Case report

Advanced Colorectal Carcinoma inspite of initial non-malignant biopsies:The Critical Role of Multidisciplinary Evaluation and Repeat Biopsies

Abstract

Colorectal cancer (CRC) poses significant diagnostic and management challenges due to its varied clinical presentations. This case report describes a 60-year-old male who presented with progressive rectal bleeding, substantial weight loss, and a protruding mass from the anus. Initial evaluations, including ultrasound and CT scans, indicated neoplastic involvement in the sigmoid colon and rectum. In contrast, initial histopathology revealed high-grade dysplasia in the sigmoid colon and a solitary rectal ulcer. Due to persistent clinical suspicion and input from a multidisciplinary team, repeat biopsies confirmed poorly differentiated adenocarcinoma of the rectum. The patient underwent palliative surgery and systemic chemotherapy, which led to significant symptom relief and partial disease stabilization. This case highlights the need for comprehensive diagnostic assessment and a multidisciplinary approach in managing advanced colorectal cancer, highlighting the critical role of repeat biopsies and integrated clinical expertise in ensuring accurate diagnosis and effective treatment.

Key words: Colorectal cancer, oncology, clinical presentations

Introduction

Colorectal cancer (CRC) poses significant challenges in oncology, characterized by varied clinical presentations and diagnostic complexities [1]. We present a unique case of advanced colorectal carcinoma initially misdiagnosed on non-malignant biopsy, highlighting the critical role of a multidisciplinary approach in managing atypical presentations. CRC, predominantly adenocarcinoma, ranks among the most diagnosed cancers globally, with over 150,000 new cases annually in the United States alone [1,2]. Incidence peaks with age, showing a slight male predominance, while rising trends in early-onset CRC underscore evolving epidemiological patterns [2,3]. Genetic predispositions, such as Lynch syndrome, familial adenomatous polyposis, and environmental factors like diet and lifestyle, contribute significantly to CRC risk [4]. Clinical manifestations range from asymptomatic to symptoms such as altered bowel habits, rectal bleeding, and weight loss, necessitating thorough evaluation through colonoscopy, imaging, and tumor markers for accurate diagnosis and staging [5,6]. Treatment involves multimodal approaches, including surgery, chemotherapy, and targeted therapies, tailored to disease stage and patient factors [7,8]. However, challenges arise in managing advanced cases due to aggressive disease behavior and metastatic potential [9,10].(In advanced colorectal cancer the main cause of death is the metastasis not the primary tumour) This case report

emphasizes the uncommon nature and diagnostic difficulties associated with initially missed CRC diagnoses, aiming to enhance awareness and highlight the necessity of integrated clinical management for optimal patient care and outcomes.

Case Presentation

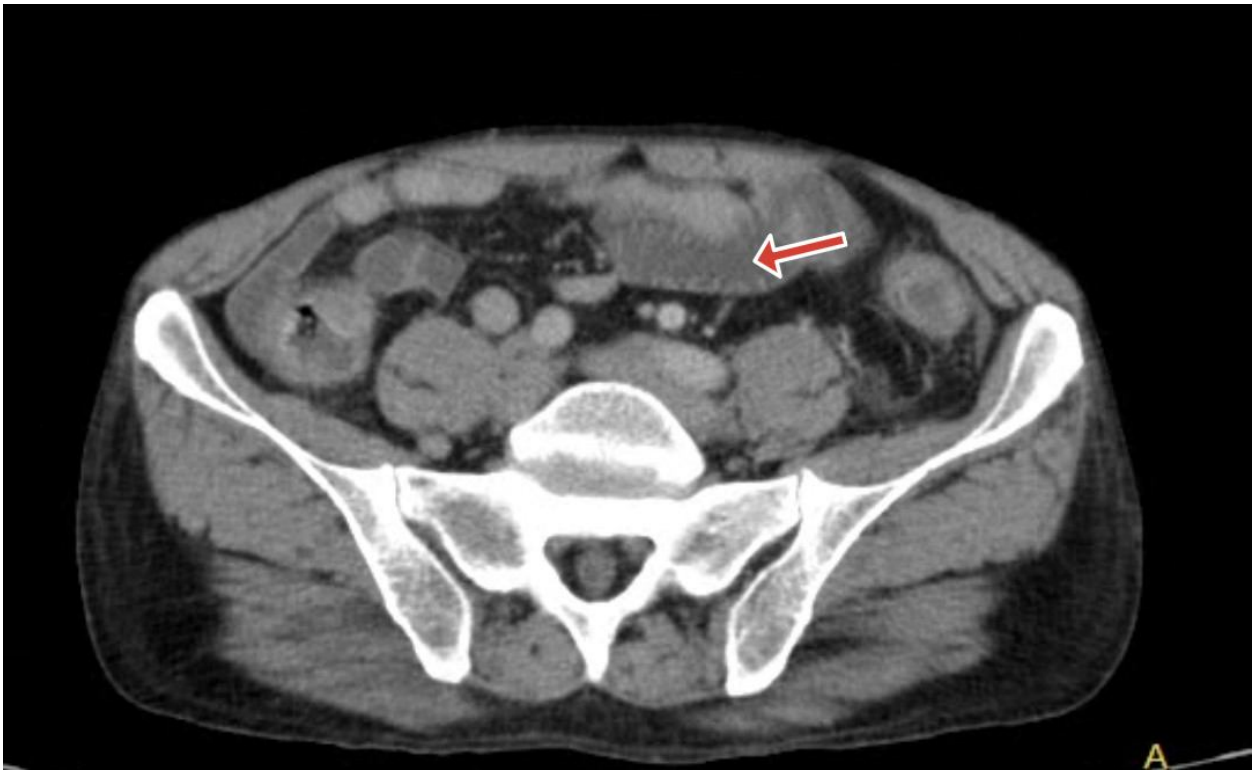
A 60-year-old male had presented with a complaint of progressive rectal bleeding and mucoid discharge for two months. He also reported a significant weight loss of 10 kilograms over four months and noted the sensation of something protruding from his anus during defecation for the past two weeks. Upon digital rectal examination (DRE), a mass was felt on the posterior wall of the rectum. Proctoscopy revealed a non-ulcerating mass protruding into the rectal lumen from the 5 to 7 o'clock position. Table 1 shows the values of different hematological and serological laboratory investigations.

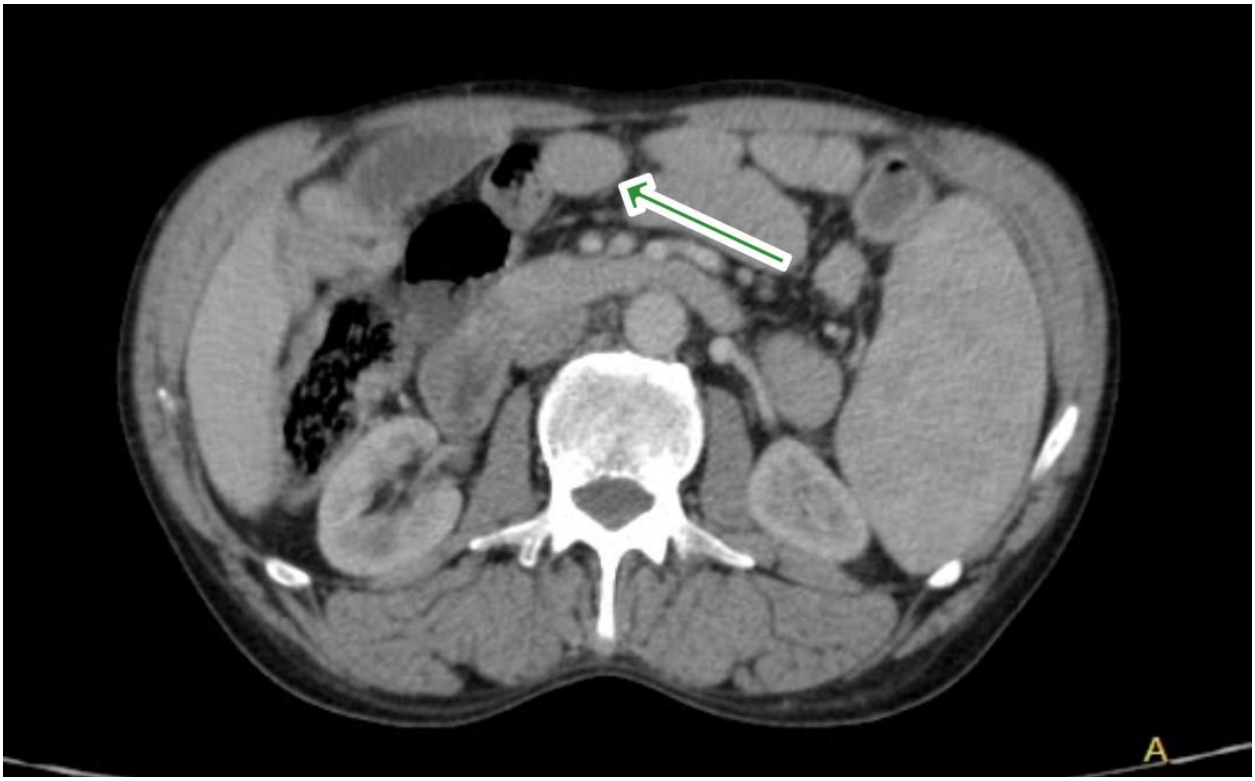
Parameter	Value	Normal Ranges
Hemoglobin	5.7 g/dl	13.8 to 17.2 g/dl
Total Leukocyte Count (TLC)	3100 /µL	4,000 to 11,000 cells/µL
Red blood cell (RBC) count	4.7 million cells/µL,	4.7 to 6.1 cells/µL
Mean corpuscular volume (MCV)	67 fL	80 to 100 fL
Creatinine	1.2 mg/dL	0.74 to 1.35 mg/dL
HBsAg	Negative	Negative
Anti-HCV	Positive	Negative
Anti-HIV	Negative	Negative
prostate-specific antigen (PSA)	2.17 ng/mL	0 to 4.0 ng/mL

Table 1: Overview of laboratory investigations of patient

Initial imaging studies included an abdominal and pelvic ultrasound, which showed a liver measuring 15.1 cm with a coarse texture and irregular outline but no focal lesions. The spleen was enlarged at 15.6 cm with no focal lesions. Notably, the colon showed circumferential wall thickening in a 5 cm segment of the sigmoid colon with peri-colic increased fat echogenicity, suggesting a neoplasm. A subsequent CT scan revealed telescoping of the sigmoid colon on itself for a 9.5 cm segment with a 3.1 x 2.5 cm heterogeneous lesion at the distal lead point. Enlarged lymph nodes, the largest measuring 15 x 14 mm, were noted. The liver measured 16.6 cm with irregular margins and caudate lobe hypertrophy but no enhancing focal lesions. The portal vein was dilated to 24 mm. The spleen was significantly enlarged at 20.9 cm with varices

at its hilum. Lung fields showed a few soft tissue nodules and extensive degenerative changes were noted in the bone window without lytic or sclerotic lesions. The CT scan impression suggested likely intussusception with a suspicious mass at the distal lead point and advised colonoscopic correlation and follow-up for pulmonary nodules.
Figure 1A and Figure 1B show the images of contrast-enhanced CT abdomen and pelvis.





Figures 1A and 1B: CT Scan of the Abdomen Demonstrating a Sigmoid Colorectal Mass with Associated Pericolonic Fat Stranding and Lymphadenopathy

Colonoscopy findings showed an irregular, friable, bleed-to-touch mass in therectosigmoid mass, partially occluding the lumen and extending from 15 to 20 cm from the anal vergeA similar mass was noted in the sigmoid colon extending from 40 to 50 cm from the anal verge. Figure 2 shows the friable mass in the sigmoid colon seen during colonoscopy.

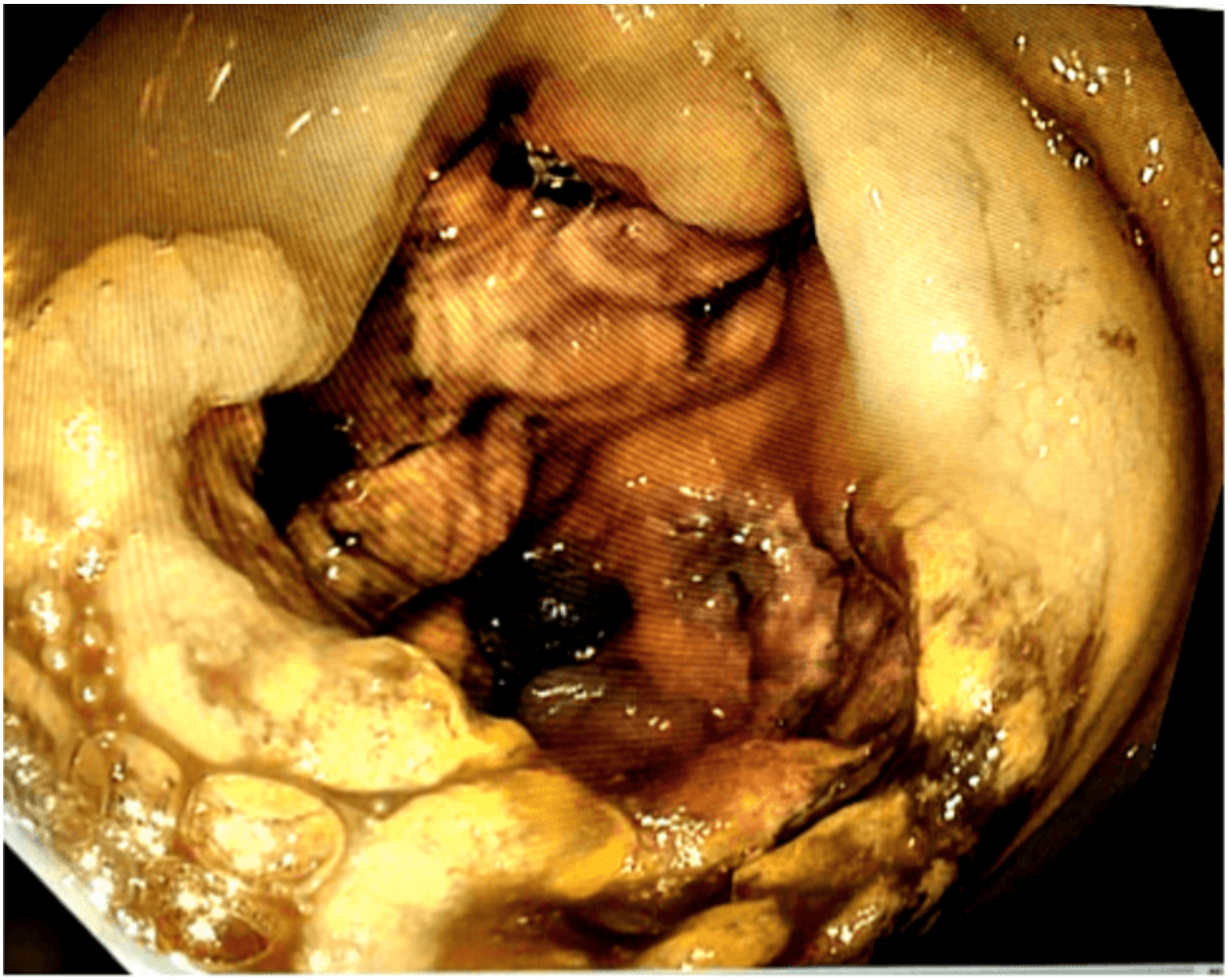


Figure 2: Friable mass seen during colonoscopy of the patient

Multiple biopsies were taken from both sites. The initial histopathology report described a tubulo-villous adenoma with high-grade dysplasia from upper mass in the sigmoid colon, suggesting potential invasion. Therectosigmoid mass of lower region was identified as a solitary rectal ulcer with no evidence of granulomatous process or malignancy. Due to high clinical suspicion despite initial negative biopsy results and the presence of multiple pulmonary metastases and lymphadenopathy, the case was discussed in a multidisciplinary team (MDT) meeting involving radiologists, oncologists, gastroenterologists, and surgeons. Given the clinical findings of significant weight loss and elevated CEA levels, repeat colonoscopy and additional biopsies were recommended. Repeat colonoscopy and histopathology confirmed poorly differentiated adenocarcinoma in the rectum.

The multidisciplinary team (MDT) decided on a palliative approach due to the extensive disease, including multiple pulmonary metastases and lymphadenopathy. The patient underwent a sigmoidectomy to remove the involved segment of the colon, including the sigmoid colon and associated lymph nodes.The main focus was on systemic therapy to manage the metastatic disease, including chemotherapy and targeted therapy, to control symptoms and improve quality of life. Postoperatively, the patient began a systemic chemotherapy regimen of FOLFIRI,

consisting of Folinic Acid (400 mg/m² IV infusion over 2 hours), Fluorouracil (400 mg/m² IV bolus on Day 1, followed by 2400 mg/m² continuous infusion over 46 hours), and Irinotecan (180 mg/m² IV infusion over 90 minutes on Day 1), administered every two weeks for at least six months. Postoperative complications included infection, which was managed with antibiotics, and other issues related to the surgical site, which were addressed with appropriate surgical intervention and care. Pulmonary complications were addressed with physiotherapy and respiratory support. The patient experienced significant symptom relief and improved quality of life post-surgery. The chemotherapy resulted in partial disease stabilization. Long-term monitoring included regular clinical examinations, imaging studies, and laboratory tests focusing on quality of life and symptom management. The patient gave informed consent for preparing and publishing this case report, ensuring an understanding of the potential benefits and contributions to medical knowledge and future patient care.

Discussion

This case underscores the diagnostic challenges and complexities of advanced colorectal carcinoma, mainly when initial biopsy results are non-malignant. The patient's presentation with significant weight loss, progressive rectal bleeding, and a protruding mass from the anus is consistent with suspicion of colorectal cancer. Despite initial histopathological findings indicating high-grade dysplasia and a solitary rectal ulcer, the high clinical suspicion warranted further investigation, ultimately confirming poorly differentiated adenocarcinoma. A colorectal cancer diagnosis can be particularly challenging due to the disease's heterogeneity and the potential for initial biopsies to miss malignant cells. This case highlights the critical need for repeat biopsies when clinical suspicion remains high despite initial negative results. Studies have shown that repeat biopsies can significantly improve diagnostic accuracy, particularly in cases where initial findings are inconclusive. The multidisciplinary team (MDT) approach played a pivotal role in this case, ensuring comprehensive evaluation and management. MDTs facilitate shared decision-making and tailored treatment plans. This teamwork is crucial for effectively handling intricate cases, as it integrates diverse expertise to optimize patient outcomes. The patient's treatment involved a combination of palliative surgery and systemic chemotherapy, which is standard for advanced colorectal cancer. The FOLFIRI regimen, consisting of Folinic Acid, Fluorouracil, and Irinotecan, is commonly used and has improved survival and quality of life in advanced cases. Despite the advanced stage of the disease and the presence of multiple metastases, the patient experienced significant symptom relief and partial disease stabilization. This highlights the potential benefits of aggressive multimodal treatment, even in palliative settings. Comparative analysis with existing literature reveals similar diagnostic and treatment challenges in advanced colorectal cancer cases. For instance, a study by Anania et al. highlighted the value of a multidisciplinary approach in improving diagnostic accuracy and treatment outcomes [7]. Additionally, the role of repeat biopsies in confirming malignancy, as demonstrated in this case, aligns with findings from other studies that advocate for thorough diagnostic evaluations in suspected cancer cases [7-14].

Conclusion

This case report illustrates the necessity of a thorough and multidisciplinary approach in managing advanced colorectal carcinoma, mainly when initial biopsy results are non-malignant. The integration of repeat biopsies, comprehensive imaging, and collaborative decision-making are crucial in ensuring accurate diagnosis and effective treatment. Ongoing research and case reporting are essential to enhance our understanding and management of such complex conditions, ultimately improving patient care and outcomes.

Ethical Approval:

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

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