

## An Alteration to Standardized Treatments: Defunctioning Colostomy in Ultra-Low Stage IIIC Rectal Adenocarcinoma

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### INTRODUCTION

In the United States, approximately 46,000 cases of rectal adenocarcinoma are diagnosed each year.<sup>1</sup> The most common presenting symptoms include rectal bleeding, the sensation of a rectal mass, iron deficiency anemia, and abdominal pain.<sup>2</sup> A change in bowel habits also is frequently reported, though this typically refers to changes in frequency or stool consistency rather than incontinence.<sup>2</sup>

Approximately 27% of patients with colorectal cancer present with large bowel obstruction.<sup>3</sup> For patients who present prior to obstruction, clinicians must weigh the risks of disease progression or radiotherapy-associated edema leading to obstruction, which could interrupt neoadjuvant therapy, against the risks of prophylactic stoma creation (ileostomy or colostomy) before beginning treatment.<sup>3,4</sup> According to Mesri et al.,<sup>3</sup> protocols for non-emergent stoma creation, particularly in cases of potentially obstructing rectal cancer during neoadjuvant chemoradiation therapy (CRT), or when other quality-of-life complications exist, are poorly defined.<sup>3</sup> As a result, patients may face difficult decisions about undergoing a preventive surgery that could ultimately prove unnecessary.<sup>5</sup>

To contribute to the growing body of case-based evidence on factors influencing this decision, we present the case of a patient with stage IIIC rectal adenocarcinoma who experienced significant fecal incontinence symptoms at presentation.

### CASE REPORT

A man in his 70s was referred to general surgery as part of a multidisciplinary plan to determine the best course of treatment for recently diagnosed stage IIIC rectal cancer. He had presented to the emergency department three weeks earlier with a chief complaint of unexplained weight loss (60 pounds over four months; body mass index 22.2 kg/m<sup>2</sup>). During review of systems, he also reported weakness, night sweats, intermittent hematochezia, hair loss, dizziness, and cold intolerance. His medical history included hypertension and type 2 diabetes mellitus, managed with insulin glargine. His only prior abdominal surgery was resection of a left lower quadrant liposarcoma five years ago, which did not involve adjacent structures.

On rectal examination, low sphincter tone and a palpable intraluminal mass were noted in the distal rectum. Computed tomography (CT) imaging of the abdomen and pelvis revealed an irregular cystic/solid lesion in the mesorectal space, likely arising from the rectum (Figure 1). Colonoscopy identified a large, partially obstructing distal mass occupying approximately 90% of the lumen, extending from the rectum to the sigmoid colon. Biopsies confirmed well to moderately

differentiated adenocarcinoma with no evidence of mismatch repair deficiency.

Staging chest CT showed no evidence of distant metastases. Pelvic magnetic resonance imaging (MRI) demonstrated a 61.5 mm lobulated, heterogeneously enhancing mass located 1 cm from the anal verge (Figure 2). The tumor was staged as T4b, N2a, cM0. Pretreatment serum carcinoembryonic antigen (CEA) was 235.22 ng/mL, indicating a poor prognosis but serving as a valuable baseline for assessing future treatment response and recurrence.<sup>6</sup>

During his oncology consultation, the patient reported worsening fecal incontinence since his weight loss began, requiring the use of disposable undergarments. He had not previously disclosed these symptoms, stating he was never directly asked and felt uncomfortable volunteering the information. The Wexner fecal incontinence score, a validated tool evaluating the severity and impact of incontinence on quality of life, was administered and returned a score of 20/20, consistent with complete incontinence.<sup>7,8</sup>

Given the patient's severe incontinence, there was concern for worsening dermatitis or infection during chemoradiation therapy (CRT),<sup>9</sup> as well as the risk of acute bowel obstruction from tumor-related edema. These factors made the risks associated with prophylactic stoma creation prior to CRT acceptable. After discussing the options, including proceeding directly to CRT or undergoing surgery first, the patient opted for surgery.

A defunctioning stoma procedure was planned; however, during surgical mobilization of the sigmoid colon, scarring and mesenteric shortening from the prior liposarcoma resection were identified. Due to devascularization of the colon, a Hartmann's procedure was performed: the devascularized segment was resected, the rectum was stapled closed (just proximal to the tumor), and a colostomy was created from the remaining colon. The patient recovered without significant complications.

Post-operatively, he began long-course chemoradiation with capecitabine, followed by 16 weeks of FOLFOX chemotherapy per National Comprehensive Cancer Network (NCCN) guidelines.<sup>6</sup> Restaging with serum CEA, MRI and CT were planned 20 weeks after the start of CRT. Based on tumor response, additional CRT, surgical resection, or a watch-and-wait strategy will be considered.

The patient acknowledged challenges adjusting to the colostomy, including dietary changes, supply access, and social anxiety, but reported that it provided improved hygiene, comfort, and control compared to his prior incontinence. If total tumor regression is achieved or sufficient sphincter function remains after resection, reversal of the colostomy will be considered through shared decision-making and clinical judgment.

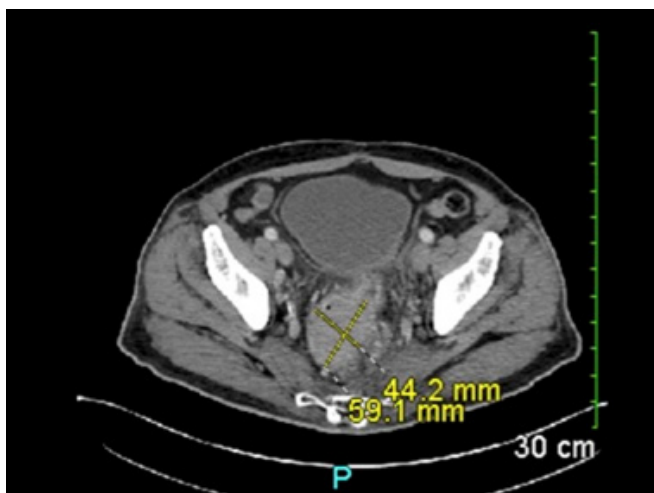


Figure 1. Abdomen/pelvis CT showing the rectal mass measuring 44.2 x 59.1 mm.

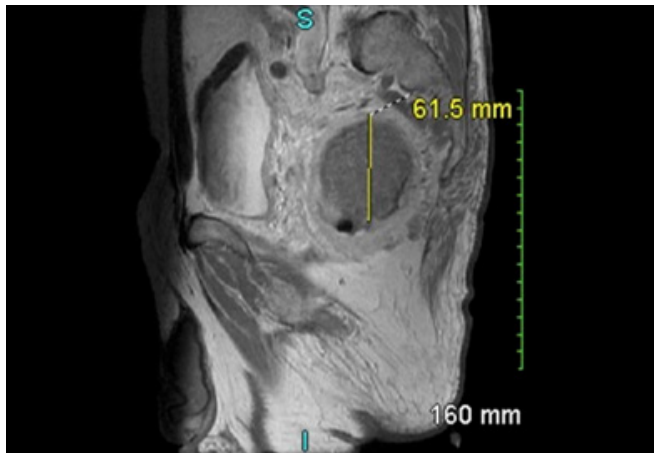


Figure 2. Abdomen/pelvis MRI showing the rectal mass with a height of 61.5 mm.

## DISCUSSION

Ultra-low rectal cancer is associated with a risk of bowel obstruction requiring emergency surgery at presentation,<sup>3</sup> as well as significant changes in bowel function.<sup>10</sup> In non-emergent cases, the NCCN guidelines recommend CRT for stage T3 or T4 rectal cancers, followed by restaging to determine candidacy for surgical resection with anastomosis or colostomy if needed.<sup>6</sup>

The role of defunctioning stomas prior to neoadjuvant therapy remains controversial, as reliable prognostic indicators for bowel obstruction during CRT are not well established.<sup>3</sup> Quality-of-life considerations, such as severe fecal incontinence, may influence the decision to pursue pre-treatment stoma creation as part of the treatment plan.

It is important to counsel patients on the possibility that a temporary stoma may become permanent. In one study of 134 patients, 17% ultimately did not undergo reversal.<sup>11</sup> Because many patients may be reluctant to disclose sensitive symptoms such as incontinence, direct and empathetic conversations are essential to ensure comprehensive symptom management during treatment.

More research is needed to define optimal timing and selection criteria for defunctioning stoma creation in rectal cancer. At present, decisions should be made collaboratively by the patient and a multidisciplinary care team, with individualized consideration of both clinical and quality-of-life factors.

## REFERENCES

- <sup>1</sup> Siegel RL, Giaquinto AN, Jemal A. Cancer statistics, 2024. *CA Cancer J Clin* 2024; 74(1):12-49. PMID: 38230766. Erratum in: *CA Cancer J Clin* 2024; 74(2):203. PMID: 38363123.
- <sup>2</sup> Thompson MR, O'Leary DP, Flashman K, Asiimwe A, Ellis BG, Senapati A. Clinical assessment to determine the risk of bowel cancer using Symptoms, Age, Mass and Iron deficiency anaemia (SAMI). *Br J Surg* 2017; 104(10):1393-1404. PMID: 28634990.
- <sup>3</sup> Mesri M, Hitchman L, Yiaesemidou M, Quyn A, Jayne D, Chetter I. Protocol: The role of defunctioning stoma prior to neoadjuvant therapy for locally advanced colonic and rectal cancer-A systematic review. *PLoS One* 2022; 17(9):e0275025. PMID: 36137109. Erratum in: *PLoS One* 2024; 19(7):e0308240. PMID: 39078821.
- <sup>4</sup> Feeny G, Sehgal R, Sheehan M, et al. Neoadjuvant radiotherapy for rectal cancer management. *World J Gastroenterol* 2019; 25(33):4850-4869. PMID: 31543678.
- <sup>5</sup> Munshi E, Lydrup M, Buchwald P. Defunctioning stoma in anterior resection for rectal cancer does not impact anastomotic leakage: A national population-based cohort study. *BMC Surg* 2023; 23(1):167. PMID: 37340428.
- <sup>6</sup> NCCN clinical practice guidelines in oncology: Rectal Cancer, version 4. 2024. [http://www.nccn.org/professionals/physician\\_gls/pdf/rectal.pdf](http://www.nccn.org/professionals/physician_gls/pdf/rectal.pdf). Accessed April 23, 2025.
- <sup>7</sup> Jorge J, Wexner S. Etiology and management of fecal incontinence. *Dis Colon Rectum* 1993; 36(1):77-97. PMID: 8416784.
- <sup>8</sup> Sarcher T, Dupont B, Alves A, Menahem B. Anterior resection syndrome: What should we tell practitioners and patients in 2018?. *J Visc Surg* 2018; 155(5):383-391. PMID: 30126800.
- <sup>9</sup> Hickok JT, Morrow GR, Roscoe JA, Mustian K, Okunieff P. Occurrence, severity, and longitudinal course of twelve common symptoms in 1129 consecutive patients during radiotherapy for cancer. *J Pain Symptom Manage* 2005; 30(5):433-442. PMID: 16310617.
- <sup>10</sup> Schiffmann L, Kostev K, Kalder M. Fecal and urinary incontinence are major problems associated with rectal cancer. *Int J Colorectal Dis* 2020; 35(1):35-40. PMID: 31758248.
- <sup>11</sup> Flooddeen H, Lindgren R, Matthiessen P. When are defunctioning stomas in rectal cancer surgery really reversed? Results from a population-based single center experience. *Scand J Surg* 2013; 102(4):246-250. PMID: 24056133.

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