

A Comparative Study Of Mayo's Repair With Mesh Repair In Umbilical And Paraumbilical Hernia

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Abstract

A comparative study of Mayo's repair with open mesh repair in case of umbilical and Paraumbilical hernia.

Background

Adult umbilical and paraumbilical hernia is a surgical condition most commonly seen in women. In the 3rd and 4th decades in life and in males much later. There is no consensus as to the ideal Treatment of this condition. There are many other co morbidities associated with this Conditions (BPH, Bronchitis, ascitis etc).

Methods

This is a randomized controlled trial from January 2020 to January 2021, fifty patients with adult Umbilical and paraumbilical hernia were admitted in the Department of General Surgery, GMKMCH, Salem, Tamilnadu. Operative technique included Mayo's repair (n=23) and prosthetic mesh repair (n=27). The Anaesthesia of choice was spinal anaesthesia. The mesh used was polypropylene mesh. Parameters like BMI, number of pregnancy and other illness were taken in account.

Results

There was only one recurrence in Mayo's technique but none seen with mesh repair. The highest incidence was found in 30-50 yrs age group. Female (n=33) constituting the major Proportion of the cases. The commonest mode of presentation was with pain and swelling at the umbilical region. Omentum was the most common content of the sac. Females with multiple pregnancies were more prone to develop umbilical and paraumbilical hernias. Prosthetic mesh repair can be performed with minimal post operative complications, low recurrence rate and achieving excellent patient satisfaction.

AIM

- 1. To study the incidence, presentation of umbilical hernia and paraumbilical hernia.*
- 2. To compare the result and suitability of anatomical repair and mesh repair in our setup.*
- 3. To compare the post operative complications (seroma, wound infection, pain, recurrence)*
- 4. To compare the etiology, risk factors, effect of other co-morbidities and their outcome in Mayo's and Mesh repair.*

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I. Introduction

Umbilical hernia has gained little attention from surgeons in comparison with other types of abdominal wall hernias (inguinal, postoperative); however, the primary suture for umbilical hernia is associated with a recurrence rate of 19–54%. The umbilical hernia is a common surgical problem mainly encountered in the 5th and 6th decades of life. Umbilical hernia is a protrusion of a viscus or part of a viscus through the umbilical cicatrix.

Paraumbilical hernia is an uncharacteristic protrusion of abdominal contents that pushes through the abdominal wall surrounding the umbilicus. Strenuous activities usually cause the bulge to appear around the umbilicus. A hernia is an abnormal protrusion of a viscus, or part of a viscus through a congenital or acquired defect. In adults, most umbilical hernias are in fact para-umbilical, with the defect arising just above or below the cicatrix. It is more common for hernias to occur just above the umbilicus, where the tissue consists of a thin layer of transversalis fascia. Inferiorly, there is slightly more reinforcement in the form of the obliterated umbilical vessels. They can present in either the elective or emergency setting and the treatment can differ in each case. Symptoms of umbilical hernia include a noticeable bulge around the umbilicus which is more prominent on standing and may disappear on lying down; pain; obstruction. Signs range from a reducible lump with a positive cough impulse to the emergency presentation of an unstable, obstructed patient. Painful, reducible hernias and strangulated, painful, irreducible hernias although less incidence should be treated with early surgery. Although most para-umbilical hernias contain omentum only, in the emergency setting, with an obstructed patient, one

should be prepared to find incarcerated and potentially ischaemic bowel and perform a full laparotomy with bowel resection if necessary. Although umbilical hernias are amongst the commonly occurring abdominal wall defects, not much work has been done to record the incidence. Western studies quote an incidence 4.65% among all types of hernias. This study makes an attempt to evaluate the incidence, clinical features, operative techniques and postoperative outcomes like recurrence and complications. It compares the modern technique of prosthetic mesh repair and suture repair of umbilical and paraumbilical hernias.

II. Materials And Methods

STUDY AREA

Government Mohan Kumaramangalam Medical College and Hospital

STUDY POPULATION

Patients admitted in all surgical wards of Government Mohan Kumaramangalam Medical College and Hospital with diagnosis of umbilical and para umbilical hernia Between January 2020 – January 2021.

METHODOLOGY

This is a hospital based randomized controlled trial. Fifty patients of Umbilical and Paraumbilical hernia admitted in department of General Surgery, Government Mohan Kumaramangalam Medical College, Salem who were Willing to be part of this study were registered and systematically examined According to the proforma and parameters such as height, weight, number of Pregnancies, and other illness were recorded in proforma, a detailed history was also obtained and noted in there. There were 17 male and 33 females with mean age of 43 and mean BMI of 24. The mean follow up was done for 10 months. (range 1-18) 23 patients had Mayo's anatomical repair, 27 underwent Polypropylene Mesh repair, Negative suction drain were left in place for a period of 3-5 days In all patients with Mesh repair.

The anaesthesia of choice was spinal anaesthesia with mild sedation.

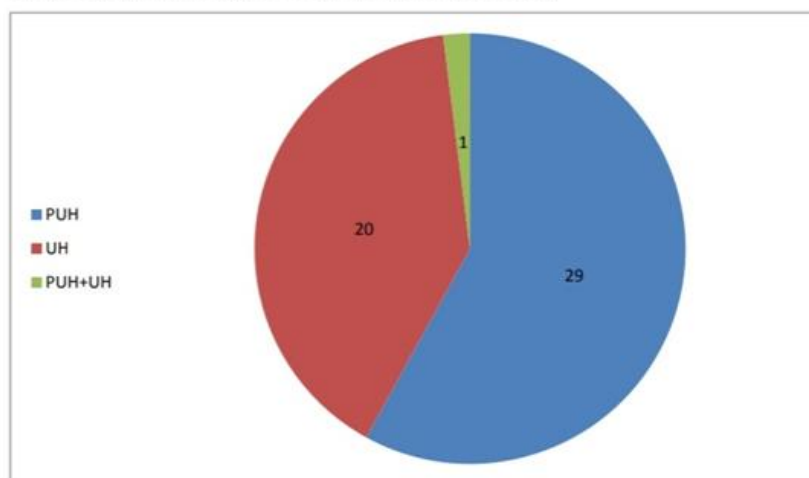
Principal outcome measures studied were post operative complications, Recurrences and patients satisfaction. Statistical methods applied to the Results.

III. Results

Table 1: Analysis of umbilical and paraumbilical hernia

Type of hernia	Mesh repair	Mayos repair	Total
PUH	17(63%)	12(52.2%)	29(58%)
PUH+UH	0(0%)	1(4.3%)	1(2%)
UH	10(37%)	10(43.5%)	20(40%)
Total	27(100%)	23(100%)	50(100%)

Graph 1 :Analysis of umbilical and paraumbilical hernia.



Among umbilical and paraumbilical hernias 58% were paraumbilical hernia, 40% were umbilical hernia and 2% were mixed.

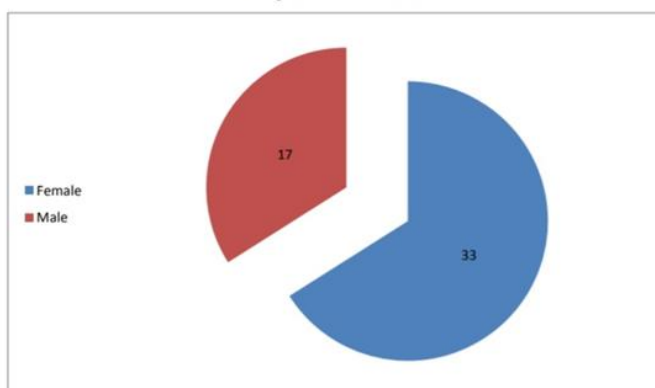
Sex incidence

Table 2 :Sex incidence

Gender	Mesh repair	Mayos repair	Total
Female	17(63%)	16(69.6%)	33(66%)
Male	10(37%)	7(30.4%)	17(34%)
Total	27(100%)	23(100%)	50(100%)

Samples are gender matched with P=0.886

Graph 2:Sex incidence



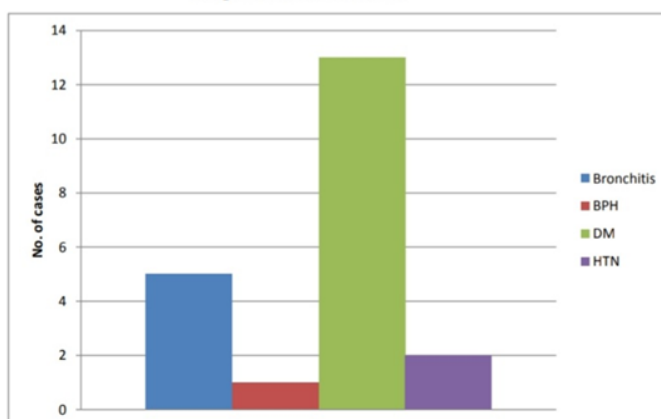
The major proportion of cases were women 66%. Most of the women affected were corpulent women with 2 or more pregnancies.

Associated illness

Table 7: Associated illness

Illness	No. of cases	Percentage
Chronic bronchitis	5	23.8
BPH	1	4.76
DM	13	61.9
HTN	2	9.5
TOTAL	21	100

Graph 6: Associated illness

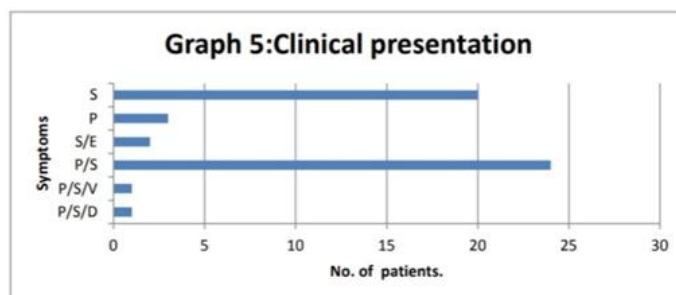


Twenty one patients (42%) had other associated illness. The majority of the patients had Diabetes and Hypertension. Five patients had chronic bronchitis, one patient had BPH.

Clinical presentation

Table — 6 : Clinical presentation

Symptoms		Hernia	
		Paraumbilical	Umbilical
Swelling	Count	12	8
	% within hernia	60	40
Pain	Count	2	1
	% within hernia	6.8	5
Swelling/Excoriation	Count	1	1
	% within hernia	3	5
Pain / swelling	Count	13	11
	% within hernia	44.8	55
Pain/swelling/vomiting	Count	1	-
	% within hernia	3	-
Pain/swelling/Discharge	Count	-	1
	% within hernia	-	5
Total	Count	29	21
	% within hernia	100	100

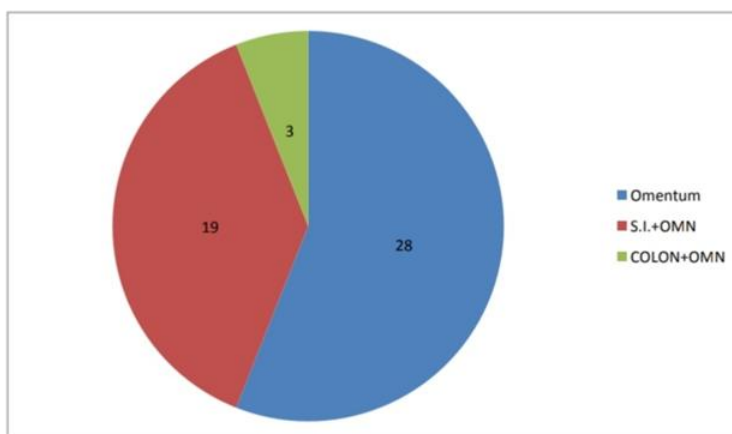


The mode of presentation was pain, swelling, skin excoriation, vomiting and discharge from the umbilicus and a combination of the above. The commonest mode of presentation was with pain and swelling at the umbilical region. (24)The next commonest presentation was swelling (20).

Table 9: Operative technique and contents of sac

Content of Sac	Mesh repair	Mayos repair	Total
Colon	1(3.7%)	0(0%)	1(2%)
Omentun	16(59.3%)	13(56.5%)	29(58%)
Small intestine	10(37%)	10(43.5%)	20(40%)
Total	27(100%)	23(100%)	50(100%)

Graph 8: Operative technique and contents of sac



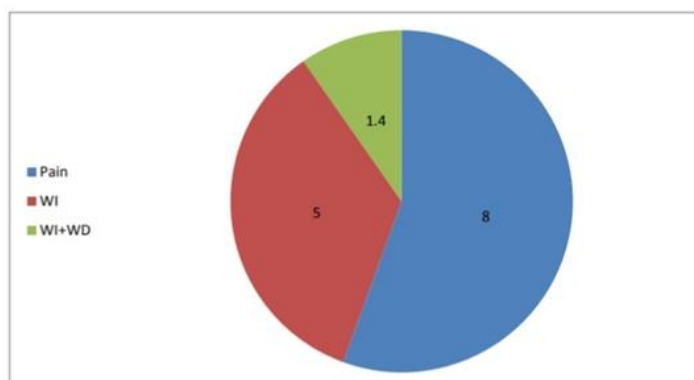
Of the 50 patient operated 27 patients had polypropylene mesh repair and 23 had mayo's repair. Patient with larger defects underwent mesh repair. The commonest content of hernia sac was omentum (28=56%).Nineteen patients 38% had small intestine and omentum together. The rest had large intestine and omentum together.

Post operative Complaints/Complications

Table 8: Post operative Complaints/Complications

Complications		Mayo's repair	Mesh repair	Total
Pain	Count	6	2	8
Wound infection	Count	2	2	4
Wound infection/ Wound dehiscence	Count	0	1	1
Total	Count	8	5	14

Graph 7: Post operative Complaints/Complications



The main complaints in 13% of the patient were pain and tightness of the abdominal wall which was more in Mayo's repair. 2 patients with mesh and 2 patients with mayo's repair had wound infection; one patient had wound infection and dehiscence. However it was treated with antibiotics and did not require mesh removal.

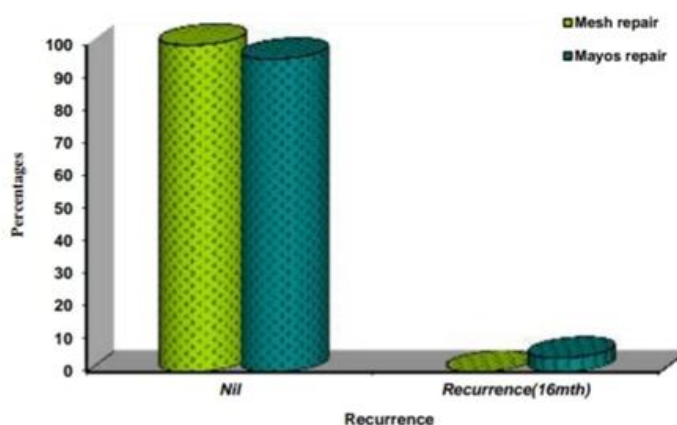
RECURRENCE

Table 10: Recurrences

Recurrence	Mesh repair	Mayos repair	Total
Nil	27(100%)	22(95.7%)	49(98%)
Recurrence (16mth)	0(0%)	1(4.3%)	1(2%)
Total	27(100%)	23(100%)	50(100%)

P=0.460

Graph 9: Recurrences



In all 50 patients underwent repair, 27 had prosthetic repair and 23 patients Mayo's repair. There was no recurrence with mesh repair but 1 case had recurrence out of 23 Mayo's repair (after 11 months).

RESULTS

Mayo's anatomical repair was done in 23 patients and 27 patients underwent polypropylene mesh repair. The greater percentage of patients were women, constituting 66%. Most of the women were in the younger age group (21-40) years male patients manifested the condition much later in life. Pain and swelling at the umbilical region was the commonest mode of presentation (24 patients) followed by swelling at the umbilical region. 42% of the patients had other associated illness like DM, Hypertension, BPH, Chronic bronchitis.

24% of the patients had associated condition of significance for the development of umbilical and paraumbilical hernia, chronic bronchitis, BPH, and history of hernia repair in childhood.

Pain and the tightness of the abdominal wall was the most common postoperative complaint.

Four patients had postoperative wound infection and one patient wound infection and dehiscence.

In 28 patients content of the sac was omentum. 19 patients had small intestine as well and 3 patients colon and omentum.

Only one patient having umbilical hernia repair had a recurrence with Mayo's overlap technique, none of the patients undergoing prosthetic mesh repair had recurrence.

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