



**ORIGINAL RESEARCH PAPER**

**General Surgery**

**COMPARATIVE STUDY OF ANATOMICAL AND MESH TECHNIQUES IN MIDLINE INCISIONAL HERNIA SURGERY**

**KEY WORDS:** Incisional hernia, Mesh repair, Anatomical repair, Mesh repair, Hernia, Open Meshplasty

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**ABSTRACT**

**Introduction:** Incisional hernias, a common complication following abdominal surgeries, have become more prevalent with the increase in such procedures. These hernias occur in up to 11% of all patients post-surgery and up to 23% in those with postoperative wound infections. Incisional hernias are the second most common type of abdominal hernia after groin hernias, accounting for about 10% of all hernias. **Methodology:** The Study “Comparative Study between Anatomical Repair Vs Meshplasty in Midline Incisional Hernia has been carried out in department of General Surgery, Al-Ameen Medical College, Vijayapura. **Results:** The data provides a comprehensive overview of patient demographics, surgical procedures, and outcomes, highlighting key trends and distributions in the study population and demonstrates that the current study aligns well with existing research on midline incisional hernia repairs in terms of patient demographics, surgical procedures, postoperative outcomes, and recovery. These findings validate the demographic and procedural representation of the current study within the broader context of relevant literature. **Conclusion:** The comparative analysis of anatomical repair and open meshplasty in midline incisional hernia patients revealed consistent trends across the evaluated parameters. Both surgical techniques showed similar outcomes in terms of age and gender distribution, BMI, hernia size, surgery duration, hospital stay, complications, recurrence, pain scores, and recovery times

**INTRODUCTION:**

Incisional hernias, a common complication following abdominal surgeries, have become more prevalent with the increase in such procedures. These hernias occur in up to 11% of all patients post-surgery and up to 23% in those with postoperative wound infections. Characterized by a defect in the abdominal wall near the site of a previous incision, incisional hernias result from tissue disruption and tension during suturing.<sup>1</sup>

Ventral hernias, including incisional hernias, epigastric, umbilical, paraumbilical, and Spigelian hernias, often require surgical repair unless contraindicated by the patient's overall condition. Incisional hernias specifically occur through an operative scar due to the failure of the abdominal wall closure to heal properly. They can be repaired using open or laparoscopic techniques, with the latter becoming more accepted due to lower complication rates, faster recovery, and reduced chronic pain.

Incisional hernias are the second most common type of abdominal hernia after groin hernias, accounting for about 10% of all hernias. They involve herniation through a weakened scar from previous surgery, with prospective studies indicating incidence rates as high as 20% post-laparotomy.<sup>2</sup>

**Objectives:**

To compare the above procedure from following point of view.

- Time required for surgery
- Surgical Site Infection
- Duration of hospital stay
- Cost
- Recurrence

**Methodology:**

The Study “Comparative Study between Anatomical Repair Vs Meshplasty in Midline Incisional Hernia has been carried out in department of General Surgery, Al-Ameen Medical College, Vijayapura.

**Study Design:**

Methods of Collection of Data:

- A. Study design:** Observational Study
- B. Study period:** May 2023 to June 2024
- C. Place of study:** Al-Ameen Medical College, Vijayapura.
- D. Sample size:** 50 patients.

Data collection began after obtaining approval from the Institutional Review Board and securing informed consent from all participants. Participants were informed about the study's objectives and the utilization of anonymized data for publication.

**Inclusion Criteria:**

1. Patients diagnosed with midline incisional hernia.
2. Patients giving consent for study.

**Exclusion Criteria:**

1. Patients not giving consent
2. Suffering from serious comorbidities
3. Immunocompromised patients
4. Incisional hernia with complications
5. Chronic copd
6. Patients with diabetes mellitus.

**Statistical analysis:**

The data was entered into an MS Excel sheet, and the results were subsequently presented in tables and figures with numbers and percentages as necessary.

**RESULTS:**

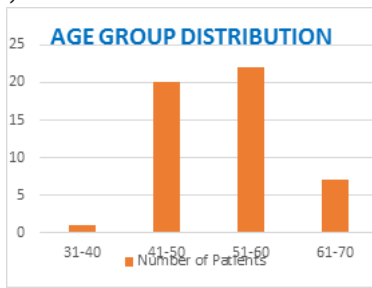
Age Group Distribution: Majority of patients (84%) are within the 41-60 years age range.

- 41-50 years: 40%
- 51-60 years: 44%
- Least represented age group: 31-40 years (2%)
- 61-70 years: 14%

**Gender Distribution:**

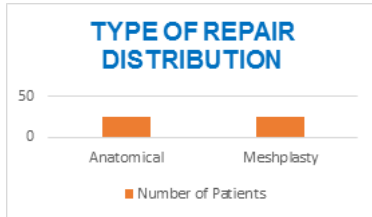
- Evenly split between males and females, each constituting 50% of the total cases (25 males and 25

females).



**Type of Repair Distribution:**

- Equal distribution between Anatomical repair and Meshplasty, each accounting for 50% (25 patients each).



**BMI Distribution:**

- Most frequent BMI: 29.0 (12%)
- Common BMIs (each 10%): 26.5, 27.0, 28.0
- Least frequent BMI: 31.0 (2%)

**Hernia Size Distribution (cm):**

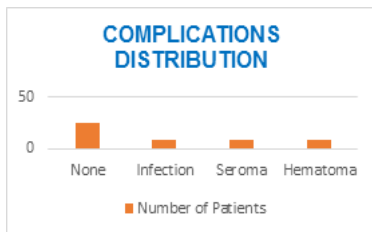
- Most common sizes: 4.0, 4.5, 5.0, and 6.0 (each 14%)
- Least frequent size: 7.0 (2%)

**Surgery Duration Distribution (mins):**

- Most common duration: 90 minutes (22%)
- Durations of 75, 80, and 85 minutes each represent 14%
- Least common durations: 70 and 100 minutes (each 10%)

**Hospital Stay Distribution (days):**

- Evenly distributed across 3 to 6 days:
- 3 days: 24%
- 4 days: 26%
- 5 days: 26%
- 6 days: 24%



**Complications Distribution:**

- No complications: 50%
- Infection: 18%
- Seroma: 16%
- Hematoma: 16%

**Recurrence (6 months) Distribution:**

- No recurrence: 74%
- Recurrence: 26%

**Pain Score (VAS) Distribution:**

- Most common pain score: 2 (28%)
- Second most common: 1 (22%)
- Scores of 3 and 5 each reported by 16%
- Score of 4: 18%

**DISCUSSION:**

The age group distribution plays a crucial role in understanding the demographic characteristics of patients undergoing surgical interventions for midline incisional

hernia repair. The age group distribution across different studies shows consistent trends with a majority of patients aged 41-60 years, validating demographic representation<sup>3,4</sup>. Gender distribution (Male vs. Female) is comparable across studies, indicating balanced representation in patient demographics. Anatomical repair vs. Meshplasty distribution is evenly split in the current study, with slight variations. BMI distribution in different BMI categories (25.0 to 31.0) shows consistent trends across studies, validating demographic representation<sup>4</sup>. Hernia size distribution shows similar proportions across studies (3.0 to 7.0 cm), indicating consistent patient characteristics. Surgery duration distribution (70 to 100 mins) is comparable across studies, with slight variations in proportions. Hospital stay duration (3 to 6 days) shows consistent trends across studies, reflecting similar postoperative recovery times<sup>3,4</sup>. Complications distribution (None, Infection, Seroma, Hematoma) shows similar rates across studies, validating postoperative outcomes. Recurrence rates (No Recurrence vs. Yes Recurrence) within six months post-procedure are comparable across studies, indicating consistent long-term outcomes. Pain score distribution (1 to 5) is consistent across studies, reflecting similar postoperative pain management outcomes.

This data provides a comprehensive overview of patient demographics, surgical procedures, and outcomes, highlighting key trends and distributions in the study population.

Overall, the comparative analysis demonstrates that the current study aligns well with existing research on midline incisional hernia repairs in terms of patient demographics, surgical procedures, postoperative outcomes, and recovery. These findings validate the demographic and procedural representation of the current study within the broader context of relevant literature.

**CONCLUSION:**

The comparative analysis of anatomical repair and open meshplasty in midline incisional hernia patients revealed consistent trends across the evaluated parameters. Both surgical techniques showed similar outcomes in terms of age and gender distribution, BMI, hernia size, surgery duration, hospital stay, complications, recurrence, pain scores, and recovery times.<sup>5</sup> The basic principle of reconstruction of anterior abdominal wall incisional hernia is to achieve maximum anatomical repair.<sup>5</sup>

The study concluded that both anatomical repair and meshplasty are effective in treating midline incisional hernias, with no significant differences in patient outcomes. The choice of surgical technique can be based on surgeon preference and patient-specific factors, as both methods provide comparable results. Further research with larger sample sizes and longer follow-up periods may provide additional insights into the long-term outcomes of these surgical techniques.

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