

Study Summary

Impact of the novel powered circular stapler on risk of anastomotic leakage in colorectal anastomosis: a propensity score-matched study

Pla-Martí V, Martín-Arévalo J, Moro-Valdezate D et al. Tech Coloproctol. 2020.

Available online: <https://doi.org/10.1007/s10151-020-02338-y>

Conclusion

The ECHELON CIRCULAR™ Powered Stapler has the potential clinical advantage of reducing anastomotic leak incidence in left-sided colorectal anastomosis

Study Aim

To compare the anastomotic leak (AL) rate between the Echelon Circular™ Powered Stapler (ECP) and manual circular staplers (MCS) for left-sided colorectal anastomosis.

Methods

- Retrospective analysis of a prospectively maintained cohort database of 279 consecutive patients who had a left-sided colorectal anastomosis >5cm from the anal verge with ECP (n=61) or MSC (n=218)
- All procedures (Hartmann's reversal, left colectomy, sigmoidectomy and anterior rectal resection) took place between January 2017 and February 2020 at a single centre in Spain
- Patients were propensity-score matched (ECP [n=60] and MSC [n=119]) and AL within 30 days of surgery was confirmed with computed tomography



Propensity-score matching ensured the groups were balanced for age, sex, BMI, ASA Charlson index, preoperative Hb, pathology and surgical approach



The Clavien-Dindo classification is a discrete scale measuring the severity of complications from Grade I (no treatment) to Grade V (patient death)

Primary Endpoints:

- Risk of AL depending on the type of circular stapler used

Secondary Endpoint:

- Degree of postoperative morbidity according to Clavien-Dindo classification



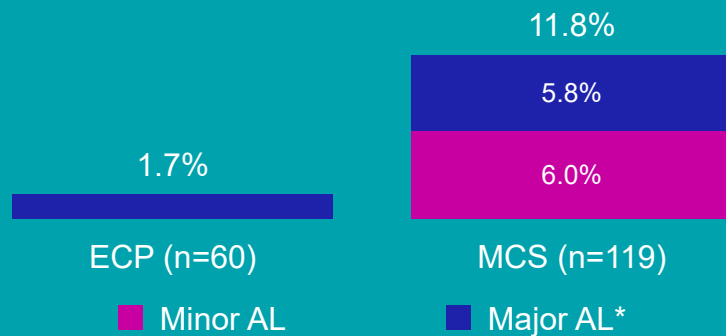
Results

Anastomotic Leak

- In the overall cohort including both ECP and MCS groups, 9% (25/279) of patients experienced AL
- Factors significantly associated with AL were the type of circular stapler used ($p=0.021$) and patient ASA score ($p=0.025$)
- All other variables included in propensity-score matching, as well as operating time and diagnosis, were not related to AL ($p \geq 0.05$), highlighting the impact of the circular stapler used



Following propensity-score matching, the AL rate was significantly lower for patients treated with ECP compared to MCS ($p=0.022$)



*Requiring reoperation.



There was a trend for a lower risk of AL with ECP (odds ratio [OR] 0.169, 95% CI 0.024–1.166) compared to MCS (OR, 1.258, 95% CI 1.132–1.398)

Postoperative Morbidity



Following propensity-score matching, there was a trend for lower postoperative morbidity with ECP compared to MCS ($p=0.054$) according to Clavien-Dindo classification, including fewer patients with complications resulting in:

