

## An Observational Study to Evaluate Clinic-Demographic Profile and Complications & Management of Incisional Hernia

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Received: 20-03-2024 / Revised: 22-04-2024 / Accepted: 22-05-2024

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Conflict of interest: Nil

### Abstract

**Aim:** The aim of the present study was to assess the risk factors, clinical presentation and management in incisional hernia.

**Methods:** The present study was conducted in the Department of General Surgery, Patna Medical College and Hospital Patna, Bihar, India and having incisional hernia are included in our study by applying the following inclusion and exclusion criteria. The study was conducted during the period and total number 100 cases were taken for study.

**Results:** The study shows that incisional hernia is more common in females than males. Most of the patients belonged to 21-60 years. The study showed that all the patients (100%) presented with swelling in the abdomen. 25% Patients had associated pain in the swelling. In the present study, 45% had obesity and 25% had anemia. 32% underwent elective surgery and 68% underwent emergency surgery. In the study 15 patients had surgical site infection and 15 patients had seroma formation. 10 patients had Respiratory tract Infection. Almost half the patients in the study group were followed for complications, including recurrence. 20 patients were followed up for up to one year duration.

**Conclusion:** Incisional is more common in females, especially the multiparous. Incisional hernia is more common in patients who underwent the previous surgery on an emergency basis. Cough impulse was present in all the cases and the swelling reduced on lying supine. Seroma formation and surgical site infection were the common complications in the post-operative period. No recurrence was seen in the follow up of the patients.

**Keywords:** risk factors, clinical presentation, management, incisional hernia

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### Introduction

Incisional hernia is a common complication of surgical intervention. Its incidence is 10-50% in laparotomy incisions and 1-5% in laparoscopic incisions. [1,2] It is the result of failure of musculofascial tissue to heal in the early post-operative period. Highest incidence was observed in midline incisions however such hernias can occur after any type of abdominal wall incision. [3] Incisional hernia has multiple predisposing factors which include wound infection, Diabetes, postoperative abdominal distention, respiratory tract infection, anemia, obesity, and immunosuppression. These factors alone or in combination lead to development of incisional hernia. Other contributing factors for Incisional hernia are type of surgical procedure, surgical technique, suture material used and post operative events. [4,5] Most common presentation is localized swelling and pain along

previous incision scar. Recurrence rate after primary anatomical repair ranges from 20-40%. [6]

Many reports have grouped primary and secondary hernias together when reviewing or studying ventral hernias, especially for the laparoscopic treatment. However, this can produce falsely favorable results, because these two hernia types are inherently different in various aspects, even, as evidenced by some Authors in those demographic. [7] The primary finality of any classification should be to improve the possibility of comparing different studies and their results. In order to be able to study the possible causative factors of incisional hernias, the characteristics of the patients with incisional hernia should be clarified and distinguished from the all other hernia patients. Chevrel and Rath [8] proposed an attractive and simple classification in 2000. Although apparently easy to use, this

classification has not been always used in the literature. At the 29th Congress of the European Hernia Society (EHS) in Athens in May 2007, the president of the EHS, Andrew Kingsnorth, stressed the importance of a unique classification of ventral and incisional hernias. [9] An EHS definitive classification for primary abdominal wall hernias and a division into subgroups for incisional abdominal wall hernias, concerning the localization of the hernia, was finally formulated. In addition a consensus was reached on the decision to separate primary ventral hernias and incisional ventral hernias. [10]

The symptoms usually reported by patients affected by incisional hernia include pain, discomfort, cosmetic complaints, skin problems, functional disability, and pulmonary dysfunction. However, up to one third of patients are not always aware of having an incisional hernia, especially when older or the hernia is small. About half of these have no symptoms. [11,12] Among various modalities are available for management of incisional hernia, mesh repair by open or laparoscopic method is common. Irrespective of technique used tension free approximation of musculofascial layer and use of prosthetic mesh minimizes recurrence.

The aim of the present study was to assess the risk factors, clinical presentation and management in incisional hernia.

### Materials and Methods

The present study was conducted in the Department of General Surgery, Patna Medical College and Hospital Patna, Bihar, India for nine months and having incisional hernia are included in our study by applying the following inclusion and exclusion criteria. The study was conducted during the period and total number 100 cases were taken for study.

### Inclusion Criteria

- All patients with Incisional Hernia between 8 to 70 years
- Both the sexes

### Exclusion Criteria

- Patients with uncontrolled diabetes mellitus and COPD
- Recurrent incisional hernia
- Strangulated and incarcerated incisional hernia
- Pregnancy with incisional hernia

All the patients were inquired about the duration of hernia, progression and the main associated symptoms like pain, vomiting, cough, dysuria, reducibility of the swelling, association with pregnancy.

Past-history pertaining to previous surgery- its nature, duration, type of surgery and closure was recorded. Patients were also asked about the complications associated with previous surgery like infections. Recording about the scar of the previous surgery, the hernia defect its position, size, shape, cough impulse, reducibility and the overlying skin over the defect were made. Other comorbidities like anaemia, jaundice, hypertension, hypoproteinemia, obesity, benign prostatic hypertrophy were recorded. Chest screening was done to rule out COPD.

Multiparity was recorded for female patients with more than 2 children. If patient was found to have ascites, Ultrasound abdomen was done. Data was collected from a specially designed case recording Proforma (CRF) pertaining to patient's particulars, proper history, clinical examinations, investigations, diagnosis and surgical procedures, infection following surgery, length of stay in the hospital.

Following pre-operative investigations were done and recorded for all the patients Hb%, random blood sugar, urea, serum creatinine, chest X-ray, ECG and ultrasound abdomen (when indicated). Pre surgery work up constituted informed consent, NPO a night before the surgery, inj. cefotaxime 1 gm IV stat immediately before the surgery (as preoperative antibiotic), inj. tetanus toxoid 0.5 cc IM and indwelling urinary catheterization.

### Results

**Table 1: Patient characteristics**

Sex	Number	Percentage
Male	32	32
Female	68	68
<b>Age in years</b>		
10-20	10	10
21-30	20	20
31-40	25	25
41-50	19	19
51-60	18	18
61-70	6	6
71-80	2	2
<b>Clinical presentation</b>		

Swelling	100	100
Pain and swelling	25	25
<b>Risk factors</b>		
Obesity	45	45
Anemia	25	25

The study shows that incisional hernia is more common in females than males. Most of the patients belonged to 21-60 years. The study showed that all the patients (100%) presented with swelling in the abdomen. 25% Patients had associated pain in the swelling. In the present study, 45% had obesity and 25% had anemia.

**Table 2: Position of the swelling in the abdomen and Time of onset of incisional hernia after previous surgery**

Position of swelling	No. of cases	Percentage
Supra umbilical	18	18
Infra umbilical	68	68
RLR (lumbar region)	6	6
RIF (iliac fossa)	8	8
<b>Time of onset</b>		
0 to 1 year	45	45
1-2 year	23	23
2-5 year	20	20
>5 year	12	12

In this study 68 percent of patients presented with infra umbilical swelling, 18 percent presented with supra umbilical swelling, 8 percent with right iliac fossa swelling and 6 percent with right lumbar

swelling. 45 percent of the patients presented with incisional hernia within a year of previous surgery. 23 percent of patients presented between 1 to 2 years.

**Table 3: Elective versus emergency surgery**

Type	No. of cases	Percent
Elective	32	32
Emergency	68	68

32% underwent elective surgery and 68% underwent emergency surgery.

**Table 4: Post-operative complications**

Complications	No. of cases	Percentage
Wound infection	15	15
Seroma	15	15
Skin necrosis/suture line necrosis	0	0
RTI	10	10

In the study 15 patients had surgical site infection and 15 patients had seroma formation. 10 patients had Respiratory tract Infection.

### Discussion

Incisional hernia is a common surgical condition encountered in day to day practice. It is most often seen in obese individuals. Based on national operative statistics, incisional hernias account for 15% to 20% of all abdominal wall hernias. Of all hernias encountered, incisional hernias can be the most frustrating and difficult to treat. Incisional hernias occur as a result of excessive tension, postoperative abdominal distension and inadequate healing of a previous incision, which is often associated with surgical site infection, persistent postoperative cough, infection. Several technical

and patient-related factors have been linked to the occurrence of incisional hernias. There is no conclusive evidence that demonstrates that the type of suture or technique of incisional closure at the primary operation affects hernia formation. [13]

The study shows that incisional hernia is more common in females than males. The incidence is more in females because of laxity of abdominal muscles due to multiple pregnancies. In males the incidence of incisional hernia is relatively less as most of the surgeries are above the umbilicus, and the strength and integrity of abdominal wall is good because of well-developed muscles and fascia. Most of the patients belonged to 21-60 years. The study showed that all the patients (100%) presented with swelling in the abdomen. 25% Patients had

associated pain in the swelling. In this study 68 percent of patients presented with infra umbilical swelling, 18 percent presented with supra umbilical swelling, 8 percent with right iliac fossa swelling and 6 percent with right lumbar swelling. 45 percent of the patients presented with incisional hernia within a year of previous surgery. 23 percent of patients presented between 1 to 2 years. Patients presented with swelling followed by pain and swelling (24%) similar to that in our study. Patients presented with swelling followed by pain and swelling (24%) similar to that in our study. [14] In study by Prasad et al too where 68% presented with swelling and 24 percent presented with both pain and abdominal discomfort. [15]

In the present study, 45% had obesity and 25% had anemia. 46 percent of the patients presented with incisional hernia within a year of previous surgery. 22 percent of patients presented between 1 to 2 years. 32% underwent elective surgery and 68% underwent emergency surgery. The Study done by Pollock in 1989, where only 1.2% of the patients operated on elective basis had incisional hernia while 23.9% of the patients operated on emergency basis had incisional hernia. [16,17] In the study 15 patients had surgical site infection and 15 patients had seroma formation. 10 patients had Respiratory tract Infection. Almost half the patients in the study group were followed for complications, including recurrence. 20 patients were followed up for up to one year duration.

### Conclusion

Incisional is more common in females, especially the multiparous. Incisional hernia is more common in patients who underwent the previous surgery on an emergency basis. Cough impulse was present in all the cases and the swelling reduced on lying supine. Seroma formation and surgical site infection were the common complications in the post-operative period. No recurrence was seen in the follow up of the patients.

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