis
2. Failure of the transversalis fascia to retain the visceral sac in the myopectineal orifice.
3. Mechanical disparity between visceral pressure and strength of abdominal musculature:
4. Connective tissue disorders like Marfan, Ehlers-Danlos, Hunter-hurler syndrome, prune belly syndrome can lead to hernia formation.
5. Life-styles factors like smoking
6. Abdominal distention and chronic increase in intra abdominal pressure from ascites and peritoneal dialysis can damage the myopectineal orifice and cause a patent processus vaginalis to dilate
7. Genetic factors
   A study of congenital indirect inguinal hernias in China on 280 families indicated that the mode of transmission was autosomal dominant, with incomplete penetrance and paternal transmission from their father.
8. Obesity
9. Pregnancy
10. Chronic constipation
11. Appendicectomy causing injury to ilioinguinal nerve –right sided direct inguinal hernia

Presentation of Inguinal hernias

Presentation may be from asymptomatic hernia (which is seen in about 30% of patients) to a painful lump (commonest presentation - 66% of patients), this pain is mild in about 53.9% and severe in less than 1% of patient . focal pain in hernia is unusual ,in such case we should suspect hernia incarceration or strangulation. The most common symptom is a dull feeling of discomfort or heaviness in the groin region, which gets aggravated by activies causing increased intra abdominal pressure. Pain develops as a tight ring of fascia outlining the hernia defect compresses intra-abdominal structures with a visceral neuronal supply. pain gets worse at the end of the day after prolonged standing

Irreducible hernia

The contents cannot be reduced back into the abdomen, but there are no other complications. It occurs because of adhesions between the sac and its contents or from overcrowding within the sac. Irreducibility without other symptoms is almost diagnostic of an omentocele, and any degree of irreducibility can lead to strangulation.

Obstructed hernia

An irreducible hernia containing intestine which is obstructed from without or within, but there is no interference to the blood supply to the bowel. Patient will have colicky abdominal pain and tenderness over hernia site, and the symptom may gradually progress due to strangulation, but more often than not the obstruction culminates in strangulation. clinically distinction between obstruction and strangulation is difficult, and hence strangulation should be anticipated and treated accordingly.incarcerated omental fat can also produce significant pain and tenderness on physical examination.

Incarcerated hernia

The term "incarceration" can be used to indicate obstruction or strangulation, but it actually is the lumen of the bowel occupying a hernial sac is loaded and blocked with faeces. here the contents of the bowel can be indented with finger.

Strangulated hernia

It is an irreversible hernia with obstruction to blood flow. strangulation occurs when the venous outflow is blocked, resulting in congestion, edema, and tissue ischemia, which leads to reduced arterial flow to hernial contents, gangrene may occur as early as 5-6 hours after the onset of the first symptoms. femoral hernia often undergo strangulation due to the narrow neck .Strangulation causes intense pain in the

hernia followed quickly by tenderness, and signs and symptoms of sepsis. Here cough impulse will be absent. Incarceration and strangulation of a groin hernia may present as a bowel obstruction when the tight hernia defect constricts the lumen of the viscus. All patients with symptom of bowel obstruction needs a detailed physical examination of the groin region for inguinal and femoral hernias. If there is no bowel in the hernia sac, an incarcerated groin hernia may alternatively present as a hard, painful mass that is tender to palpation. The physical exam differs between an incarcerated and a strangulated hernia. The incarcerated hernia may be mildly tender due to venous congestion from the tight defect. The strangulated hernia will be tender and warm and may have surrounding skin erythema secondary to the inflammatory reaction from the ischemic bowel. The patient with the strangulated hernia may have a fever, hypotension from early bacteremia and leukocytosis. The incarcerated hernia requires operation on an urgent basis within 6 to 12 hours of presentation. If the operation is delayed for any reason, serial physical exams are mandated to follow any change in the hernia site indicating the onset of tissue loss. The strangulated hernia clearly requires emergency operation immediately following diagnosis.

Investigations

With ultrasound examination in supine and upright positions supported by a Valsalva maneuver, inguinal hernia is diagnosed with a sensitivity and specificity of morethan 90%. The accuracy of distinguishing indirect from direct hernias, even with the aid of Duplex-ultrasonography, is not higher than 73%. When there is a palpable mass, sonographic examination can differentiate between incarcerated hernia and lymph nodes. Duplex-ultrasonography of testicular perfusion can be used to assess pre-existing deficiencies and avoid postoperative litigation, especially in patients with recurrent hernias or testicular changes. In rare cases of inguinal pain without clinical or sonographic findings, computed tomography is indicated to rule out obturator hernias.

Various surgeries done for repair of hernia

It includes Herniotomy (excision of hernial sac) Herniorrhaphyor hernioplasty (strengthening of the posterior wall of inguinal canal either by repair or mesh)

Repair may be

Pure tissue repair: Shouldice, Mac Vay (still very useful repair) and modified Bassini

Prosthetic repair: Lichtenstein, Rives, Gilbert, Stoppa, TEP, TAPP Approach for repair may be ***anterior*** through inguinal canal (for tissue repair and mesh repair either onlay or sublay) or ***posterior*** through high supra inguinal pre peritoneal approach.

Problems in strangulated hernia are: sepsis, leak and fistula formation, ileus, wound infection, peritonitis, intra abdominal abscess formation like pelvic or subphrenic, electrolyte imbalance, respiratory complications like pneumonia and ARDS, DIC.

Inguinal hernia in females

Commonest groin hernia in females is inguinal hernia. Often it may contain Fallopian tube or ovary. Round ligament attached to labia. Sac is in close relation with round ligament. Sac is adherent and is often difficult to dissect. It is invariably indirect sac. Direct hernia is rare in females. Surgery is the treatment. Laparoscopic or open approach can be used. Round ligament is excised and inguinal canal is entirely closed. Mesh is placed in preperitoneal plane. That also prevents femoral hernia to develop. Incision and technique are same. Bilateral inguinal hernia can be treated surgically in same sitting.

Femoral hernias

A femoral hernia occurs below the inguinal ligament. sometimes it can occur over the inguinal canal. The hernia sac with content passes through femoral canal vertically downwards and then turns upwards to form a retort shaped swelling .Nearly 50% of men with a femoral hernia will have an associated direct inguinal hernia, whereas this relationship occurs in only 2% of women. Recurrence of femoral hernia after operation is only 2%. Recurrent femoral hernia repairs have a rerecurrence rate of about 10%.

Fig. 1. Femoral Hernia

Risk factors for groin hernias to present as acute emergencies

1) advancing age
2) large hernias with small opening
3) delay in hospitalizations
4) coexisting medical complications

In inguinal hernia the probability of strangulation was not more than 2% per year. But the probability of strangulation for femoral hernia is about 40% per year.

1) Age
Obstruction and strangulation occurred predominantly in middle age and elderly age groups
2) Sex
In case of inguinal hernia males are twice prone for complication than female sex.
In femoral hernia females are thrice prone than males for complication.
3) Side
Right sided hernia is more prone for complication than left sided hernias
Anatomical basis for right sided hernias
a) right testis descends later than left testis
b) line of attachment of small bowel mesentery is left side of L2 to right iliac fossa
4) Constriction ring
Deep ring is the most common site of obstruction.
5) Types
Femoral hernia is more prone to strangulation than inguinal hernia.
6) Duration of hernia
The risk of groin hernia to produce complication is maximum in first three months due to tight ring. Later yielding of ring increases so complication decreases.
7) Content
Small bowel is the most common content. Omentum is the next common\. Slider is the next common type with large bowel as content.
8) Delay in hospitalization
It is an important factor that determines resection and subsequent morbidity and mortality. Mortality was 1.4% when hospitalization is within 48 hrs. Mortality is 10% and 21% at 47 hrs and 48 hrs. sepsis and wound infection were two important causes of death in patients with gangrenous

MATERIALS AND METHODS

This study was a prospective study done in Thanjavur Medical College Hospital from September 2014 to September 2015. The study group was managed only by department of general surgery. Patients are of age group of 24 to 86 yrs. 47 cases have been studied. These cases are studied from time of admission till discharge and followed up in outpatient 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 day postoperatively. Patients in the current study included those with and without associated medical disorders. The results of study were later analyzed and have been presented in this study.

Inclusion Criteria

1. Both sex, with age >18 years, with inguinal hernias
2. Those with incarcerated inguinal, femoral hernias, recurrent irreducible inguinal hernias
3. Cases which were regular for post treatment follow-up.
4. Patients willing to be part of this study.

Exclusion criteria

1. Patients < 18 years
2. Ventral and incisional hernias
3. Cases which did not come for regular follow-up and who did not complete or receive any medical or surgical treatment.
4. Patients not willing to be part of this study.

Observation and Analysis

Table 1. Master chart

S.No.	Age	Sex	Diagnosis	Presentation	Duration	Content	Asa	Treatment	Cbt	Outcome
1	75	F	R FH	IR 1	IMP	SMALL BOWEL(v)	2	R MCEWEDYS	HT	HS < 1 Week (UE)
2	65	M	L IH	O 2	1st year	SMALL BOWEL(v)	1	L HR	-	HS>1 Week (WI)
3	80	M	L IH	IR 1	3rd year	SIGMOID COLON +MESENTRY(v)	2	L HR	HT	HS < 1 Week (UE)
4	70	M	R IH	IR 2	>5 years	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
5	65	F	R FH	O 3	4th year	SMALL BOWEL(G)	2	RL+R@A	DM	HS < 1 Week (UE)
6	65	M	R IH	O 1	2nd year	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
7	56	M	R IH	O 2	>5 years	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
8	55	M	R IH	O 2	3rd year	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
9	34	M	R IH	O 2	2nd tear	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
10	70	F	R FH	O 1	1 st year	SMALL BOWEL(G)	2	RL+R@A	HT	HS> 1Week(S)
11	75	M	R IH	IR 3	1st year	SMALL BOWEL(V)	1	R HR	-	HS < 1 Week (UE)
12	45	F	L FH	IR 1	2nd year	SMALL BOWEL(V)	1	L LOTHEISEN	-	HS < 1 Week (UE)
13	66	M	L IH	O 1	3rd year	SMALL BOWEL(V)	2	L HR	CAHD	HS < 1 Week (UE)
14	86	M	R IH	O 1	1st year	SIGMOID COLON (v)	1	R HR	-	HS < 1 Week (UE)
15	55	M	L IH	O 2	>5 years	SMALL BOWEL(v)	1	L HR	-	HS < 1 Week (UE)
16	51	M	R IH	O 2	1st year	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)
17	56	M	L IH	O 1	1st year	SMALL BOWEL(v)	2	L HR	HT	HS < 1 Week (UE)
18	35	F	L FH	O 1	1st year	SMALL BOWEL(v)	2	LL	HT	HS < 1 Week (UE)
19	60	M	R IH	IR 1	3rd year	SMALL BOWEL(v)	2	R HR	DM	HS < 1 Week (UE)
20	48	M	R IH	O 1	4th year	SMALL BOWEL(v)	1	R HR	-	HS < 1 Week (UE)

Continue……..

21	65	M	R IH	O 2	2nd year	SMALL BOWEL(v)	1	R HR	-	HS>1 Week (WI)
22	55	M	R IH	O 2	>5years	SMALL BOWEL(v)	1	R HR	-	HS>1 Week(UE)
23	77	F	R FH	O 3	1st year	SMALL BOWEL+CAECUM(G)	1	LL+ R@A+I+MF	-	HS >1 week (WI+IA)
24	78	M	L IH	IR 1	1st year	SMALL BOWEL(V)	1	L HR	-	HS < 1 Week (UE)
25	65	M	R IH	O 3	>5 years	SMALL BOWEL (G)	1	R@A+HR	-	HS>1 Week(WI)
26	24	M	L IH	O 3	2nd year	SMALL BOWEL +CAECUM+AC (G)	3	R@A+HR	JDM	DEATH
27	70	M	L IH	O 1	3rd year	SMALL BOWEL(V)	1	L HR	-	HS < 1 Week (UE)
28	72	M	R IH	IR 1	2nd tear	SMALL BOWEL(V)	1	R HR	-	HS < 1 Week (UE)
29	24	M	R IH	O 3	1st year	SMALL BOWEL(v)	1	R HR	-	HS >1 Week (UE)
30	52	M	R IH	O 1	>5 years	SMALL BOWEL (V)	1	R HR	-	HS < 1 Week (UE)
31	62	F	R FH	IR 2	IMP	SMALL BOWEL(V)	1	RL	-	HS < 1 Week (UE)
32	75	M	L IH	O 2	3rd year	SMALL BOWEL(V)	1	L HR	-	HS < 1 Week (UE)
33	68	M	RIH	IR 2	1st year	OMENTUM(V)	1	R HR	_	HS< 1 Week(UE)
34	59	M	RIH	IR 3	>5 years	OMENTUM(V)	1	RHR	_	HS< 1 Week(UE)
35	67	F	R FH	IR 2	2nd year	SMALL BOWEL (v)	1	RL	_	HS< 1 Week(UE)
36	56	M	LIH	IR3	1st year	OMENTUM (G)	2	OMENTECTOMY+LHR	_	HS< 1 Week(UE)
37	53	F	LFH	IR 2	1st year	SMALL BOWEL (V)	2	LL	_	HS< 1 Week(UE)
38	83	M	RPH	O1	1st year	SMALL BOWEL(V)	2	RHR	_	HS> 1 Week(UE)
39	71	M	RIH	O2	2nd year	OMENTUM (G)	2	RHR	DM	HS>1 WEEK(wi)
40	59	M	LIH	IR 3	3rd year	SIGMOID COLON(v)	2	LHR	_	HS< 1 Week(UE)
41	51	F	RFH	O1	IMP	SMALL BOWEL(G)	3	R@A+RL	DM	DEATH
42	56	M	LDIH	O1	2nd year	SMALL BOWEL+OMENTUM(v)	2	LHR	_	(HS<1Week(UE)
43	66	F	LFH	O3	1st year	SMALL BOWEL (G)	2	R@A +LL	HT	HS< 1 Week(UE)
44	59	M	RIH	IR3	>5years	OMENTUM(v)	2	RHR	_	HS<1week(UE)
45	35	M	LIH	IR1	1st year	SMALL BOWEL(v)	1	LHR	_	HS<1week(UE)
46	45	M	RIH	O1	2nd year	OMENTUM(V)	1	RHR	DM	HS<iweek(UE)
47	78	M	RPH	O2	3rd year	SMALL BOWEL(V)	1	RHR	HT	HS<1week(S)

Lih - left indirect inguinal hernia
Rih – right indirect hernia
Rph-right pantaloon hernia
Ldih-left direct inguinal hernia
Rfh -right femoral hernia
Lfh - left femoral hernia

L hr - left herniorrhaphy
Rhr - right herniorrhaphy
Rhp- right hernioplasty
Lhp -left hernioplasty

R l-right lotheisen repair
Ll -left lotheisen repair

R@a- resection and anastomosis

Hr – herniorrhaphy

I- ileostomy
Mf-mucus fistula

IR 1 - history of irreducibility for 1 day
IR 2 - history of irreducibility for 2 dayS
IR 3- history of irreducibility for 3 da

O 1- history of irreducility <24 hrs
O2-history of obstruction(24 -36 hrs)
O3-history of obstruction>36 hrs

HS - HOSPITAL STAY
UE - UNEVENTFUL
WI - WOUND INFECTION
AL - ANASTOMOTIC LEAK
IA -INTRA ABDOMINAL ABSCESS

(v)-VIABLE
G- GANGRENOUS

F- FEMALE
M-MALE

CBT- COMORBIDITIES

Duration- duration of henia before acute presentation
Imp-immediate presentation (<1week)

Forty seven cases are studied. Mean age of patients is 60.17 years

Age group:

Age	Frequency	Percent (%)
Below 20yrs	1	2.1
21 to 30yrs	1	2.1
31 to 40yrs	3	6.4
41 to 50yrs	3	6.4
51 to 60yrs	15	31.9
61 to 70yrs	13	27.7
71yrs & above	11	23.4
Total	47	100.0

Table 2. Age Group

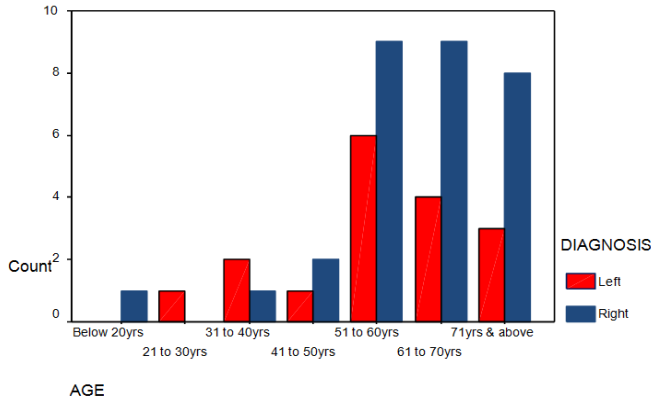

Chart 1: age group and side

In various studies done complicated hernia is most prevalent in the age group of 60 to 70 years. In the current study complicated hernia is wildly distributed in the age group of 24 to 86 years and maximum prevalence being in the age group of 51 to 60 years

Sex distribution:

		Frequency	Percent
Valid	Male	36	76.6
	Female	11	23.4
	Total	47	100.0

Table 3. Sex distribution

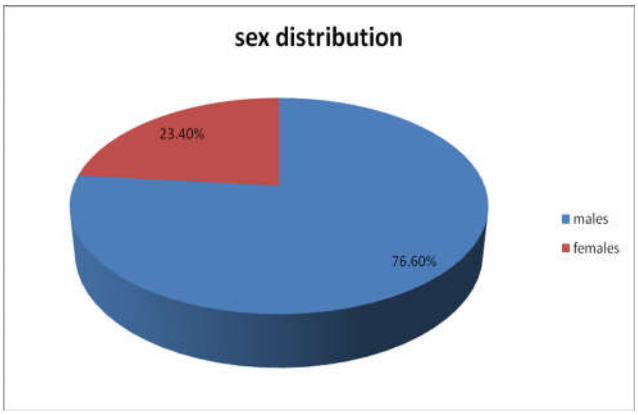

Chart 2: Sex is tribution

In the current study majority of the cases are males, with males and females contributing 76.6% and 23.4% of cases respectively and the ratio being 3:1. This illustrates increased incidence of groin hernia among males.

Type of Hernia:

	Inguinal	Femoral
Female	Nil	11
Male	36	Nil
Total	36	11

Table 4. Type of Hernia

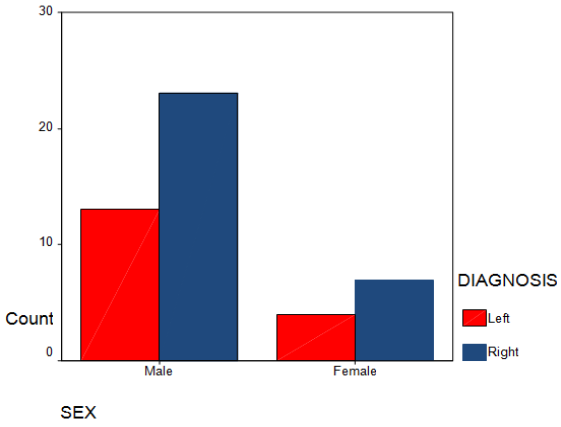

Chart 3: Type of hernia

In the current study complicated inguinal hernia is found only in males and no case has been reported among females and femoral hernia is found only in females and none of the males in the study has femoral hernia.

Duration of hernia before acute episode:

Table 5. Complications

	Frequency	Percent
Immediate(<1wks)	3	6.4
1st year	16	34.0
2nd year	10	21.3
3rd year	8	17.0
4th year	2	4.3
5th year	8	17.0
Total	47	100.0

In this study 34% patients developed acute complications within 1 year of developing hernia.

Side of hernia most commonly complicated:

Table 6. Laterality

	Frequency	Percent
Left	17	36.2
Right	30	63.8
Total	47	100.0

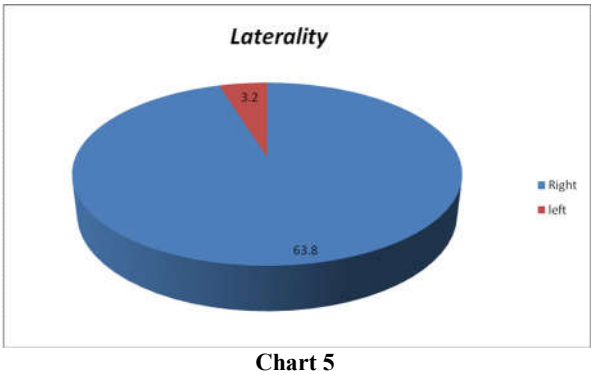

Chart 5

In the current study right sided hernia is found to be more common than left sided hernia with rt :lt ratio of 1.76:1

Symptoms :

Table 7. Presenting symptoms

Hernia type	Pain and incarceration	Obstruction	Bowel strangulation
Inguinal	12(25.53%)	24(51.06%)	2(4.2%)
Femoral	5 (10.6%)	6(12.7%)	5(10.6%)
Total	17(36.17%)	30(63.8)	7(14.8%)

- In the current study, 36.17% of groin hernia patients presented with pain and incarceration, of which 25.53% is contributed by inguinal hernia and 10.6% is by femoral hernia.
- 63.8% of patients presented with obstructive symptoms, of which inguinal hernia contributes to 51.06% of cases and femoral hernia contributes to 12.7% of cases.
- Bowel strangulation was present 14.8% of cases, of which 4.2% were inguinal hernia cases and 10.6 % were femoral hernia cases.
- Of the total no of inguinal hernia cases(36), 5.5% cases had gangrenous bowel intra operratively due to strangulation.
- In case of femoral hernia ,54.5% of total femoral hernia cases had strangulation and gangrene of bowel.

Contents of the hernial sac:

Table 8. Content of hernia

Content	Frequency	Percent
Omentum	6	12.8
Sigmoid colon	3	6.3
Small bowel (v)	35	74.4
Small bowel + large bowel	2	4.3
Small bowel + omentum (v)	1	2.1
Total	47	100.0

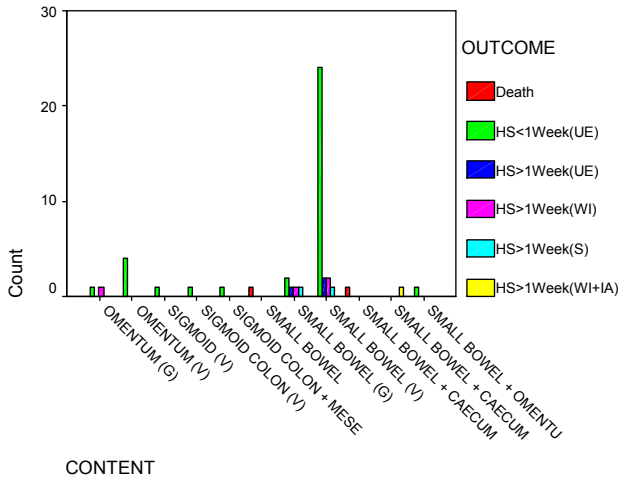

Chart 6

The most common content in the hernia sac was small intestine. In the currrent study also the small intestine was the commonest content followed by omentum.

Incidence of comorbidities:

Table 9. Comorbid Illness

Comorbid illness	Frequency	Percent
Nil	33	70.2
CAHD	1	2.1
DM	5	10.6
HT	7	14.9
JDM	1	2.1
Total	47	100.0

In the current study 70.2% of patients has none of the medical illnesses or comorbidities, Remaining 30% has medical illnesses like DM, HT, CAHD, JDM in varying proportions. And there is no relationship between co-morbidities and development of hernia.

Optimum procedure done:

Table 10. Type of repair

Treatment	Frequency	Percent
Herniorrhaphy	33	70.21
lotheisen repair	5	10.6
Lotheisen repair +resection anastomosis	4	8.51
lotheisen repair+ileostomy+mucus fistula	1	2.1
Hernirrhaphy+resection and anastomosis	2	4.3
herniorrhaphy+Omentectomy	1	2.1
High Mcewedys Repair	1	2.1
Total	47	100.0

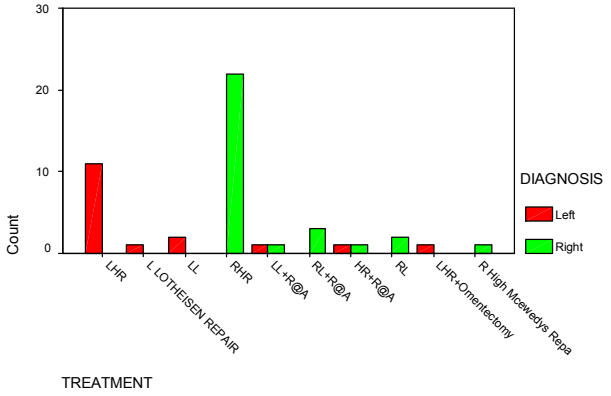

Chart 7

The most common procedure done was Herniorrhaphy (two layered darn repair with 1-prolene) which accounts for 70.21%, followed by Resection and anastamosis (along with hernia repair) done in 12.8% of total cases. Of the eleven cases of femoral hernia, Lotheissen repair being done in ten patients with or without resection anastomosis. McEvedy high approach being done in 1 patient.

Outcome:

Table 11. Outcome and complications

Outcome	Frequency	Percent
Death	2	4.3
Hospital stay<1Week(Uneventful)	35	74.5
Hospital stay>1Week(Uneventful)	3	6.4
Hospital stay>1Week(Wound infection)	4	8.5
Hospital stay>1Week(Seroma collection)	2	4.3
Hopital stay>1Week(Wound Infection+Intra abdominal abscess)	1	2.1
Total	47	100.0

Complication and time since presentation :

Table 12. Complications

Time since symptoms	Frequency	Inguinal	Strangulation	Femoral	Strangulation
Irreducibility<24 hrs	7(14.9)	5(10.6)	-	2(4.3)	-
Irreducibility24-36hrs	5(10.6)	2(4.3)	-	3(6.3)	-
Irreducibility>36hrs	5(10.6)	5(10.6)	1 omental gangrene(2.1)	-	-
Obstruction<24hrs	13(27.7)	10(20.12)	-	3(6.3)	2 bowel gangrene(4.3)
Obstruction 24-36hrs	11(23.4)	11(23.4)	1 omental gangrene(2.1)	-	
Obstruction>36hrs	6(12.8)	3(6.3)	2 bowel gangrene(4.3)	3(6.3)	3 bowel gangrene (6.3)
Total	47(100)	36		11(23.4)	

Conclusion

The following observation has been made from this study:

1) Incidence of acute complication of groin hernia is highest in age group of 51 to 60 yrs.
2) Complication of inguinal hernia is more common in males than females and complication of femoral hernia is more common in females than males
3) The incidence of acute complication of groin hernia is commoner on the right side than on the left side
4) Majority of them presented with acute symptoms, within 1 year of development of hernia (34%)
5) The most common presentation being groin swelling with symptoms of obstruction
6) The most common content found in the sac is small bowel followed by omentum
7) The most common procedure performed in the current study is herniorraphy for inguinal hernia and Lotheissen repair for femoral hernia.
8) Majority of the patients had uneventful postoperative period. Among those who developed complication the most common complication being wound infection
9) The risk of strangulation hence mortality and morbidity, increases as time of hospitalization increases.
10) The risk of strangulation is more for femoral hernia .
11) Mortality in the current study is associated with delayed hospitalization.

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