

## Clinical summary

Medtronic provides the following synopsis of a clinical publication comparing the risks of anastomotic leak between the three-row EEA™ circular stapler with Tri-Staple™ technology and conventional two-row circular staplers.

### Effectiveness of a new triple-row circular stapler in reducing the risk of colorectal anastomotic leakage: A historical control and propensity score-matched study

Mazaki J, Katsumata K, Ishizaki T, et al.; *Medicine (Baltimore)*. 2022; 101(27):e29325 doi:10.1097/MD.00000000000029325

#### Why this is important

This study compares the three-row EEA™ circular stapler with Tri-Staple™ technology (TSEEA) with two-row circular staplers. It demonstrates a **lower incidence and reduced risk of anastomotic leak** after using TSEEA.

#### Background

- A team at Tokyo Medical University Hospital (Japan) compared the three-row TSEEA to a two-row circular stapler in left-sided colorectal procedures using a propensity score-matching analysis. **The primary endpoint was evaluating the risk of anastomotic leak.**
- Anastomotic leak was diagnosed according to the International Study Group of Rectal Cancer definition: "a defect of the intestinal wall at the anastomotic site leading to a communication between the intra- and extraluminal compartments or as an abscess adjacent to the anastomosis."
- A total of 285 patients who underwent anastomosis with the double-stapling technique between 2017 and 2021 were included in this nonrandomized clinical trial with historical controls.
- Propensity score analysis was performed to adjust for differences in distribution of the subject population across the double-row and triple-row groups in critical areas, specifically in age and ASA-score, which are known confounding factors for influencing anastomotic leak.

- The anastomotic leak rate in the entire cohort was 6.0% (17 subjects). Prior to propensity score-matching, anastomotic leakage occurred in 15 (7.4%) of the double-row subjects and 2 (2.4%) of the TSEEA subjects.
- There were 112 subjects in the two-row stapling group and 56 subjects in the TSEEA group after the 1:2 matching adjustment. After case-matching, **anastomotic leakage occurred in 1 subject (1.8%) in the TSEEA group and 13 subjects (11.6%) in the double-row circular stapler group.**
- The authors further note that compared to two-row circular staplers, the TSEEA "allows for gradual compression from the inside to the outside of the lumen, gradually releasing pressure outward, thereby preventing severe compression damage."

#### Conclusion

The study's analysis of clinical data suggests use of the EEA™ circular stapler with Tri-Staple™ technology contributes to a significant reduction in anastomotic leaks following colorectal surgery compared to conventional two-row staplers.

***This concludes the clinical synopsis of this publication***