

# To Study the Repair of Incisional Hernia by Preperitoneal Meshplasty

Sandeep Yadav<sup>1</sup>, Tripta S Bhagat<sup>2</sup>, Reena Singh<sup>3</sup>

<sup>1</sup>M.S General Surgery & Senior Resident, Department of Surgery Guru Teg Bahadur Hospital Delhi, <sup>2</sup>Professor Department of Surgery Santosh Medical College Ghaziabad, <sup>3</sup>Resident, Department of Surgery, Teerthankar Medical College

## Abstract

The preperitoneal mesh repair an excellent method called as Rive's stoppa technique where mesh was placed between peritoneum and abdominal wall or rectus muscle and posterior rectus sheath<sup>(9)</sup>. The main advantage of pre peritoneal mesh repair are - Less chance of mesh infection and erosion through skin because the graft lies in preperitoneal plane between posterior rectus sheath and peritoneum, avoids adhesions, bowel obstruction, enterocutaneous fistula and erosion of mesh, minimal morbidity and duration of hospital stay is less compared to other techniques. The main disadvantage is it is more time consuming, extensive preparation of preperitoneal plane and surgical experience. In our study 30 patients of incisional hernia were subjected to preperitoneal mesh repair by Rive's stoppa technique.

It was found that there were :

1. Less number of postoperative complications.
2. No recurrence was noticed in this study.
3. Preperitoneal mesh repair had excellent long-term results with minimal morbidity. As Compared with other types of mesh repair techniques (in literature), the preperitoneal mesh repair is the gold standard treatment for incisional hernia repair.

**Key Word-** Incisional Hernia, Hernioplasty, preperitoneal repair

## Introduction

Incisional hernia is defined as a diffuse extrusion of peritoneum and abdominal contents through a weak scar after an operation or accidental wound<sup>(1)</sup>. The exact incidence of incisional hernia has not been well defined, although a number of reports in the literature suggest that the incidence is probably between 10% to 20%<sup>[2,3]</sup>. Recent studies however show that about 2/3rd appear

within the first 5 years and that at least another third appear 5-10 years after the operation. It is seen more in females, obese and older age group<sup>[4]</sup>.

Various types of repair have been described, both anatomical and prosthetic. But the results have been disappointing with a high incidence of recurrence-about upto 50% after an anatomical repair and upto 10% following prosthetic mesh repairs<sup>(5)</sup>.

In general the postoperative complications of incisional hernia include pulmonary telectasis, bronchitis, pulmonary embolism, postoperative ileus, thrombophlebitis and deep venous thrombosis,

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### Corresponding Author:

**Dr Abhishek Singh Rathore,**

Assistant Professor, Depart of Surgery, LLRM Meerut.  
drabhishek20@gmail.com

where as local complications like wound seroma, haematoma, infection, sinuses and complications of mesh. Mesh repair is an excellent method of repair preferred for patients with large defects of the anterior abdominal wall, especially preferred more than 4 cm, size defect<sup>(6,7,8)</sup>. An excellent method, which has been used, called Rive's Stoppa technique, where mesh was placed between peritoneum and abdominal wall or rectus muscle and posterior rectus sheath<sup>(9)</sup>.

## **Material and Methods**

**STUDY DESIGN-** Prospective Study

**SAMPLE SIZE-**30 patients of incisional hernia

**DURATION OF STUDY-** January 2015 to September 2016

**PLACE OF STUDY-** Department of General surgery, Santosh Medical College & hospital, Santosh University, Ghaziabad **Inclusion Criteria:**

1. All the patients of both sex with incisional hernia between 15 and 65 years.
2. Incisional hernias located in the upper and lower midline incisions of the abdomen, Pfannenstiel's incision, Paramedian incisions, Recurrent hernia, and port site hernia.

### **Exclusion Criteria:**

1. All the patients with chronic obstructive pulmonary Disease (COPD) like asthma.
2. Patients with abdominal malignancy & cirrhosis with end stage liver disease.
3. Patients with previous loss of the abdominal wall & large scarred area of the abdominal skin.
4. Patients with age less than 15 years & more than 65 years.
5. Patients with size of hernia larger than 15 cm in its largest dimension.
6. Patients with complicated hernia operated in

emergency.

## **Methodology**

Patients fulfilling the selection criteria were offered Preperitoneal mesh repair. An informed consent was taken from all patients

All patients underwent routine preoperative investigations (haematological and biochemistry) including

1. Chest X ray
2. Ultrasonography of the abdomen to evaluate other diseases like gall bladder stone, fibroid uterus and tumor mass.

### **Procedure**

- After PAC fitness, patients underwent surgery.
- A day prior to surgery, shaving of the abdomen and genitalia was done.
- Informed consent was taken.
- A nasogastric tube and Foley's catheter was passed and broad-spectrum antibiotics were given to all patients before the procedure.
- Patients were explained about the effects and complications of the procedure.
- The procedure was done under general anaesthesia, spinal or epidural anaesthesia in supine position.
- In all cases, old operative scar was excised, generous skin incision was given to permit adequate exposure of hernial sac and defect.
- The sac was opened and contents were reduced after lysis of the adhesions.
- The excess sac excised, peritoneum closed with absorbable synthetic suture.
- Adequate preperitoneal plane prepared between the posterior rectus sheath and peritoneum, mesh placed

and fixed with prolene no. 2-0 or 3-0 sutures.

- Suction drains were laid on the mesh and brought out through separate stab wounds. Muscular aponeurotic structures repaired with prolene no.1 suture.

Skin closed after insertion of suction drain in subcutaneous plane.

**INTRAOPERATIVE FACTORS TO BE ASSESSED LIKE:**

- Operative time
- Creation of adequate preperitoneal plane
- Complications such as:
- Bleeding
- Other factors noted

**POSTOPERATIVE FACTORS:**

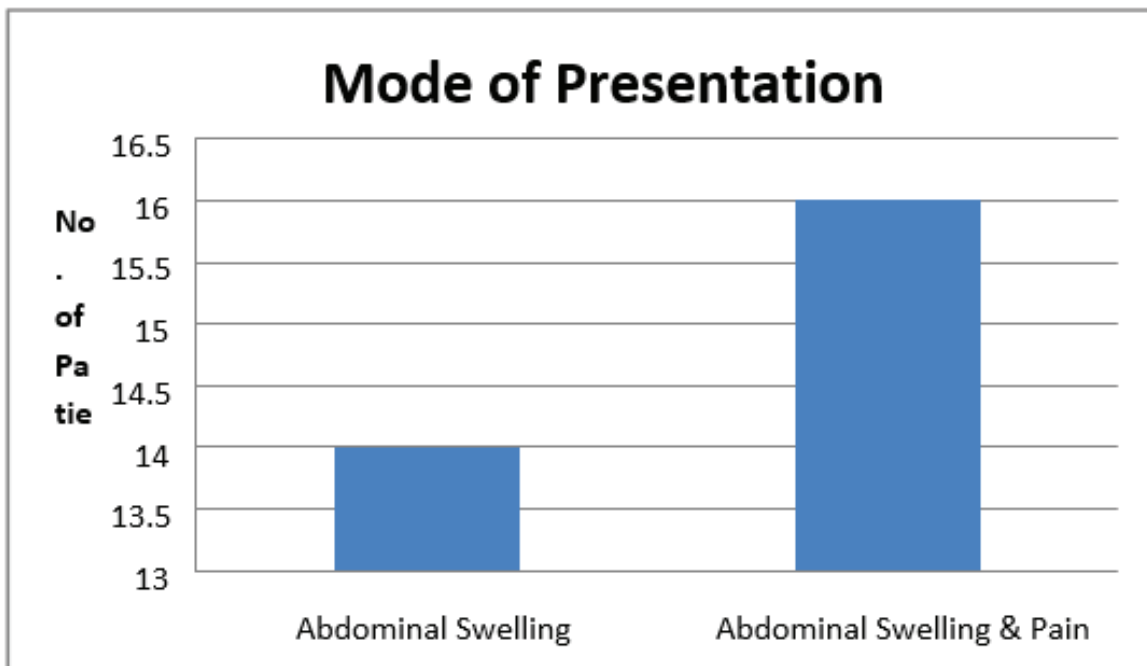
1. Duration of hospital stay(days)

2. Wound infection
3. Seroma formation
4. Postoperative ileus
5. Induration of stitch line
6. Recurrence
7. Assessment of pain using VAS Score

**FOLLOW UP**

- 3 Days
- 7 Days
- 3 Weeks
- 3 Months
- 6 Months

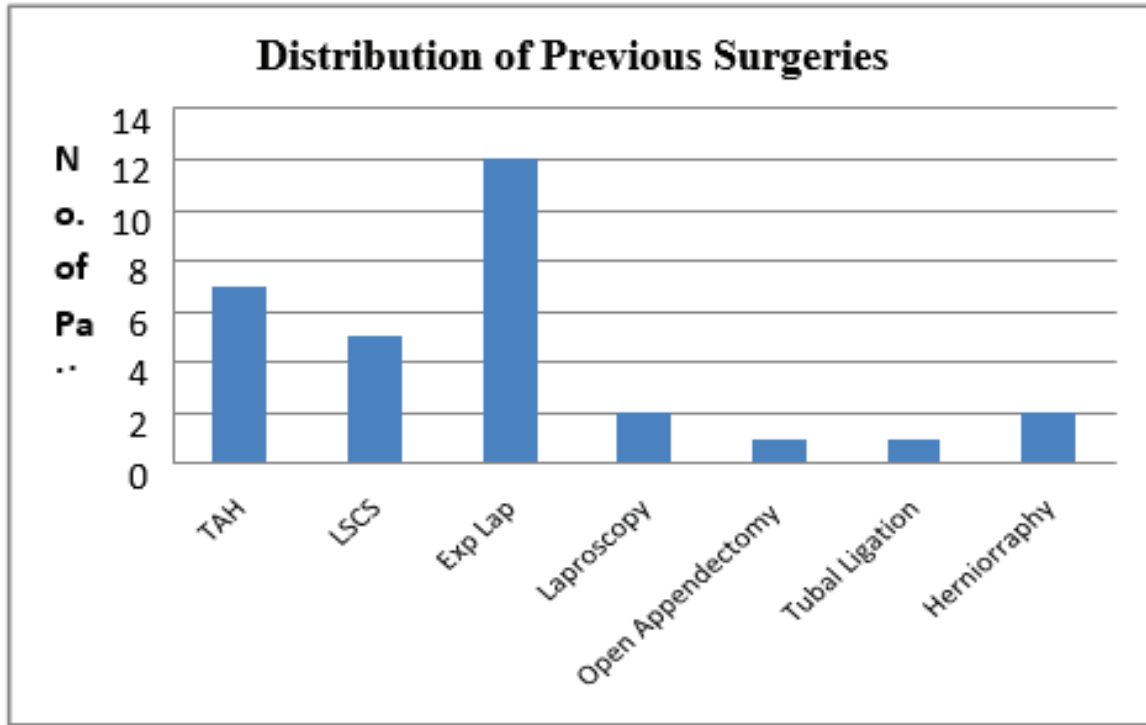
**Findings**



**Graph 1:Mode of Presentation**

**Table 1: Distribution Reducible/Irreducible Swelling**

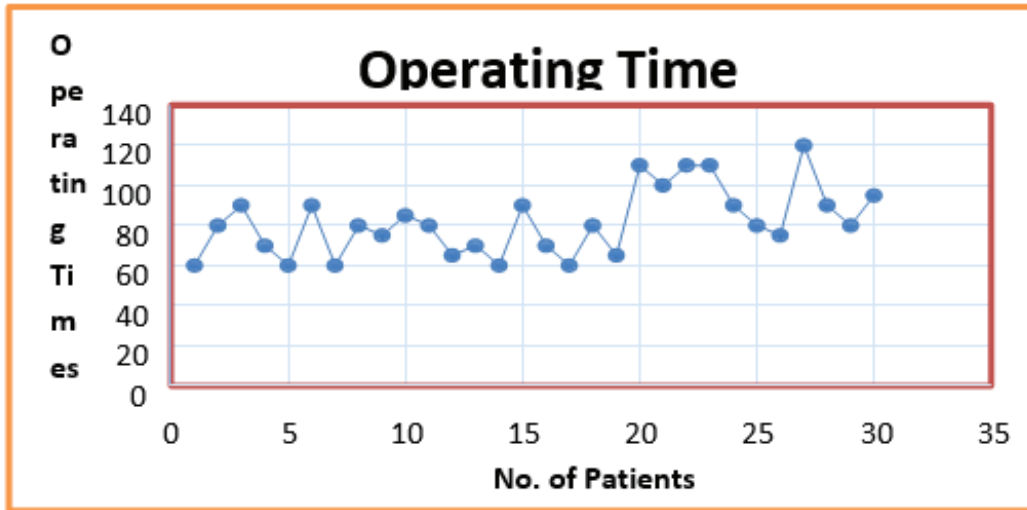
Reducible Swelling	27
Irreducible Swelling	3



**Graph 2: Distribution of Patients According to Previous Surgeries**

**Table 2: Distribution of Patients According to risk factors and Previous complications**

Risk factor involved	No. of patients
Wound infection/dehiscence	6
Post-operative Cough	0
Repeat surgery	2
Anemia	1
Obesity	2
Diabetes Mellitus	1
BEP	1
No complications	17



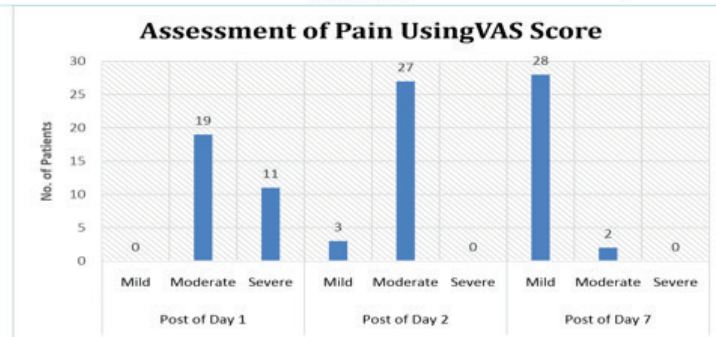
Graph : 3 Operating time during surgery.

Table 3: Distribution of Patients According to intra operative complications

Intra Operative Complications	Pateints
Bleeding	3
Peritoneal Breach	5
Nil	22

Table no-4 Assessment of Pain using VAS SCORE

Assessment of Pain using VAS Score		
		No of Patients
Post of Day 1	Mild	0
	Moderate	19
	Severe	11
Post of Day 2	Mild	3
	Moderate	27
	Severe	0
Post of Day 7	Mild	28
	Moderate	2



GRAPH 11 To Assessment of Pain using VAS SCORE

**Table 5: Post Operative Complications in Preperitoneal Mesh Repair in Incisional Hernia**

Complications	Patients
Wound Infection	3
Seroma Formation	2
Post Op Ileus	1
Induration of Stich line	5
Recurance	0
Nil	19

### Discussion

The study was conducted in the Department of General Surgery, Santosh Medical College, from January 2015 to September 2016. Total of 30 cases were included in this Prospective study. All the patients underwent preoperative evaluation and after pre anesthetic fitness were taken up for surgery. A preperitoneal mesh hernioplasty using a prolene mesh was done in all the patients.

In present study, age ranged from 16 years to 65 years with peak incidence in 36 to 45 age group (42%). There is a female preponderance noticed with 63.33%. This suggests that incisional hernia is more common in females. In our study 53.3% patients presented with abdominal swelling with pain and 46.67% patients presented with lump abdomen.

In present study, over 46.67% of cases occurred following obstetrics and gynaecological operations, and around 22% of cases occurred following general surgical operations. Of 30 cases, 23.33% of cases had hysterectomy, 3.33% of cases had tubal ligation, 16.67% of cases LSCS, 40% of cases laparotomy, 3.33% of cases were of appendicectomy, 6.67% of cases had undergone umbilical hernia repair and 6.67% of cases had recurrent

incisional hernia (who had undergone anatomical repair).

Among the risk factors promoting incisional hernias, wound infection accounted for 20% in our study. The other risk factors observed were obesity(6%), repeat Surgery(6%), DM(1%) and BEP(3%) .

In present study, all the patients were followed up after discharge for 15 days, 1 month, 3 months and few cases upto 24 months of duration. Post operative pain was assessed on Post Op Day 1, 2 and 7 using Visual Analog scale/(VAS). Pain was graded in to mild(0-3), moderate(4-6) and severe(>7). On First post operative day 19 patients had moderate pain and 11 had severe pain. On day 2 post op 3 patients had mild and 27 patients had moderate pain. Day on 7<sup>th</sup> post op day 28 patients had mild pain and 2 patients had moderate pain. No comparable study was found related to post op pain by VAS score in the literature.

36.66% patients in our study had post op complications, which was in the form of post op wound infection 3 cases(10%), 2 cases(6.66%) seroma formation, 1 patients(3.33%) post op ileus and 5 patients(16.66%) had induration of stitch line. No post operative complication was recorded in 19

patients(63.33%). No recurrence was seen in a 6 months follow up period.

### Conclusion

This preperitoneal mesh repair (Rive's stoppa technique)

is an excellent method . The main advantage are - Less chance of mesh infection and erosion through skin , avoids adhesions, bowel obstruction, enterocutaneous fistula and erosion of mesh, minimal morbidity and duration of hospital stay is less compared to other techniques. The main disadvantage is more time consuming, extensive preparation of preperitoneal plane and surgical experience. In our study 30 patients of incisional hernia were subjected to preperitoneal mesh repair by Rive's stoppa technique. It was found that there were 1. Less number of postoperative complications. 2. No recurrence was noticed in this study. 3. Preperitoneal mesh repair had excellent long-term results with minimal morbidity.

**Conflict of Interest**–Nil

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**Ethical Clearance**- taken from Santosh medical college committee.

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