

Study Summary

Outcomes associated with the use of a new powered circular stapler for left-sided colorectal reconstructions: a propensity score matching-adjusted indirect comparison with manual circular staplers

Sylla P, Sagar P, Johnston S S. Surg Endosc. 2021;May 24:1–13.

Conclusion

The ECHELON CIRCULAR™ Powered Stapler has a favourable safety profile with lower rates of surgical complications, such as anastomotic leak, and a lower rate of 30-day readmission as compared to conventional manual circular staplers

Study Aim

To retrospectively compare the clinical outcomes between patients who underwent left-sided colorectal resections using conventional manual circular staplers (MCS) with those who underwent the procedure using ECHELON CIRCULAR™ Powered Stapler (ECP).

Methods

- A retrospective, matching-adjusted indirect comparison (MAIC) was conducted to compare data gathered during a clinical trial of ECP in left-sided colorectal resections (n=168) with a historical cohort of patients who underwent the procedure using MCS (n=4,544)
- 165 patients from the ECP cohort were propensity score matched to 1,348 patients from the MCS cohort



MAIC is a technique used to compare outcomes between independently conducted studies. In this MAIC, the availability of individual patient data allowed the two cohorts to be balanced based on important prognostic characteristics (including age, sex, ethnicity, comorbidities and indication for surgery) using propensity score matching

Study Endpoints:

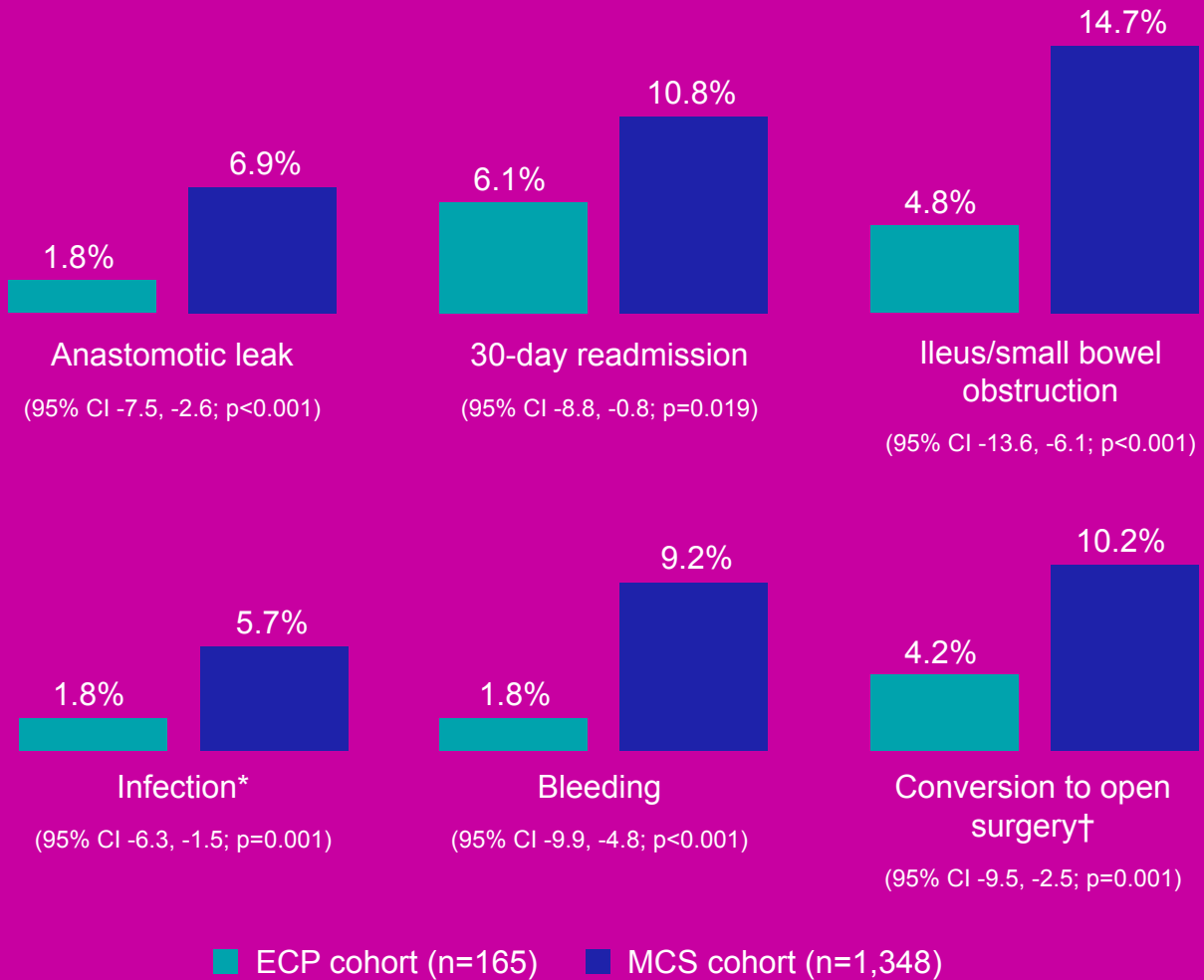
Conversion from a minimally invasive approach to open surgery; 30-day readmission rates; length of stay for the index admission; rates of anastomotic leak (AL), pelvic abscess, ileus/small bowel obstruction, infection, bleeding, and ostomy creation.



Results



Following propensity score matching, compared to the MCS cohort, the ECP cohort had statistically significant lower rates for:



*Infection included surgical site infections, sepsis and peritonitis; †Conversion from a minimally invasive approach to open surgery.



There were no statistically significant differences in the length of stay, rates of pelvic abscesses or ostomy creation between the two cohorts

Additional Study Details

A key limitation of the study is that there could have been additional confounding factors between the ECP cohort and the MCS cohort which were not possible to account for, such as surgeon skill level.