

The Relationship Between Method of Anastomosis and Anastomotic Failure After Right Hemicolectomy and Ileo-Caecal Resection: An International Snapshot Audit

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Abstract

Background: Anastomosis technique following right sided colonic resection is widely variable and may affect patient outcomes. This study aimed to assess the association between leak and anastomosis technique (stapled versus handsewn) **METHODS:** This was a prospective, multicentre, international audit including patients undergoing elective or emergency right hemicolectomy or ileo-caecal resection operations over a two-month period in early 2015. The primary outcome measure was the presence of anastomotic leak within 30 days of surgery, using a pre-specified definition. Mixed effects logistic regression models were used to assess the association between leak and anastomosis method, adjusting for patient, disease and operative cofactors, with centre included as a random effect variable.

Results: This study included 3208 patients, of whom 78.4% (n=2515) underwent surgery for malignancy and 11.7% (n=375) for Crohn's disease. An anastomosis was performed in 94.8% (n=3041) of patients, which was handsewn in 38.9% (n=1183) and stapled in 61.1% (n=1858) cases. Patients undergoing handsewn anastomosis were more likely to be emergency admissions (20.5% handsewn versus 12.9% stapled) and to undergo open surgery (54.7% versus 36.6%). The overall anastomotic leak rate was 8.1% (245/3041), which was similar following handsewn (7.4%) and stapled (8.5%) techniques (p=0.3). After adjustment for cofactors, the odds of a leak were higher for stapled anastomosis (adjusted odds ratio 1.43, 95% confidence interval 1.04-1.95, p=0.03).

Discussion: Despite being used in lower risk patients, stapled anastomosis was associated with an increased anastomotic leak rate in this observational study. Further research is needed to define patient groups in whom a stapled anastomosis is safe. This article is protected by copyright. All rights reserved.