

Pathological Complete Response Following Neoadjuvant Chemoradiotherapy in Locally Advanced Rectal Adenocarcinoma: A Case Report

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Introduction

Rectal adenocarcinoma is one of the major causes of death from cancer all around the globe. Neoadjuvant chemoradiation therapy has been adopted as the standard therapy for treating locally advanced rectal cancer due to its ability to enhance local control, help in preserving the anal sphincter muscles, and even attain a pathological complete response (pCR). Inconsistencies in radiologic, endoscopic, and pathologic findings remain a challenge in managing such cases. We describe a case of locally advanced rectal adenocarcinoma that responded well to neoadjuvant chemoradiation therapy, resulting in a pathological complete response following definitive surgical resection.

Case Report

History: A 64-year-old woman came with a 5-day history of painless hematochezia and diarrhea. The patient was not having any abdominal pain, weight loss, anorexia, fever, or change in bowel habits. There was no personal or family history of colon cancer or inflammatory bowel disease.

Diagnoses:

DRE: Irregular rectal mass was palpated.

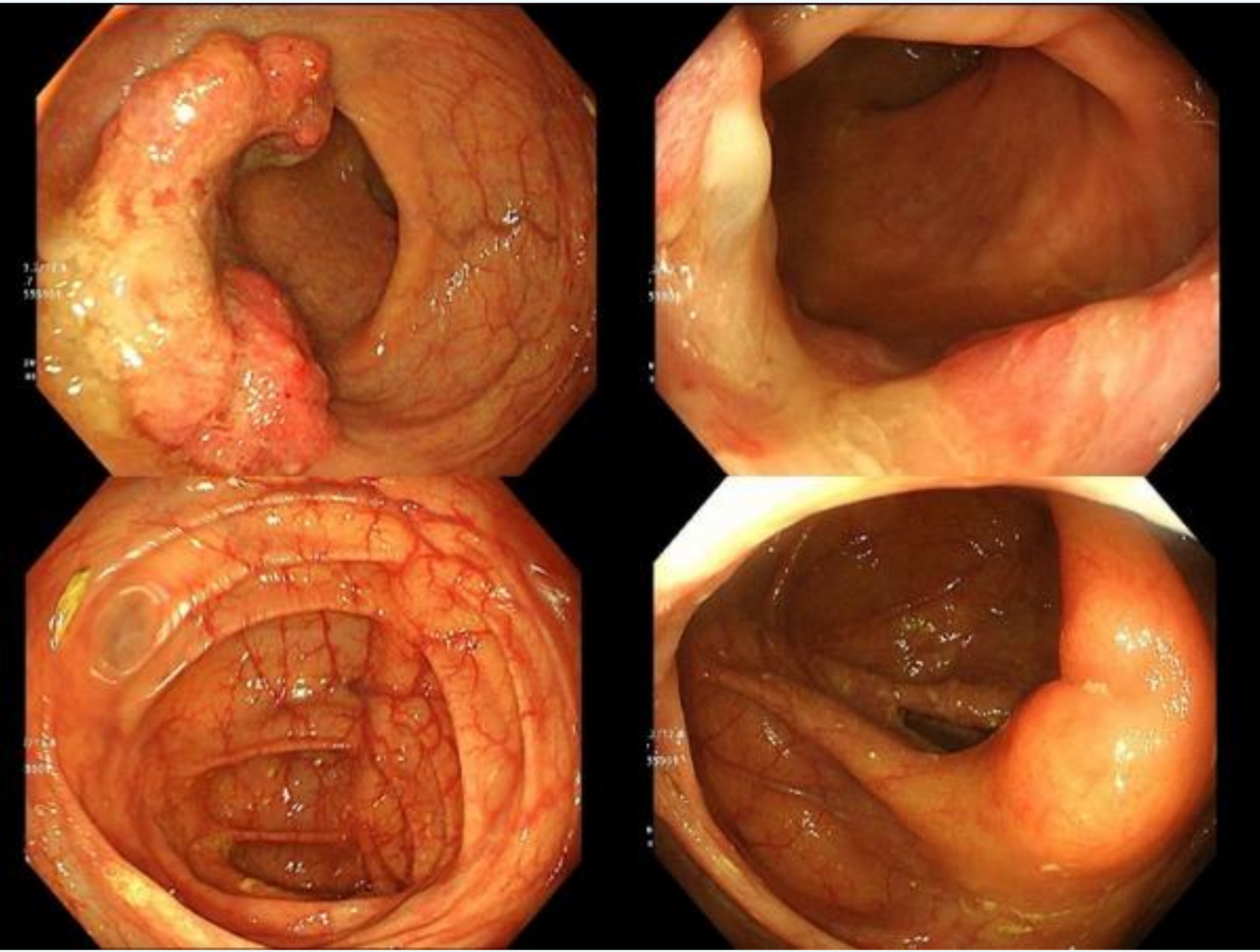
Colonoscopy: presence of a polypoidal rectal mass at a distance of about 4.5-9 cm from the anal verge.

Histopathologic evaluation: Presence of moderately differentiated rectal adenocarcinoma. **Magnetic resonance imaging and contrast-enhanced computed tomography:** revealed the stage to be cT3N1M0 with threatened circumferential resection margin (CRM) and enlarged mesorectal lymph nodes without distant metastasis.

Clinical Timeline

Time	Event
Day 0	Hematochezia × 5 days
Initial work-up	MRI/CT → cT3N1M0, threatened CRM
Following diagnosis	25 sessions neoadjuvant chemoradiotherapy
Post-CRT	Scar only; biopsy negative; MRI → fibrosis
After reassessment	Low anterior resection + temporary stoma
Post-surgery	Histopathology → ypT0N0 (pCR)
Follow-up	No recurrence/metastasis; stoma reversal planned

Radiography & Echocardiography



Colonoscopic examination identified a polypoid rectal tumor extending from approximately 4.5 cm to 9 cm from the anal verge, while the anal canal appeared normal.

Laboratory Profile

Tumor marker	Reference value	Observed value
CEA levels	<3 ng/mL	14 ng/mL

Conclusion

This case highlights the remarkable therapeutic response that can be achieved with neoadjuvant chemoradiotherapy in locally advanced rectal adenocarcinoma. Despite an apparent major clinical response, discordance between endoscopic and radiological findings may persist, making definitive assessment of complete tumor eradication challenging. Multidisciplinary evaluation integrating clinical examination, endoscopy, high-resolution pelvic MRI, and histopathological assessment remains essential for guiding treatment decisions. Although organ-preserving strategies are increasingly considered in carefully selected patients, definitive surgical resection remains an appropriate option when residual disease cannot be confidently excluded.

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