

Anesthesia for Colorectal Surgery



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KEYWORDS

- Colon surgery • Rectum surgery • Optimization • Analgesia • Anesthesia
- Fluid therapy • Goal-directed therapy

KEY POINTS

- Anesthesiologists play a pivotal role in facilitating recovery of patients undergoing colorectal surgery, as many Enhanced Recovery After Surgery (ERAS) elements are under their direct control.
- Successful implementation of ERAS programs requires that anesthesiologists become more involved in perioperative care and more aware about the impact of anesthetic techniques on surgical outcomes and recovery.
- A key area for achieving a successful outcome is the strict adherence to the principle of aggregation of marginal gains.
- Anesthesia considerations for patients with colorectal cancer and those undergoing emergency colorectal surgery are discussed.

INTRODUCTION

Anesthesiologists play a pivotal role in facilitating recovery of patients undergoing colorectal surgery, as many Enhanced Recovery After Surgery (ERAS) elements are under their direct control. Successful implementation of ERAS programs requires firstly that anesthesiologists become more involved in perioperative care and more aware about the impact of anesthetic techniques on surgical outcomes and recovery. Second, there are many evidenced-based steps within ERAS protocols. Although some of these steps may have greater impact than others, a key area for achieving a successful outcome for these patients is the strict adherence to these individual steps: the principle of aggregation of marginal gains.¹ This article reviews anesthetic and analgesic care of patients undergoing elective colorectal surgery in the context of an ERAS program. Anesthesia considerations for patients with colorectal cancer and emergency colorectal surgery are also discussed.

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PREOPERATIVE PATIENT EDUCATION

Preoperative patient education is an essential component of any ERAS program. Preoperative patient education and preparation has positive effects on outcomes such as pain, psychological distress, and indices of recovery, including hospital stay, even if the intervention is relatively brief and not individualized. Patient expectation may also play a role in postoperative outcome.^{2,3} As the enhanced recovery approach may differ from patients' and their caregivers' expectations, it is important to specify the active role the patient is expected to play. Specifications include explicit written information, at an appropriate literacy level, specifying daily goals for nutritional intake and ambulation in the perioperative period, discharge criteria, and expected hospital stay.

PREOPERATIVE EVALUATION, RISK STRATIFICATION, AND OPTIMIZATION

Preoperative evaluation and risk stratification are valuable only if they allow subsequent patient optimization, leading to reduced postoperative mortality and morbidity. Thirty-day mortality after colorectal surgery varies among countries and institutions,⁴ and ranges between 2% and 6%.^{5,6} Data from 182 hospitals participating in the American College of Surgeons National Surgery Quality Improvement Program (NSQIP) showed that in 28,863 patients undergoing colorectal surgery, overall 30-day mortality was 3.9%.⁷ After emergency surgery, 30-day mortality is 3 to 4 times higher than after elective surgery.^{5,8} Overall morbidity ranges between 21% and 30%,⁷ and is higher after rectal surgery than after colon surgery.⁹ Of interest, patients developing complications within 30 days from surgery have a 69% lower chance of surviving at 8 years.¹⁰

General^{7,11} and organ-specific^{12–16} preoperative scoring systems and assessment of functional capacity^{17,18} can help to predict and stratify preoperative risk. The preoperative evaluation is also an opportunity to improve long-term health besides surgery, such as counseling patients who may benefit from long-term β -blockers, stopping smoking, or tightening glycemic control. Although a substantive discussion about cardiopulmonary risk assessment and reduction is beyond the scope of this article, current guidelines and algorithms are available for assessment and reduction of perioperative risk related to cardiac disease,¹⁹ anemia,²⁰ pulmonary complications,²¹ obesity,²² obstructive sleep apnea,²³ and diabetes.²⁴ Preoperative evaluation and risk stratification of elderly patients is complex, and should also measure cognitive function, estimate the risk of postoperative delirium and postoperative falls, and estimate functional capacity and the patient's frailty.²⁵ Secondary adrenal suppression should be suspected in patients with inflammatory bowel diseases on long-term systemic steroids. Steroids should be continued at the same dose throughout the perioperative period (including the morning of surgery), with higher doses (stress dose) administered only to hypotensive patients in whom arterial hypotension is unrelated to other causes (eg hypovolemia, sepsis).²⁶

Preoperative smoking cessation has been shown to improve outcomes,²⁷ but the optimal duration of preoperative abstinence still remains unclear. It is acknowledged that the implementation of such an approach in clinical practice is not always feasible because of limited hospital resources, lack of organization, and waiting time before the operation. Nevertheless, perioperative caregivers should take the opportunity to emphasize the importance of smoking cessation and be more proactive in helping patients to quit smoking. Preoperative alcohol cessation can improve organ dysfunction, but the effect on postoperative outcomes remains unclear.²⁸

Patients undergoing colorectal surgery are commonly malnourished, as undernutrition ranges from approximately 10% to 40% depending on the nutrition risk tool used.

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