

The Impact of Stapling Technique and Surgeon Specialism on Anastomotic Failure After Right-Sided Colorectal Resection: An International Multicentre, Prospective Audit

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Abstract

Aim: There is little evidence to support choice of technique and configuration for stapled anastomoses after right hemicolectomy and ileocaecal resection. This study aimed to determine the relationship between stapling technique and anastomotic failure.

Method: Any unit performing gastrointestinal surgery was invited to contribute data on consecutive adult patients undergoing right hemicolectomy or ileocolic resection to this prospective, observational, international, multicentre study. Patients undergoing stapled, side-to-side ileocolic anastomoses were identified and multilevel, multivariable logistic regression analyses were performed to explore factors associated with anastomotic leak.

Results: One thousand three hundred and forty-seven patients were included from 200 centres in 32 countries. The overall anastomotic leak rate was 8.3%. Upon multivariate analysis there was no difference in leak rate with use of a cutting stapler for apical closure compared with a noncutting stapler (8.4% vs 8.0%, OR 0.91, 95% CI 0.54-1.53, $P = 0.72$). Oversewing of the apical staple line, whether in the cutting group (7.9% vs 9.7%, OR 0.87, 95% CI 0.52-1.46, $P = 0.60$) or noncutting group (8.9% vs 5.7%, OR 1.40, 95% CI 0.46-4.23, $P = 0.55$) also conferred no benefit in terms of reducing leak rates. Surgeons reporting to be general surgeons had a significantly higher leak rate than those reporting to be colorectal surgeons (12.1% vs 7.3%, OR 1.65, 95% CI 1.04-2.64, $P = 0.04$).

Conclusion: This study did not identify any difference in anastomotic leak rates according to the type of stapling device used to close the apical aspect. In addition, oversewing of the anastomotic staple lines appears to confer no benefit in terms of reducing leak rates. Although general surgeons operated on patients with more high-risk characteristics than colorectal surgeons, a higher leak rate for general surgeons which remained after risk adjustment needs further exploration.