

ADHESIONS AS AN INDEPENDENT PREDICTOR OF POSTOPERATIVE ILEUS FOLLOWING ROBOTIC COLORECTAL CANCER SURGERY WITHIN AN ERAS PROTOCOL

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Introduction

Postoperative ileus (POI) is a common complication after colorectal surgery, even with a robotic approach. Identifying perioperative risk factors is critical for improving patient outcomes. This study investigates clinical and intraoperative predictors of POI in patients undergoing robotic colorectal surgery.

Methods

- A retrospective study
- Colorectal cancer patients who underwent robotic surgery
- Between March 2020 and March 2025
- All cases followed an enhanced recovery after surgery (ERAS) protocol
- Patients were stratified based on the development of POI. POI: Absence of bowel function recovery after postoperative day 4
- Operative time, location of the operation, presence of fibrosis from prior radiotherapy, adhesions from prior surgery, length of hospital stay, postoperative return of bowel movements, estimated blood loss (EBL), presence of postoperative complications within 30 days, and 30-day readmissions related to surgery were reviewed
- Statistical analyses were performed using the Mann-Whitney U test, Fisher's exact test, and multivariate logistic regression analysis

Table 1: Univariate Analysis of Factors Associated with Postoperative Ileus

	Non-POI Patients (n = 173)	POI Patients (n = 30)	Odds Ratio (95% CI)	p value
Fibrosis	22 (12.7%)	8 (26.7%)	2.93 (1–8.1)	0.036*
Adhesions	16 (9.3%)	14 (46.7%)	5.37 (2.14–13.53)	<0.001*
Surgical Location	Colon: 50 (28.9%) Rectum: 123 (71.1%)	Colon: 4 (13.3%) Rectum: 26 (86.7%)	2.63 (0.85–10.91)	0.115
Gender	Male: 102 (59.0%) Female: 71 (41.0%)	Male: 23 (76.7%) Female: 7 (23.3%)	2.28 (0.89–6.64)	0.071
Age (mean ± SD)	58.3 ± 12.4	64.5 ± 14.1	–	0.014*
BMI (mean ± SD)	29.7 ± 7.32	30.3 ± 7.25	–	0.742
EBL (mL) (median)	50 (0–1300)	75 (0–2000)	–	0.025*
Length of case (hours) (median)	5.0 (1.4–12.0)	6.75 (3.5–13.5)	–	0.001*

POI: Postoperative Ileus; OR: Odds Ratio; CI: Confidence Interval; SD: Standard Deviation

Table 2 : Multivariate Logistic Regression Analysis for Predictors of Postoperative Ileus

	Odds Ratio (95% CI)	p value
Age	1.02 (0.99 – 1.06)	0.208
Gender (Male)	2.43 (0.92 – 7.24)	0.087
BMI	0.95 (0.88 – 1.02)	0.153
Length of case (hour)	1.39 (1.09 – 1.82)	0.011*
EBL (per 100 mL)	1.05 (0.88 – 1.25)	0.537
Fibrosis	1.16 (0.35 – 3.52)	0.798
Adhesions	6.25 (2.27 – 18.21)	0.0005*
Surgical Location (Rectum)	1.53 (0.47 – 6.11)	0.505

Results

- 203 patients were included 14.8% (n = 30) developed POI.
- **Univariate analysis**
POI patients were
 - Significantly older (mean 64.5 vs. 58.3 years; p = 0.014),
 - Had higher intraoperative blood loss (median 75 mL vs. 50 mL; p = 0.025)
 - Had longer operative times (median 6.75 hours vs. 5.0 hours; p = 0.001)

The incidence of POI was significantly higher in patients with fibrosis (26.7% vs. 12.7%; OR = 2.93, 95% CI: 1–8.1; p = 0.036) and adhesions (46.7% vs. 9.3%; OR = 5.37, 95% CI: 2.14–13.53; p < 0.001) (Table 1)

- **Multivariate logistic regression analysis**
 - Longer operative time (OR = 1.39, 95% CI: 1.09–1.82; p = 0.011)
 - Adhesions from prior surgery (OR = 6.25, 95% CI: 2.27–18.21; p = 0.0005) were independently associated with higher odds of developing POI (Table 2)

Conclusion

Colorectal cancer patients with adhesions from prior surgery have a higher incidence of POI. This information is important for postoperative planning and expectations, as well as providing an opportunity for potential targeted prophylactic interventions for ileus within ERAS protocols.

