Anastomotic leaks are potentially severe complications in colorectal surgery. Intraoperative leak tests vary greatly. The use of a circular stapler to create the anastomosis and cost-related interventions was 22.2 ± 11.8 minutes. A post-operative leak occurred in about 11% patients.

Conclusion: Most intraoperative leaks are managed by oversewing the anastomotic staple line or by applying a surgical sealant, which can be time, labor, and cost-intensive. Standardizing creation of the anastomosis may help reduce the incidence of intraoperative leaks and potentially significant downstream burden.

ABSTRACT

Background: Anastomotic leaks occurring in colorectal resection result in a significant clinical and economic burden. Intraoperative approaches to managing positive leak tests vary greatly. This study aimed to understand the interventions following positive intraoperative leak tests in colorectal resection with the creation of a circular stapler.

Methods: In this global retrospective cross-sectional study, data were collected from electronic medical records (EMR) of patients with a positive leak test during a colon resection. Surgeon information, patient demographics, comorbidities, surgical techniques, intraoperative interventions and post-operative outcomes were collected. Data on a minimum of 50 EMR were collected in each of the eight countries included in this study (China, France, Germany, Italy, Japan, South Korea, United Kingdom, and United States). The results from the United States are reported here.

Results: Data from 54 patients with cancer (colon:47, rectal:7) were reviewed. 24 patients underwent laparoscopic left hemicolectomy, 8 laparoscopic sigmoidectomy, 8 open left hemicolectomy, 7 open sigmoidectomy and 7 anterior rectal resection. Intraoperative leak testing was performed using the air leak test in 41 patients, methylene blue dye test in 12 patients and saline insufflation test in 1 patient. Following a positive leak test, 48 patients underwent oversewing of the staple line (median 4 suture strands used), sealant was applied in 5 patients (median 2 sealant tubes used) and a new anastomosis was created in 3 patients (all with circular stapler). The average time required for leak-related interventions was 22.2 ± 11.8 minutes. A post-operative leak occurred in about 11% patients.

Conclusion: Most intraoperative leaks are managed by oversewing the anastomotic staple line or by applying a surgical sealant, which can be time, labor, and cost-intensive. Standardizing creation of the anastomosis may help reduce the incidence of intraoperative leaks and potentially significant downstream burden.

INTRODUCTION

- Anastomotic leaks are potentially severe complications in colorectal resection procedures.
- During colorectal resection procedures, e.g. in cases of colon cancer or rectal cancer, a portion of the colon is removed and the remaining sections of the colon are connected by an anastomosis.
- A circular stapler can be used to create the anastomosis and is crucial that this anastomosis does not leak.
- Intra-operative anastomotic leaks can be detected by insufflation of air (air leak test) and by instillation of methylene blue-stained saline (dry test).
- This study describes the intra-operative interventions following positive intra-operative leak test.

METHODS

- The present study was a retrospective, multi-center, cross-sectional study under the terms of Good Epidemiological Practice (GEP), describing the treatment and overall management of patients with a positive intra-operative anastomotic leak test during colorectal resection procedures performed involving a circular stapler.
- The period of interest started with the colorectal surgical intervention, to understand the range and prevalence of the cascade of interventions following a positive intra-operative anastomotic leak test.
- The study was performed in eight countries (China, France, Germany, Italy, Japan, South Korea, United Kingdom (UK), and United States (USA)).
- Inclusion criteria: Patients ≥ 18 years of age. Patients undergoing one of the following colon resection procedures:
  - Laparoscopic left hemicolectomy
  - Laparoscopic sigmoidectomy
  - Open and other left hemicolectomy
  - Open/Other sigmoidectomy
  - Anterior rectum resection (not further specified)
  - Use of a circular stapler to create the anastomosis
  - Incidence of a positive anastomotic leak test.

RESULTS

- Between 52 and 64 patients were included per country.
- Data presented here is limited to the United States, in which 11 surgeons documented data and outcomes for a total of 54 patients.
- Surgical Specialty is split between Colorectal/GI Surgeon (64%) and General Surgeon (36%).
- The patients’ mean age was 63.69 years, the majority of patients were male and white.
- The overall mean BMI was 27.94 kg/m².
- The methods used to resolve the intra-operative leak were as follows: 48 (88.88%) oversewed the staple line, 5 (9.25%) used sealant, 3 (5.55%) created a new anastomosis.

CONCLUSIONS

- Intra-operative leaks are resolved through the use of suture, sealants, creating a new anastomosis and ileostomy/colostomy which increase the hospitals expenses and time resources.

REFERENCES


CONFLICT OF INTEREST DISCLOSURE

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