

Impact of Protective Ileostomy on Postoperative Electrolyte Imbalances in Rectal Cancer Surgery: A Retrospective Analysis

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Abstract

Introduction: Electrolyte imbalances are common following minimally invasive rectal resections, particularly in patients with protective ileostomies. Such imbalances can severely hinder postoperative recovery, resulting in dehydration, renal dysfunction, and various metabolic abnormalities. *Objectives:* This study aims to evaluate the incidence and ramifications of electrolyte imbalances in rectal cancer patients undergoing minimally invasive surgical procedures, irrespective of ileostomy status.

Methods: A retrospective analysis was performed on 117 rectal adenocarcinoma patients who underwent minimally invasive resections between 2016 and 2023. Patient categorization was based on ileostomy status, with rigorous assessment of preoperative and postoperative electrolyte levels and comprehensive documentation of complications.

Results: Of 117 patients, 91 (77.8%) had a protective ileostomy. Hypokalemia and hyponatremia were significantly prevalent in the ileostomy cohort; hypokalemia affected 16.2% of patients by postoperative day two, declining to 7.7% by day four ($p=0.03$). Dehydration-related complications were recorded in 3.4% of cases, while acute renal insufficiency was observed in 0.9%. Readmission rates were significantly increased in the ileostomy group (32.5%) due to fluid and electrolyte disorders ($p<0.01$).

Conclusions: The presence of a protective ileostomy during rectal cancer surgery is associated with an increased risk of postoperative electrolyte imbalances and subsequent complications, highlighting the need for diligent monitoring and management strategies.

Key words: rectal cancer, protective ileostomy, electrolyte imbalance, hyponatremia, hypokalemia, minimally invasive surgery