Medtronic

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.0000000000029325

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 gradualcompression 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