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What Drives Fascial Dehiscence? Insights from Laparotomy Cases

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Abstract:
Background: Fascial dehiscence is a severe postoperative complication after midline laparotomy. Methods: A retrospective observational cohort study reviewed 50 patients undergoing midline laparotomy from April 2024 to March 2025. Results: Diabetes, hypoalbuminaemia, prolonged surgery, and blood loss greater than 500 mL were significantly associated with fascial dehiscence in univariable analysis. In multivariable analysis, prolonged surgery (OR 5.2), hypoalbuminaemia (OR 4.8), and diabetes (OR 3.7) were independent predictors, whereas blood loss greater than 500 mL was no longer significant after adjustment. Conclusion: Optimisation of nutritional and glycaemic status and minimisation of operative duration may reduce risk.
Keywords: Fascial dehiscence; Midline laparotomy; Diabetes mellitus; Hypoalbuminaemia; Prolonged surgery; Postoperative complications; Risk factors; Abdominal wound closure.

INTRODUCTION

Fascial dehiscence is a serious postoperative complication of midline laparotomy, typically occurring within 10 days, and is associated with morbidity, prolonged hospitalisation, and mortality [1,3]. It results from a combination of patient-related and surgical factors [1,2]. Early risk stratification and optimisation of modifiable variables are important preventive measures, particularly in resource-limited settings.

Objective

To evaluate the incidence of fascial dehiscence among patients with established risk factors and to determine the statistical significance of those factors using univariable and multivariable analyses.

MATERIALS AND METHODS

This retrospective observational cohort study was conducted in the Department of General Surgery at Saveetha Medical College and Hospital, Chennai, India. Fifty patients who underwent midline laparotomy between April 2024 and March 2025 were included. Electronic medical records provided demographic characteristics, comorbidities, lifestyle factors, and operative details. Univariable chi-square analysis assessed associations with fascial dehiscence, and binary logistic regression was used to identify independent predictors. A two-sided p value < 0.05 was considered statistically significant.

RESULTS

In univariable analysis, diabetes, hypoalbuminaemia, prolonged surgery, and blood loss greater than 500 mL were significantly associated with fascial dehiscence (Table 1). In multivariable logistic regression, prolonged surgery, hypoalbuminaemia, and diabetes remained independent predictors, whereas blood loss greater than 500 mL was no longer significant after adjustment (Table 2). Confidence intervals and event counts were not reported on the source poster and should be added to the final manuscript.

Table 1. Univariable analysis of risk factors.

Univariable factor	Reported p value	Interpretation

Diabetes	0.012	Statistically significant
Hypoalbuminaemia	0.003	Statistically significant
Prolonged surgery (>3 h)	0.005	Statistically significant
Blood loss (>500 mL)	0.045	Statistically significant
Smoking, anaemia, emergency surgery, contaminated field	Not significant	Not statistically significant

DISCUSSION

Hypoalbuminaemia, diabetes, and prolonged surgery were independent, modifiable predictors of fascial dehiscence [1,2]. These findings support preoperative nutritional optimisation and glycaemic control, together with strategies to avoid unnecessarily prolonged procedures [4]. The non-significant associations for emergency surgery and contaminated fields should be interpreted cautiously, because the sample was small and adjusted estimates were not fully reported [3,5].

CONCLUSION

Hypoalbuminaemia, diabetes, and prolonged surgery were the principal independent predictors in this cohort. Targeted preoperative optimisation and operative efficiency may help reduce fascial dehiscence after midline laparotomy.

REFERENCES

1. Makela JT, Kiviniemi H, Juvonen T, Laitinen S. Factors influencing wound dehiscence after midline laparotomy. Am J Surg. 1995;170(4):387–390.
2. Verma S, Patil SM, Bhardwaj A. Study of risk factors in post-laparotomy wound dehiscence. Int Surg J. 2018;5(7):2513–2517.
3. Vardhini KV, Kishan D. Incidence and risk factors influencing morbidity and mortality in cases of burst abdomen after emergency and elective midline laparotomies. Int Surg J. 2018;5(11):3471–3477.
4. Gupta R, Shrivastava SK, Malpani P, Songra MC. A prospective study of assessment of prognostic factors in early and late wound dehiscence in midline vertical incision. Int Surg J. 2020;7(8):2578–2585.
5. Hegazy TO, Soliman SS. Abdominal wall dehiscence in emergency midline laparotomy: incidence and risk factors. Egypt J Surg. 2020;39(2):489–497.