

Mechanical vs. Manual Anastomosis in Colorectal Cancer Surgery: A Comparative Analysis

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Abstract

Background: colorectal cancer is a common and serious condition, with surgical resection being the primary treatment for localized cases. Anastomotic dehiscence (AD) remains a significant postoperative complication, and anastomoses are typically created using either manual suturing or mechanical stapling, each with specific benefits and challenge.

Material and Methods: this retrospective study analyzed outcomes in 100 rectal cancer patients who underwent surgical resection, with anastomoses performed via manual suturing (n=50) or mechanical stapling (n=50). Primary outcomes included fistula rates, postoperative complications, and recovery metrics. Secondary outcomes focused on operative time, hospital stay and quality of life.

Results: mechanical anastomosis reduced procedure time (15 ± 5 minutes vs. 30 ± 5 minutes; $p < 0.01$) and improved quality of life at 12 months (HQI: 87 vs. 75; $p < 0.01$). The incidence of fistulas was higher in patients with manual suturing compared to mechanical suturing, but without significant differences (12% vs. 22%; $p = 0.29$). Mechanical anastomosis shortened the hospitalization period (12.66 vs. 13.58 days; but manual suturing allowed for faster recovery of intestinal transit (82% vs. 76%).

Conclusions: mechanical anastomosis is more efficient, but manual anastomosis remains valuable in complex cases. Technique selection should be tailored to individual patient needs and surgical conditions.

Key words: colorectal cancer, anastomotic dehiscence, anastomotic fistula, rectal cancer