

A Clinical Study on Wound Dehiscence in Patients Undergoing Exploratory Laparotomy

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Abstract

Background: Wound dehiscence is a significant postoperative complication leading to increased morbidity and mortality following exploratory laparotomy.

Objective: To determine the incidence and risk factors contributing to wound dehiscence in patients undergoing exploratory laparotomy.

Materials and Methods: This prospective clinical study was conducted on 40 patients at Narayana Medical College, Nellore, between June 2023 and June 2024. Clinical data, including anemia, hypoalbuminemia, obesity, and infection, were analyzed.

Results: Wound dehiscence occurred in 12.5% of patients, more common in emergency laparotomies (13.6%) than elective cases (11.1%). Anemia, hypoalbuminemia, and obesity were statistically significant factors.

Conclusion: Preoperative optimization and meticulous surgical techniques can minimize wound dehiscence incidence.

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Introduction

Abdominal wound dehiscence, commonly known as burst abdomen, is a serious postoperative complication occurring after exploratory laparotomy.

It typically manifests within the first 10 postoperative days and is associated with increased morbidity, longer hospital stays, and higher mortality rates.

The present study aims to assess the incidence and identify major risk factors contributing to wound dehiscence.

Materials and Methods

Study Design and Setting: A prospective observational study conducted at Narayana Medical College, Nellore, from June 2023 to June 2024.

Study Population: Forty patients undergoing exploratory laparotomy (both elective and emergency cases).

Inclusion Criteria: Patients undergoing elective or emergency exploratory laparotomy who provided informed consent.

Exclusion Criteria: Patients with incomplete clinical data or undergoing laparotomy for trauma or non-abdominal causes.

Outcome Measures: Incidence of wound dehiscence, risk factor correlation, and postoperative outcomes.

Statistical Analysis: Chi-square test and t-test were used with significance set at $p < 0.05$.

Results

Table 1: Dehiscence was higher in emergency laparotomies (13.6%).

Surgical Type	Total Patients	Dehiscence Cases	Percentage (%)
Elective	18	2	11.1
Emergency	22	3	13.6

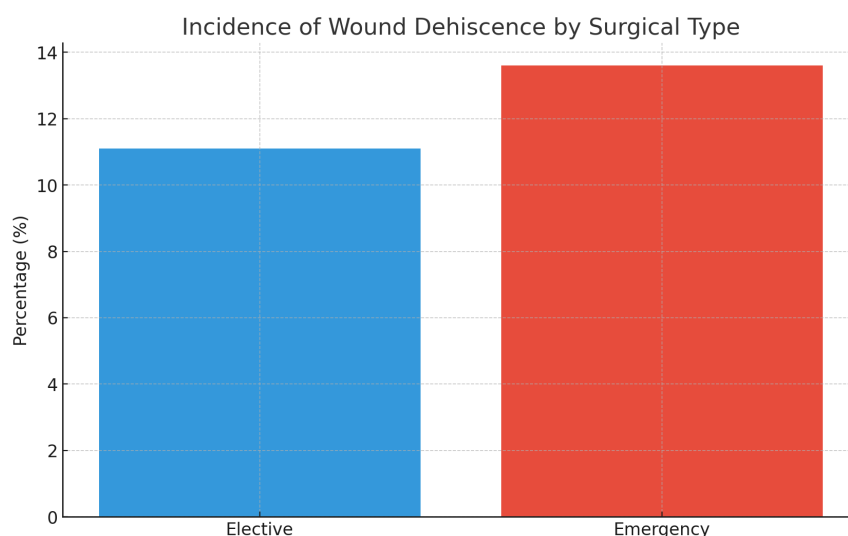


Figure 1: Incidence of wound dehiscence in elective vs emergency laparotomies.

Table 2: All major risk factors were statistically significant contributors to wound dehiscence.

Risk Factor	Patients Affected	Dehiscence Cases	p-Value
Anemia	17	3	<0.01
Hypoalbuminemia	10	2	<0.01
Obesity	4	3	<0.001
Wound Infection	6	2	<0.01

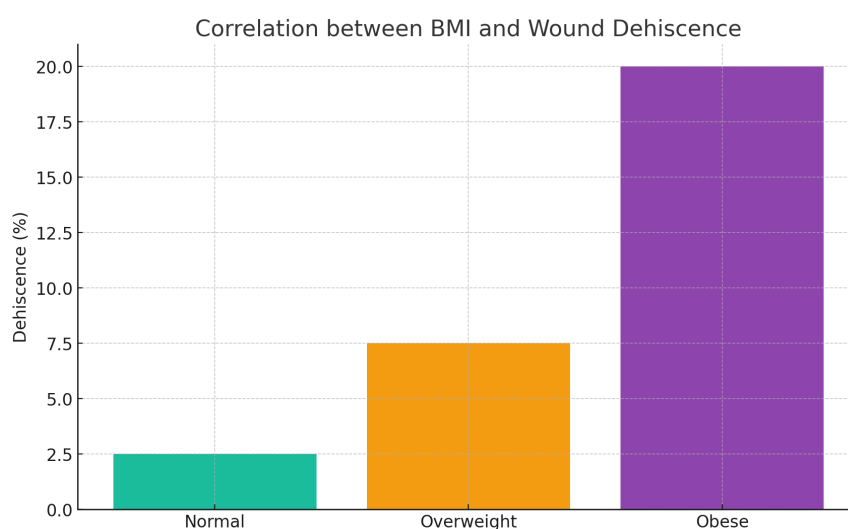


Figure 2: Obesity significantly increased the incidence of wound dehiscence.

Discussion

The overall incidence of wound dehiscence in this study was 12.5%, aligning with international literature. The higher frequency in emergency laparotomies reflects poor preoperative optimization and infection control. Anemia and hypoalbuminemia impair tissue healing and collagen deposition. Obesity and infection contribute through increased wound tension and contamination. These findings support previous studies emphasizing the need for comprehensive perioperative management to reduce risk.

Conclusion

Wound dehiscence remains a multifactorial surgical complication. Preventive measures, including correction of anemia, improvement of nutritional status, infection control, and meticulous closure techniques, can substantially reduce incidence and improve postoperative outcomes.

References

1. Kenig J, Richter P, Zurawska S, et al. Risk factors for wound dehiscence after laparotomy. *Pol Przegl Chir.* 2012;84(11):565–73.
2. Van Ramshorst GH, Nieuwenhuizen J, Hop WC, et al. Abdominal wound dehiscence in

- adults: risk model development. *World J Surg.* 2010;34(1):20–27.
3. Waqar SH, Malik ZI, Razzaq A, et al. Frequency and risk factors for wound dehiscence in midline laparotomies. *J Ayub Med Coll Abbottabad.* 2005;17(4):70–73.
 4. Bhangu A, Fitzgerald JE, Singh P, et al. Multicentre study of surgical outcomes following wound dehiscence. *Br J Surg.* 2013;100(11):1503–1510.