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Novel Approach to Open Onlay Meshplasty for Ventral Hernia Repair

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Abstract

Background and Objectives: Hernia is defined as abnormal protrusion of viscus through a normal or abnormal weakness in the wall of its containing cavity. Ventral Hernias are second most common type of hernias accounting for 21 to 35% of all verities of hernias. Reported incidence of Incisional hernias is 2 to 11%. It is the most common complication after laparotomy by a 2:1 ratio over bowel obstruction and is most common indication for reoperation by 3:1 ratio over adhesive small bowel obstruction. This study was under taken to study the various clinical presentation and management of ventral hernias.

Materials and Methods: 300 cases of ventral hernias admitted to department of surgery Guru Gobind Singh hospital Jamnagar between periods of October 2010 to March 2021 were chosen for study. Data was collected including detailed history, clinical examination and investigation. Data was tabulated, analyzed and results interpreted.

Keywords: Ventral Hernia; Meshplasty; Scissors; Electro-cautery.

Introduction

Ventral hernias being the second most common type of abdominal hernias, after inguinal account for approximately 10% of all hernias. It's the facial defect in the anterolateral abdominal wall through which occurs the intermittentor continuous protrusion of pre-peritonealfat, intestinal contents, or rarely an abdominal organ, they are congenital or acquired.

Epigastric hernias occur from xiphoid process to umbilicus, umbilical hernias at the umbilicus and hypo-gastric hernias are rare spontaneous hernias that occur in midline below the umbilicus. In adults, about 80% of hernias are acquired as a result of previous surgery hence the term incisional hernias. After 0-26% of abdominal surgeries, they have been reported to occur. They usually occur within 2 to 5 years after surgery and the process starts from first postoperative month.

Materials and Methodology

- Study Settings: Department of General Surgery in a large teaching public health hospital.
- Study period: Ten year
- Sample Size: 300 Cases
- Study Type: Retrospective Study

Inclusion criteria

- Patients aged between 25 to 80 yrs
- Includes both males and females

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- All patients who presents with protrusion over previously operated surgical site over abdomen
- Patients who give informed consent

Exclusion Criteria

As such there is no exclusion criteria.

Method

1. All the patients fulfilling the inclusion criteria will be admitted.
2. A detailed history of the symptoms like pain and swelling over old surgical site over abdomen, vomiting, abdominal distension, constipation. Fever, tenderness over abdomen, duration of the symptoms, previous history of any surgical procedure and the postoperative course of the same with regarding any abdominal symptoms, wound infection, burst abdomen etc.
3. General physical and systemic examination.
4. Collection of blood will be done and detailed hematological and biochemical investigations will be done like hemoglobin, total and differential counts, serum bilirubin, serum urea, serum total proteins, serum creatinine, coagulation profile.
5. Radiology investigations like X ray chest and abdomen, USG abdomen and CECT abdomen
6. In all our cases for meshplasty strictly scissor was used as a method of dissection. No use of thermo coagulation was done.

Results

Table: Distibution of Hernias.

Type of Hernia	No. of Patients	Percentage
Incisional	150	50%
Para Umbilical	50	16.6%
Epigastric	38	12.6%
Fatty Hernia of Linear Alba	32	3.3%
Femoral	19	10.6%
Divarification of Recti	1	0.03%
Traumatic Ventral Hernia	5	0.16%
Other Rare Hernia	5	0.16%
Total	300	

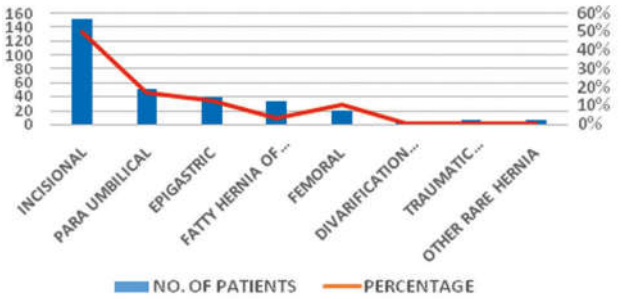

Fig. Distribution of Ventral Hernias.

Table: Sex Distibution in Ventral Hernia.

Male	Female
175	125

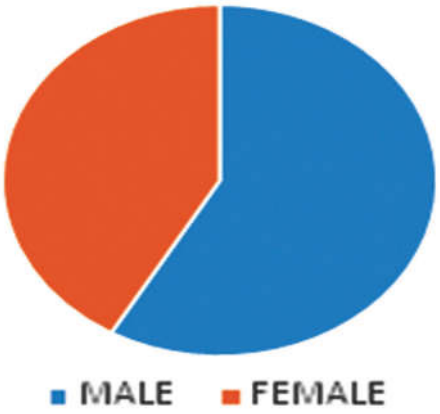

Fig. Sex Distibution in Ventral Hernia.

Table: Complication of Ventral Hernia Repair

Complication	Number	Percentage
Ileus	04	1.3%
Infection	04	1.3%
Seroma	07	2.3%
Gaping	05	1.7%

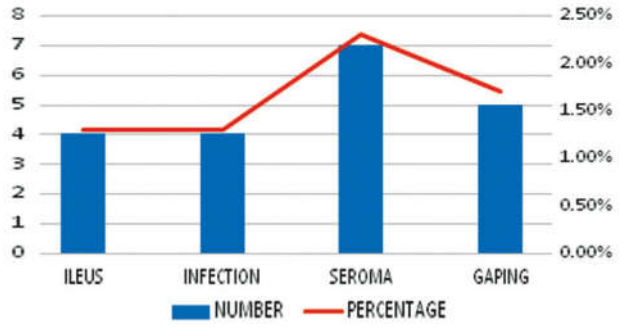

Fig. Complications of Repair.

Table: Type of Repair

Type of Repair	Number	Percentage
on Lay Meshplasty	150	50%
Anatomic Repair	90	30%
In Lay Repair	35	11.6%
Sub Lay Repair	25	8.3%

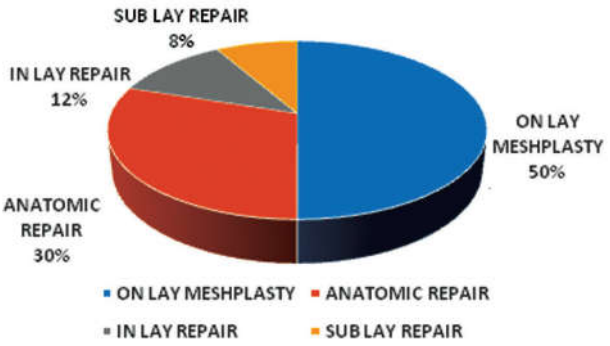

Fig. Types of Repair.

Table: Method of Surgery

Parameters	Incisional Hernia Surgery	
	Electrocautery N=30*	Scissor N=300
Seroma	5(16.7)	7(2.3)
Wound Infection	3(10)	4(1.3)
Wound Gaping	2(6.7)	4(1.3)
Ileus	4(13.3)	5(1.7)

*this data is taken from Comparative study between sharp and electro cautery dissection in incisional hernia surgery.

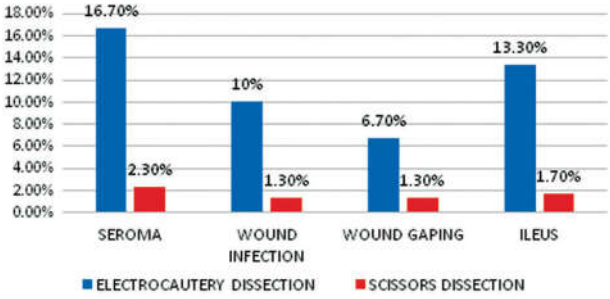

Fig. Comparison in mode of Dissection.

Discussion

1. In a study conducted in a population of 300 people 175 were males and 125 were females. Incisional hernia was found to be the most common type of ventral hernia followed by para-umbilical hernia, and traumatic ventral hernia found to be the least common.
2. Onlaymeshplasty was practiced mostly with almost 50 percent of the cases undergoing the same. It was followed by anatomic repair done in 30 percentage of patients.
3. Sub lay meshplasty was the least common with only 8.3 percent undergoing the procedure.
4. Seroma was found to be the most common with 2.3 percentage developing the complication followed by ileus followed bysurgical site infection and wound gaping.
5. We have compared our study with another study in which electro cautery was used. The comparison showed that cautery dissection had a higher rate of all complications, including seroma formation, compared to scissors dissection.

Conclusion

- In last 10 years we are making flaps of ventral hernia not with use of cautery but with use of scissors to avoid thermal coagulation of fat so as to decrease the chances of seroma formation.
- Therefore only seven patients developed seroma which was aspirated and higher antibiotics given for 14 days and stiches removed thereafter.
- Perforating branches going from abdominal wall to fat were ligated and drain kept for seven days.
- In 10 years not a single patient was seen where the mesh was exposed and had to be removed. Recently in SCOLA and laparoscopic operative interventions for ventral hernia, use of scissors has been advocated for making flaps.
- We in our study, make in change on seeing the wound on the fifth day, we roll transversely to prevent wound dehiscence.
- Two patients were refused surgery for obesity (weight > 120kg).

So in conclusion scissor dissection is better than electro cautery dissection in repair of ventral hernia.

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