

**Study of incisional hernia- evaluation of risk Factors and outcome of various surgical Techniques used in the incisional hernia repair**

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**Conflicts of Interest:** Nil

**Abstract**

**Background:** Incisional hernia is defined as” any abdominal wall gap with or without a bulge in the area of postoperative scar perceptible or palpable by clinical examination or imaging”.

Development of Incisional Hernia can follow any type of surgical incision, whatever its site or size, even the incision of the laparoscope trocar can cause it. Incisional Hernia was reported as a complication of abdominal surgery since the early days of surgery, Greedy (1836) and Maydl (1886)reported repair of Incisional Hernia, Judd (1912) and Gibbon (1920) described the anatomical repair of Incisional Hernia, Kirschner (1910) introduced

the auto graft (fascia lat, skin) and hetero graft (skin) for repairing Incisional Hernia.

**Materials & methods**

- From June 2021 to june2022, patients with incisional hernia who were admitted to different surgical units at as Ram Medical College, Eluru were the subject of the study.
- Routine laboratory tests were performed on all individuals. The patient was posted for the procedure under spinal/general anesthesia after fulfilling the requirements.

**Conclusion:** A study consisting of 40 patents who underwent incisional hernia repair by onlay and sublaymethod in ASRAM Medical College and

evaluating outcomes of onlay and sublay surgical techniques, preperitoneal sublay repair was found to have better patient compliance and satisfaction with regard to occurrence of complications.

**Keywords:** Incisional Hernia, Onlay, Sublay, Mesh Repair.

### **Introduction**

Incisional hernias have been reported in 10–50 per cent of laparotomy incisions and 1–5 per cent of laparoscopic port-site incisions. Factors predisposing to their development are patient factors (obesity, general poor healing due to malnutrition, immune suppression or steroid therapy, chronic cough, cancer), wound factors (poor quality tissues, wound infection) and surgical factors (inappropriate suture material, incorrect suture placement).

An incisional hernia usually starts as disruption of the musculofascial layers of a wound in the early postoperative period. Often the event passes unnoticed if the overlying skin wound has healed securely. Many incisional hernias may be preventable with the use of good surgical technique. The classic sign of wound disruption is a serosanguinous discharge.

A postoperative ventral abdominal wall hernia, more commonly termed incisional hernia, is the result of a failure of fascial tissues to heal and close following laparotomy. Such hernias can occur after any type of abdominal wall incision, although the highest incidence is seen with midline and transverse incisions.

Incisional hernias enlarge over time, leading to pain, bowel obstruction, incarceration, and strangulation. Obesity, advanced age, malnutrition, ascites, pregnancy, and conditions that increase intra-abdominal pressure are factors that predispose to the development of an incisional hernia.

### **Aims & objectives**

To evaluate the risk factors associated with Incisional Hernia.

To develop a strategy for an effective management of Incisional Hernia by studying the outcomes of various techniques in the incisional hernia repair.

To study the post-operative morbidity of various surgical techniques.

### **Methodology**

[1] The study was conducted for 12 months, i.e., from June 2021 to June 2022. The study was conducted in the Department of General Surgery of Alluri Sitarama Raju Academy of Medical Sciences located at Eluru, West Godavari (District), Andhra Pradesh.

[2] Information was obtained according to the proforma. 40 patients in total who met the requirements were enrolled in the trial.

### **Inclusion criteria**

1. Patient who gives informed written consent
2. All patients with Incisional Hernia between 18 to 70 years
3. Both the sexes

### **Exclusion criteria**

1. Patient unfit for surgery
2. Recurrent Incisional Hernia
3. Emergency surgery for Incisional Hernia
4. Pregnancy with Incisional Hernia

### **Procedure**

- Data will be collected in a specially designed case recording Proforma (CRF) pertaining to patient's particulars, proper history, clinical examination, investigations, diagnosis & surgical procedures.
- All the surgical procedures & medical management and investigations will be conducted under direct guidance and supervision of our guide.

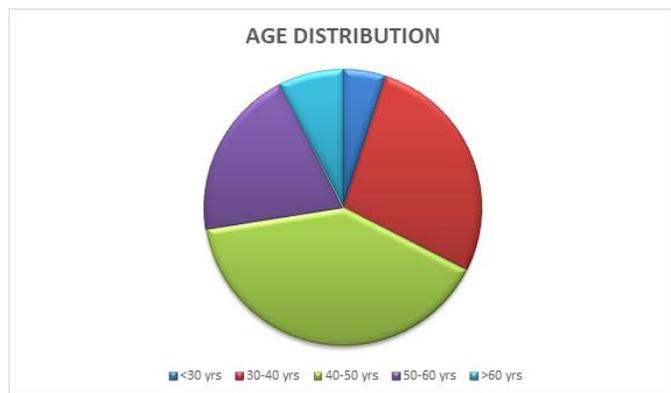
- Before the start of our study a written/informed consent will be obtained in local vernacular language from each patient.
- Almost all patients are operated under general anesthesia.
- Foley's catheterization and Naso gastric tube used.
- Patients were placed in supine position skin incision was made according to the site and size of the defect.
- The hernia sac was detected out and reduced and the defect assessed.
- When there were adhesions, sac was opened and contents were reduced.
- In onlay repair polypropylene mesh is sutured over the anterior rectus sheath, while in sublay technique mesh is placed under retro-rectus muscle position.
- Suction drain was placed, skin and subcutaneous tissue closed in layers.

**Results**

Table 1: Age distribution

Age	No. Of patients
<30 YRS	2
30-40 YRS	11
40-50 YRS	16
50-60 YRS	8
>60 YRS	3

Graph 1:



**Age distribution of patients**

In our study, most of the patients more than 65%, underwent incisional hernia surgery between the age of 30 to 50 years of these, most of the patients are in the age group of 40 to 50 years.

Table 2: Gender distribution

Sex	No. of patients
Male	4
Female	36

In our study, out of the 40 patients in incisional hernia repair, 4 patients (10%) are male. While 36 patients (90%) are female. This shows females are more prone for incisional hernia.

Graph 2:



Table 3: Type of incisional hernia repair done

Type of surgery	No of patients
Sub lay	20
Onlay	20

Graph 3:

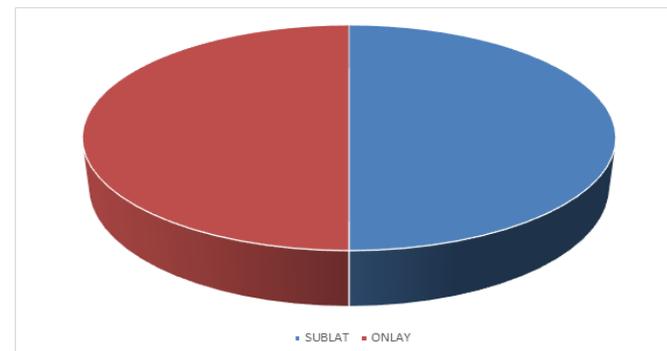


Table 4: post-operative complications of incisional hernia.

Post-up complications	Onlay repair	Sub lay repair
Seroma	6	4
Suture site infection	4	2
Wound dehiscence	2	0
Secondary suturing	2	0

In the present study, post-operative complications of onlay and sublay compared, which shows sub lay repair is having minimal number of complications.

### Discussion

- In our study, most of the patients more than 60%, underwent incisional hernia surgery between the age of 30 to 50 years. Of these, most of the patients are in the age group of 40 to 50 years.
- In our study, out of the 40 patients in incisional hernia repair, 4 patients (10%) are male. While 36 patients (90%) are female. This shows females are more prone for incisional hernia.
- In the present study, post-operative complications of onlay and sublay compared, from this, sublay repair is having minimal number of complications.

### Conclusion

A study consisting of 50 patients that underwent incisional hernia repair by onlay and sublay method in ASRAM Medical College and evaluating outcomes of onlay and sublay surgical techniques in ASRAM Medical College, preperitoneal sublay repair was found to have better patient compliance and satisfaction with regard to occurrence of complications. The preperitoneal sublay repair procedure can easily be performed by a surgeon with proper guidance and has a short learning curve.

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