Infectious complications following enterocutaneous fistula repair: a retrospective propensity score matched study

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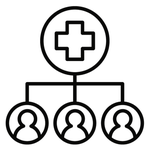
Contact information

Background

Traditional management strategies of enterocutaneous fistulas (ECF) often result in prolonged periods of parenteral nutrition, electrolyte disturbances, and skin irritation because of high fistula output. These measures can dramatically impact the intestinal mucosa, resulting in impaired function. Impaired intestinal mucosal function has been shown to affect clinical outcomes, specifically increased infectious complications. Based on this theory, we hypothesized that patients undergoing small bowel resection (SBR) for ECF would have a higher rate of infectious complications compared to those undergoing SBR for non-ECF indications.

Methods

Participant Selection



All patients undergoing small bowel resection in the 2006-2018 ACS NSQIP database

Matching



ECF patients propensity score matched 1:1 with non-ECF patients

Analysis



Logistic regression performed to compare outcomes of the two matched groups

Results

6.5 million *procedures in ACS-NSQIP*

Patients undergoing small bowel resection

Exclusions: metastatic malignancy or fistulas of anus, vagina, or bladder

45,727 *patients underwent SBR*

Evaluate cohort for those with an enterocutaneous fistula

3043 *with an ECF*
42,684 *without ECF*

Propensity score matching on 1:1 basis

Matched for demographics, comorbidities, pre-operative nutritional status, liver dysfunction, operative time (surrogate for complexity)

903 *with an ECF*
903 *without an ECF*

	ECF Cohort *(n = 903)*	Non-ECF Cohort *(n = 903)*	p-value
Mortality	10 (1.1%)	33 (3.7%)	p < 0.001
Length of stay > 1 week	610 (67.5%)	509 (56.4%)	p < 0.001
Any surgical complication	253 (28.1%)	188 (20.8%)	p < 0.001
Deep surgical site infection	47 (5.2%)	21 (2.3%)	p = 0.001
Wound dehiscence	48 (5.3%)	15 (1.7%)	p < 0.001
Sepsis	88 (9.7%)	63 (7.0%)	p = 0.034
Readmission*	133 (14.7%)	88 (9.7%)	p = 0.013

*Leading causes for readmission: wound infection, persistent fistula, obstruction, dehydration, and sepsis/septic shock.

Conclusion

Even when matching for traditional pre-operative predictors of surgical complications, patients with ECFs appear to be more susceptible to post-operative infectious complications after SBR than those without ECF. These data may support the notion of an underlying mucosal disorder that warrants further investigation.