

Results of Incisional Hernia Repair: A Retrospective Study**Abhinav Kumar¹, Ashutosh Patel², Prashant Kumar³**¹Senior Resident, Department of General Surgery, NSMCH, Bihta, Patna, Bihar, India²Associate Professor, Department of General Surgery, NSMCH, Bihta, Patna, Bihar, India³Assistant professor, Department of General Surgery, NSMCH, Bihta, Patna, Bihar, India

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Abstract:**Background:** Incisional hernia is a common complication following abdominal surgeries. This retrospective study aims to evaluate the outcomes of incisional hernia repair, focusing on the efficacy and safety of hernioplasties performed at Netaji Subhash Medical College, Bihta, Patna, over a period of six months.**Materials and Methods:** This study retrospectively analyzed 100 unselected patients, aged between 50 and 65 years, who underwent incisional hernia repair from November 2023 to April 2024. Data were collected from hospital records, including demographic details, hernia characteristics, surgical techniques, and postoperative outcomes. The primary outcome measures were the recurrence rate, postoperative complications, and patient satisfaction.**Results:** Out of the 100 patients, 60 were male and 40 were female. The mean age of the patients was 57.3 years. The most common surgical technique used was open mesh repair, performed in 85% of the cases, while laparoscopic repair was used in 15% of the cases. The average hospital stay was 4.2 days. Postoperative complications occurred in 15 patients, including wound infections (10%), seroma formation (3%), and mesh rejection (2%). The recurrence rate within the follow-up period was 8%. Patient satisfaction was rated high, with 92% of patients reporting positive outcomes.**Conclusion:** Incisional hernia repair, primarily using open mesh techniques, demonstrated a high success rate and acceptable complication rates in this cohort. The recurrence rate was relatively low, and the majority of patients reported high levels of satisfaction with their outcomes. Continued monitoring and advancements in surgical techniques are recommended to further improve patient outcomes.**Keywords:** Incisional hernia, hernioplasty, meshes repair, retrospective study, postoperative complications, patient satisfaction, recurrence rate.

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Introduction

Incisional hernias are a common postoperative complication that occurs at the site of a previous surgical incision. They represent a significant clinical challenge, affecting approximately 10-15% of patients following abdominal surgeries [1,2]. The incidence of incisional hernia varies based on several factors, including the type of surgery, the patient's comorbid conditions, and the surgical technique used [3].

The management of incisional hernias has evolved over the years, with various techniques and materials being employed to improve outcomes. The introduction of synthetic mesh in hernia repair has significantly reduced recurrence rates compared to primary suture repair [4].

However, the choice between open and laparoscopic repair remains a topic of ongoing debate among surgeons [5]. Open mesh repair is traditionally preferred due to its simplicity and

effectiveness, whereas laparoscopic repair is favoured for its minimally invasive nature and reduced postoperative pain [6]. Despite advancements in surgical techniques, complications such as wound infections, seroma formation, and mesh-related issues continue to pose challenges in incisional hernia repair [7]. Moreover, patient satisfaction and quality of life post-surgery are critical factors that influence the perceived success of hernia repairs [8].

Given the prevalence and impact of incisional hernias, this retrospective study aims to evaluate the outcomes of 100 unselected hernioplasties performed at Netaji Subhash Medical College, Bihta, Patna, over an eight-month period. By analyzing the recurrence rates, postoperative complications, and patient satisfaction, this study seeks to provide insights into the efficacy and safety of current hernia repair practices.

Materials and Methods

Study Design and Setting: This retrospective study was conducted at Netaji Subhash Medical College, Bihta, Patna, analyzing incisional hernia repairs performed between November 2023 and April 2024. The study aimed to assess the outcomes of 100 consecutive, unselected hernioplasties in patients aged 50 to 65 years.

Patient Selection: Inclusion criteria encompassed all patients aged 50 to 65 years who underwent incisional hernia repair during the study period. Exclusion criteria included patients with recurrent hernias, emergency repairs, and those with incomplete medical records.

Data Collection: Data were collected from hospital records, including patient demographics (age, sex, BMI), hernia characteristics (size, location), surgical details (type of repair, mesh type), and postoperative outcomes (complications, recurrence, hospital stay, patient satisfaction).

Surgical Techniques: Two primary surgical techniques were employed: open mesh repair and laparoscopic mesh repair. The choice of technique was based on the surgeon's discretion and the patient's clinical condition.

1. Open Mesh Repair: Involved making an incision over the hernia site, reducing the hernia sac, and placing a synthetic mesh to reinforce the abdominal wall. The mesh was fixed with sutures, and the incision was closed in layers.

2. Laparoscopic Mesh Repair: Performed under general anesthesia, involved inserting a laparoscope and instruments through small abdominal incisions.

The hernia sac was reduced, and a mesh was placed and secured using tacks or sutures.

Outcome Measures: The primary outcome measures were:

- **Recurrence Rate:** Defined as the reappearance of hernia at the repair site within the follow-up period.
- **Postoperative Complications:** Including wound infections, seroma formation, and mesh rejection.
- **Hospital Stay:** Duration of postoperative hospital stay.
- **Patient Satisfaction:** Assessed through a questionnaire covering pain, mobility, and overall satisfaction with the procedure.

Statistical Analysis: Data were analyzed using descriptive statistics. Continuous variables were expressed as mean \pm standard deviation, and categorical variables as percentages. The recurrence rate and complication rates were calculated and compared between the two surgical techniques. Patient satisfaction scores were analyzed to evaluate the overall effectiveness of the hernia repairs.

Results

Patient Demographics and Hernia Characteristics: A total of 100 patients, aged between 50 and 65 years, underwent incisional hernia repair during the study period. The mean age of the patients was 57.3 ± 4.2 years. The majority of patients were male (60%), with females comprising 40% of the cohort. The hernias varied in size and location, with the majority being midline hernias (65%).

Table 1:

Characteristic	Value
Number of Patients	100
Mean Age (years)	57.3 ± 4.2
Male (%)	60
Female (%)	40
Midline Hernias (%)	65
Non-midline Hernias (%)	35

Surgical Techniques and Outcomes: Open mesh repair was performed in 85% of the cases, while laparoscopic repair accounted for 15%. The mean duration of surgery for open repair was 75 ± 15 minutes, and for laparoscopic repair, it was 105 ± 20 minutes.

Table 2:

Surgical Technique	Number of Patients (%)	Mean Duration of Surgery (minutes)
Open Mesh Repair	85	75 ± 15
Laparoscopic Mesh Repair	15	105 ± 20

Postoperative Complications: Postoperative complications were observed in 15% of the patients. The most common complication was wound infection, occurring in 10 patients (10%), followed by seroma formation in 3 patients (3%) and mesh rejection in 2 patients (2%).

Table 3:

Complication	Number of Patients (%)
Wound Infection	10 (10)
Seroma Formation	3 (3)
Mesh Rejection	2 (2)

Recurrence Rate and Hospital Stay: The recurrence rate within the follow-up period was 8%, with 8 patients experiencing a recurrence of their hernia. The mean hospital stay was 4.2 ± 1.1 days, with no significant difference between the open and laparoscopic groups.

Table 4:

Outcome	Value
Recurrence Rate (%)	8
Mean Hospital Stay (days)	4.2 ± 1.1

Patient Satisfaction: Patient satisfaction was assessed using a postoperative questionnaire. Overall, 92% of patients reported high levels of satisfaction with their surgical outcomes, rating their experience as either "good" or "excellent."

Table 5:

Satisfaction Level	Number of Patients (%)
Excellent	60 (60)
Good	32 (32)
Fair	6 (6)
Poor	2 (2)

In summary, the study demonstrated that incisional hernia repair using mesh, particularly through open techniques, is effective with a low recurrence rate and high patient satisfaction. However, postoperative complications remain a concern and warrant ongoing monitoring and improvement of surgical practices.

Discussion

The findings of this retrospective study provide valuable insights into the outcomes of incisional hernia repair at a single institution. The overall success rate of hernia repairs, as evidenced by the low recurrence rate and high patient satisfaction, aligns with existing literature on the effectiveness of mesh repair in reducing hernia recurrence [1,2].

Recurrence Rate

The recurrence rate observed in our study was 8%, which is consistent with previously reported rates for mesh repairs. Burger et al. demonstrated that mesh repair significantly reduces recurrence compared to suture repair, with long-term follow-up showing recurrence rates as low as 10% [3]. The slightly lower recurrence rate in our study may be attributed to meticulous surgical techniques and postoperative care.

Postoperative Complications

Postoperative complications occurred in 15% of the patients, with wound infection being the most common complication. This is in line with other studies that report infection rates ranging from 10%

to 15% in incisional hernia repairs [4,5]. Seroma formation and mesh rejection were less common, affecting 3% and 2% of patients, respectively. The rates of these complications are comparable to those found in the literature, highlighting the inherent risks associated with the use of synthetic mesh [6].

Surgical Techniques

The majority of the repairs in our study were performed using the open mesh technique, which remains the gold standard for many surgeons due to its simplicity and effectiveness. The open approach was associated with a shorter operative time compared to laparoscopic repair (75 ± 15 minutes vs. 105 ± 20 minutes). Laparoscopic repair, though less frequently performed, offers advantages such as reduced postoperative pain and faster recovery, as supported by previous studies [7,8].

Patient Satisfaction

High levels of patient satisfaction (92%) were reported, with most patients rating their experience as "good" or "excellent." This is an important outcome measure, as patient satisfaction correlates with quality of life and overall perception of surgical success. Kingsnorth and LeBlanc emphasized the importance of patient-reported outcomes in evaluating the success of hernia repairs [9].

Limitations: This study has several limitations. Being retrospective in nature, it relies on the accuracy and completeness of medical records.

Additionally, the follow-up period may not be sufficient to capture all recurrences, which could potentially occur beyond the study duration. Future studies with longer follow-up and a prospective design would provide more robust data.

Conclusion

Incisional hernia repair using mesh, particularly through the open approach, demonstrates high success rates with acceptable complication rates.

The recurrence rate of 8% and high patient satisfaction underscore the effectiveness of this surgical intervention. Continued advancements in surgical techniques and postoperative care are essential to further improve patient outcomes and minimize complications.

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