

A study on clinical presentation of umbilical and paraumbilical hernia in adults

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Abstract

Aim & Objectives: To study clinical presentation of umbilical and paraumbilical hernia in adult i.e distribution with respect to age and sex and mode of presentation. **Methodology:** External abdominal hernia surgeries; constituted 32.39% of total major OT cases at GIMS & District Hospital Kalaburagi from Aug 2015 to July 2018. **Results:** Umbilical hernia constituted 8.6% of external abdominal hernia. Paraumbilical hernia formed 66.6% of umbilical hernia with supra umbilical being more common. Out of 30 patients, 17 patients were between age group 31 to 50 years. 20 patients were females, ratio being male: female 1:2. Swelling around the umbilicus was the main common presentation with pain in the swelling in half of the cases. Minimum duration of complaints at the time of presentation was 6 days, and maximum duration was 7 years. Majority of umbilical hernia patients i.e 80% patients presented with irreducibility. 1 patient had skin ulceration, 3 patients had intertrigo, 1 patient had inflamed hernia and 1 patient had obstructed paraumbilical hernia. Obesity and multiparity were most common associated risk factor. 7 patients had chronic cough due to COPD and one patient had W ascites, which was well controlled at the time of presentation. Mayo's repair was most common operation performed for umbilical hernia repair, done in 23 patients. simple transverse repair was done in 5 patients umbilicus was preserved in 4 cases, with small hermal sacs. In one patient mesh repair was done. In 1 patient with obstructed paraumbilical hernia, emergency surgery with simple transverse repair was done. In all cases prolene No. 1 was used for repair. In majority of the cases defect was more than 1.5 cms. 5 patients had 2 defects in the limb of skin Incision lines. 30 patients with umbilical hernia contained small bowel for omentum or both. In cases general anaesthesia was used and in 5 cases spinal anaesthesia was given. Peri operative antibiotics were used in all cases. In 25 cases redivac suction drains were used. In 5 patients who needed little dissection, no drain was kept. Wound infection was the most common post operative complications, occurred in 13.3% of cases. Seroma occurred in 1 patient, and hematoma occurred in 1 patient- 19 patients stayed in the hospital for less than 8 days, 5 patients for 9 to 14 days and 6 patients for 15 to 21 days respectively. **Conclusion:** Surgery is the treatment of choice in all cases. The classic repair is that proposed by Mayo. In healthy individuals surgical repair with better non absorbable suture material given good results with a low recurrence rate.

Keywords: Umbilical Hernia, Surgery Management, Hernia, Swelling.

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Introduction

A hernia is an abnormal protrusion of a viscus or part of viscus through an abnormal opening in the walls of its containing cavity[1]. An external abdominal hernia is protrusion of abdominal contents through a weak spot in the abdominal wall.

Umbilicus is one of the weak areas of the abdomen and a common site of herniation. Any hernia which appears to be closely related to the umbilicus can be called as umbilical hernia.² It is one of the varieties of ventral midline hernia situated either above the umbilicus (supraumbilical) or occasionally below the umbilicus (infra umbilical) which occur in adults are included in this group and are called as paraumbilical herniae. Paraumbilical hernia is the commonest acquired umbilical hernia[2].

Umbilical hernias in adults usually are acquired. A small portion are persistent or reappearing infantile umbilical hernias. Most appear between the ages of 25 and 40 years. These hernias occur more for more commonly in women (75%) than in men[3].

Umbilical hernia occurs both in children and adults but the mode of presentation, natural history and treatment strategy are different in two groups. While umbilical hernia in children with defects not too large tend to undergo spontaneous reduction in size and seldom require surgery, the hernia in adults is always progressive one. Therefore the urgency of repair of paraumbilical hernia is greater than umbilical hernia in children, to prevent incarceration[4].

In elective case, it is important to identify any underlying associated

pathology and try to make the patient safe for operation, by correcting them. In obese patients pre-operative weight reduction is beneficial. In adults one operation that has stood the test of time for nearly more than a century for correction of umbilical hernia is Mayo's repair. Synthetic meshes have been used widely, in the repair of umbilical hernia, thereby recurrence rate in correction of large defects has been reduced.

This study has been taken to explore various aspects of umbilical hernia in our set-up. Attention has been given to age and sex distribution, different types of umbilical hernia, clinical presentation, risk factors and associated disease and surgical treatment. A total of 30 cases were studied admitted in GIMS & District Hospital, Kalaburagi, according to proforma. The patients were followed up for 1 year period.

As this study is on only a small group of patients and for a limited follow up period no new detection could be made.

Aims and objectives

1. To study clinical presentation of umbilical and paraumbilical hernia in adult i.e distribution with respect to age and sex and mode of presentation.
2. To study risk factors associated.
3. To study effectiveness of different types of surgical procedures.

Materials and methods

A study of all the cases of umbilical and paraumbilical hernia in adults which were admitted and treated at GIMS & District Hospital, Kalaburagi has been carried out from August 2015 to July 2018.

A total of 30 cases were studied during the 12 months study period. For uniformity of case study a proforma was prepared and all cases were studied as per the proforma. Detailed history was obtained from the patients or patients attendants. The age, sex, duration of presenting symptoms were recorded. In adults, parity, nutritional status any

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cause for abdominal distension if present were taken into consideration.

In local examination special attention was given to position of swelling, cough impulse, skin over the swelling, reducibility, consistency and edge defect. All cases were clinically diagnosed. Routine laboratory investigations were done. Patients over 40 years were investigated for blood sugar, urea, cholesterol and ECG.

However, herniography, Ultrasonography, computed tomography are all established and accepted investigations for imaging hernias in cases of diagnostic uncertainty.

Cases were prepared for surgery after pre-operative correction of Anaemia hypertension, diabetes mellitus, obesity and local skin conditions. Surgeries done were Mayo's repair, simple transverse repair or mesh repair. Immediate post complications were recorded and treated.

Inclusion criteria

1. Umbilical and paraumbilical herma adults in both sexes
2. Umbilical and Paraumbilical hernia with or without complications.

Exclusion criteria

1. Umbilical hernia in infants and children
2. Umbilical hernia in pregnancy
3. Patients at high anaesthetic risk

Follow up

Study period being one year, patients were followed up within that period. Patients were examined for post operative complications and recurrence of hernia.

Parameters used for comparison

1. Distribution of different types of hernia
2. Distribution of different types of umbilical hernia
3. Age and sex distribution
4. Clinical presentation
5. Risk factors and associated diseases
6. Treatment modality
7. Size of defect
8. Contents of hernial sac.
9. Post operative complications.

Statistical tests used

1. X² (Chi-Square) test
2. Standard error of difference between two proportions

Results

A clinical study of 30 cases of umbilical and paraumbilical hernia in adults was done with the help of data available at GIMS & District Hospital, Kalaburagi from August 2015 to July 2018.

Total Number of admissions in surgical ward — 5430

Number of major OT cases done — 1420

Number of hernia cases operated — 460 (32.39% of Major OT cases)

Table 1: Distribution of different types of hernia

Types of Hernia	No. of cases	Percentage
Inguinal	349	75.86%
Incisional+Epigastric	78	16.95%
Umbilical	30	8.6%
Femoral	3	0.65%

Umbilical hernia formed the 3rd most common form of external abdominal hernia.

Distribution of different types of hernia

Types of Hernia

Table 2: Distribution of different types of umbilical hernia

Type of Umbilical hernia	No. of cases	Percentage
True acquired umbilical hernia	10	33.3
Paraumbilical hernia	20	66.6
Supra umbilical	15	
Infra umbilical	5	
Both	0	0

Paraumbilical hernia formed the commonest type of umbilical hernia. Supraumbilical hernia being more common.

Distribution of different types of umbilical hernia

Type of Umbilical hernia

Table 3: Age distribution

Age (Yrs)	True acquired umbilical hernia			Paraumbilical hernia			Both			Total	%
	M	F	T	M	F	T	M	F	T		
0-10	0	0	0	0	0	0	0	0	0	0	0
11-20	0	0	0	0	0	0	0	0	0	0	0
21-30	0	2	2	1	3	4	0	0	0	6	20
31-40	0	2	2	2	4	6	0	0	0	8	26.6
41-50	1	3	4	3	2	5	0	0	0	9	30
51-60	0	1	1	2	3	5	0	0	0	6	20
>61	1	0	1	0	0	0	0	0	0	1	3.3

The maximum number of patients were between age group 31-50 years. The mean age was 42 years.

Table 4: Sex Distribution

Sex	True acquired umbilical hernia	Paraumbilical hernia	Both	Total	%
Male	2	8	0	10	
Female	8	12	0	20	

Majority of patients were females ratio being M : F = 1:2

Table 5: Clinical Presentation

Presenting Symptoms	No. of cases	Percentage
Swelling around umbilicus	30	100%
Pain in the swelling	15	50%
Pain abdomen	1	2.5%
Abdominal distension	1	2.5%
Vomiting	1	2.5%

Swelling around the umbilicus was the most common presenting complaint, with pain in the swelling in half of the cases.

Table 6: Duration of complaints

Duration	No. of cases
0-6 Months	8
7-12 Months	4
1-2 years	8
2-3 years	3
3-4 years	3
4-5 years	2
>5 years	2

Minimum duration of complaints at the time of presentation was 6 days and maximum duration was 7 years.

Duration of complaints

Table 7: Reducibility at Presentation

Reducibility	No. of cases	Percentage
Completely reducible	6	20%
Irreducible	24	80%
Partial reducible	11	
Totally irreducible	13	

Majority of the umbilical hernia patients i.e 80% presented with the complications of irreducibility.

Reducibility

Table 8: Complications

Complications	No. of cases	Percentage
Skin ulceration	1	3.3
Skin infection and intertrigo	3	10
Irreducible	24	80%
Obstruction	1	3.3
Inflammation	1	3.3

Irreducibility was the most common complications one patient with paraumbilical hernia for 3 years had skin ulceration since 2 months.

Three patients had intertrigo below huge hernial sacs. One patient had features of acute intestinal obstruction for one day. Another patient had features of inflamed hernia since 4 days.

Complications

Table 9: Associated Risk Factors

Risk Factors	No. of cases	Percentage
Obesity	21	70%
multiparity	12	40%
Chronic cough	7	23.3%
H/o ascites	1	3.3%

Obesity and multiparity were the most common associated risk factors. One patient had H/o ascites due to alcoholic cirrhosis with portal hypertension which was well controlled at the time of presentation. One patient with umbilical and six patients with paraumbilical hernia had chronic cough due to COPD.

Associated Risk factors

Table 10: Types of Operation

Operation	No. of cases
Mayo's repair	23
Simple transverse repair	5
Prosthetic mesh repair	1
Emergency surgery with simple transverse repair	1 (Obstruction hernia)
Other surgeries in same sitting	2

Mayos repair was the most common operation performed for umbilical hernia repair. Umbilicus was preserved in 4 cases with small hernial sacs. In one patient with paraumbilical hernia, prosthetic mesh repair was done by keeping prolene mesh in preperitoneal space. In one patient with obstructed hernia, emergency surgery with simple transverse repair was done. Bowel was viable, hence resection anastomosis was not done. In two patients other surgery was done in the same sitting. In one patient Mayos repair of paraumbilical hernia with right inguinal herniorrhaphy was done. In one patient Mayos repair of umbilical hernia and mesenteric cyst excision was done.

In all the 30 patients prolene No. 1 suture material was used for repair. Large defect hernia patients were given post operative abdominal binders.

Table 11: Distribution according to size of defect

Size of defect	No. of cases
Small up to 0.5 cm	2
Medium up to 0.5 to 1.5 cm	13
Large > 1.5 cm	15

No. of defect	No. of cases
Single	25
Multiple	5

Majority of the umbilical hernia were having large, single defect. The size of the defect was measured intraoperatively. 5 patients had 2 defects in the limit of skin incision lines, hence defects were joined and subsequent repair was done.

Distribution according to size of defect**Table 12: Contents of the sac**

Contents	No. of cases
Omentum	13
Small bowel	14
Both omentum and small bowel	3
Others(Transverse colon)	Nil

Majority of the umbilical hernia contained small bowel or omentum. Three patients with paraumbilical hernia contained both omentum and small bowel.

Contents of sac**Table 13: Anaesthesia used**

Anaesthesia	No. of cases
General anaesthesia	25
Spinal anaesthesia	5

In majority of cases general anaesthesia was used. Spinal anaesthesia was used in 5 patients with infra umbilical hernia.

Anaesthesia Used**Table 14: Antibiotics used**

Antibiotics	No. of cases
Ampicillin and Gentamycin	7
Ciprofloxacin	17
Cefotaxime	6
Metronidazole	1

Preoperative antibiotics were used in all the cases. They were given for 5 to 10 days. Cefotaxime was used in hernia cases with complications other than irreducibility.

Antibiotics used**Table 15: Drains**

Drains used	No. of cases	Percentage
Redivac drain	25	83.3
No drain	5	16.6

In majority of cases redivac suction drain were used. Drain outputs were 50 to 100ml (1st POD) and 25 to 50 ml on (2nd POD). Drains were removed when drain quantity remained less than 10 ml. Most of the drains were removed on 2nd to 4th POD. Inpatients who needed little dissection, no drain was used.

Drains used**Table 16: Post Operative complications**

Complications	No. of cases	Percentage
Seroma	1	3.3
Hematoma	1	3.3
Wound infection	4 (2 Patients no drain) (2 Patients with drain)	13.3

Wound infection was the most common complication occurred in 13.3% of cases. Recurrence were not able to record because of short follow up period.

Post Operative Complications**Table 17: Stay in the Hospital**

Stay in the Hospital (Days)	No. of cases
1-8	19
9-14	5
15-21	6

Majority of the patients stayed in the hospital for less than 8 days. 7 patients With COPD and 6 patients with post operative complications stayed in the hospital for longer duration.

Discussion

Umbilical herma constitutes g 60/8) of external abdominal hernias. Structurally deficient umbilical cicatrix and paraumbilical zone provides the herniation with risk factors playing a significant role. An attempt is made to compare the present study with published data.

Distribution of different types of hernia

Umbilical herma occurs less frequently compared to inguinal hernia. Umbilical hernia incidence range form 3% to 10%. In our study it is 8.6%. This is also compared favourably with other studies.

Distribution of different types of umbilical hernia

In the present study 66.6% of umbilical hernia are supraumbilical being more common. This compares favourably with paraumbilical hernia are the most common acquired umbilical hernia in adults with supra umbilical being more common. This is because acquired defect in linea alba occur either above or below the umbilicus than at the umbilicus[5].

Age distribution

Maximum number of cases were between age group of 31 — 50 years mean age was 42 years in the present study. This correlates with Incidence is more common in this age group because of increased incidence of obesity. There were no cases in the age group of 12 to 20 years. This is probably because, the patients of this age group are rarely subjected to factors which are thought to be responsible for development of hernia like obesity, multiparity etc[6].

Sex distribution

Majority of patients In this series were females. ratio being M:F = 1:2 which is consistent with. The higher incidence in adult females is due to obesity, multiparity and stress during labour.

Clinical Presentation

Swelling around umbilicus and pain in the swelling were most common modes of presentation This correlates With

Reducibility of hernia

Out of 30 cases, 24 cases were irreducible (80%) i.e majority of cases presented with complication. This compares with

Complications

In our series, 24 patients had irreducible hernia, 1 case (3.3%) was of obstructed hernia in 1 case (3.3%) there was inflamed hernia and 3 patients had skin infection and intertrigo below the huge hernial sacs.

Associated risk factors

In our study, majority of patients were obese and multiparous females in the age group of 31-50 years. 7 patients had chronic cough due to COPD. They were treated with antibiotics and bronchodilators and expectorants. One patient had h/o ascites due to alcoholic cirrhosis with portal hypertension who underwent splenectomy and received full course of endoscopic sclerotherapy for oesophageal varices one year back. He was on tab propranolol and tab -aldactone. At the time of presentation ascites was controlled. All patients were got operated after proper pre-operative management[6].

Surgical Procedures

In this study 23 patients underwent Mayos repair, 5 patients underwent Simple transverse repair. Umbilicus was preserved in 4 patients with small hernial sacs. Mesh repair was done in 1 patient with large defect and keeping prolene mesh in the preperitoneal space. In one patient with obstructed hernia, emergency surgery with simple transverse repair was done. In 2 patients, other-surgeries were done in the same sitting. One patient underwent Mayos repair of paraumbilical hernia with right inguinal herniorrhaphy. Other patient underwent Mayos repair of umbilical hernia with mesenteric cyst excision, through same incision. Majority of surgeries were done under general anaesthesia. 25 cases[7].

Remaining 5 cases were done under spinal anaesthesia. In all cases monofilament, non absorbable suture material prolene no. 1 was used for repair. The subcutaneous tissues were closed to obliterate the dead space. Drains were used in most of the cases. In 25 cases redivac suction drains were used and no drains were used in 5 cases, as they needed little dissection. Large defect hernia patients were given post operative abdominal binders.

Size of defects

Size of defect was measured intraoperatively. In 13 cases it was less than 1.5 cms and in 15 cases it was more than 1.5 cms. In half of the cases the defect of large size.

In 25 cases there was single defect. In 5 cases there were 2 defects, which were in the limit of skin incision lines. Hence defects were joined together and subsequent repairs were done.

Post Operative complications

In this study it was 20%. They were seroma (1), hematoma (1), and wound infection (4) which were controlled with dressing, aspiration and appropriate antibiotics. 5 patients with Redivac drain developed wound infections. 2 patients with no drain developed complications such as wound infections[8].

In their study, seroma was most common post operative complication, wound infection being second. But in our study wound infection was more common than seroma. Wound infections were more due to patients unhygienic skin condition.

Recurrence

In the present study- there were no recurrence the follow up period being only one year, which is very much inadequate to comment upon real recurrence. Moreover some patients did not turn up for follow up[9,10].

Conclusion

Umbilical hernia are less when compared to inguinal hernia. Umbilical hernia are more common among multiparous. Obese females in the age group of 31 to 50 years. Swelling around umbilicus and pain in the swelling are the most common complaints. Diagnosis is mainly done by history of clinical examination in most of the cases. Surgery is the treatment of choice in all cases. The classic repair is that proposed by Mayo. In healthy individuals surgical repair with better non absorbable suture material given good results with a low recurrence rate.

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