A Case Report on Moderately Differentiated Adenocarcinoma of the Ascending Colon Presenting in a 45-Year-Old Woman

Manahil Imran, Humaimah Zeeshan, Mariyah Muskan,Hassan Rehman,Arisha Ahmar,Maryam Ahsan, Sara Gul, Asma Abdul Razzaq, Moiz Abbas, Marwa Naseem, Aesha Aamir, Hamna Kayani, Syed Israr Ahmed, Shahzaib Ishhaq, Muhammad Awais, Amna Noor, Liaqat Ali

1st Year MBBS, Islamabad Medical and Dental College, Islamabad, Pakistan

ABSTRACT

Colorectal cancer (CRC) remains one of the most prevalent malignancies worldwide, with adenocarcinoma being the predominant histological type. This report discusses the case of a 45-year-old female diagnosed with moderately differentiated adenocarcinoma of the ascending colon. The patient initially presented with nonspecific symptoms, and subsequent investigations led to the diagnosis. She underwent a right hemicolectomy followed by chemotherapy. This case highlights the importance of early diagnostic evaluation, the role of imaging and histopathology in staging, and outlines the clinical management of Stage III colon cancer in a resource-limited setting.

***Key Words**: Colonic adenocarcinoma, Right-sided colon cancer, FOLFOX regimen, PT2N2 staging, Early-onset colorectal cancer*

Background/Introduction

Colorectal cancer (CRC) is one of the most commonly diagnosed malignancies worldwide, ranking third in incidence and second in cancer-related mortality[1]. While it is traditionally considered a disease of older adults, an increasing number of cases are now being identified in younger individuals, often with more advanced disease at diagnosis. In South Asia, particularly Pakistan, colorectal cancer is underdiagnosed and often presents at late stages due to lack of awareness, limited access to screening, and delayed healthcare-seeking behavior.[2]

In Pakistan, the true burden of colorectal cancer remains difficult to estimate due to underreporting and the absence of a centralized national cancer registry. However, data from regional cancer centers suggest a rising incidence, with a growing number of patients presenting in their 30s and 40s[3]. Right-sided colon cancers—such as tumors in the ascending colon—tend to remain clinically silent longer than left-sided ones, contributing to delayed diagnoses.

This report discusses a case from a rural background in Azad Jammu and Kashmir (AJK), where specialized cancer care services are limited. The patient, a 45-year-old female from AJK, was referred to a tertiary care oncology center in Islamabad after initial investigations suggested a malignant colon lesion. Her case illustrates the challenges faced by patients in peripheral regions, including diagnostic delays and the need for referral to urban centers for definitive care. By presenting this case, we aim to highlight not only the clinical features and management of moderately differentiated adenocarcinoma of the ascending colon, but also the importance of strengthening early detection and oncology infrastructure in underserved areas of Pakistan.

Clinical Findings & Diagnostic assessment

A 45-year-old female, Nazia Parveen, presented with complaints of generalized body aches. She had no significant comorbidities such as hypertension, diabetes, hepatitis, or chronic obstructive pulmonary disease (COPD). A colonoscopy was performed after the patient reported altered bowel habits and right-sided abdominal discomfort. The colonoscopy revealed a large friable mass obstructing the proximal ascending colon and cecum. Biopsy from the mass, reported on 10th March 2025, confirmed moderately differentiated adenocarcinoma. The patient subsequently underwent a right hemicolectomy. Histopathological staging classified the tumor as pT2N2, indicating invasion into the muscularis propria with metastases in four or more regional lymph nodes.

A CT scan of the abdomen and pelvis dated 24th February 2025 showed circumferential mural thickening of the ascending colon and multiple enhancing lymph nodes in the ileocolic region suggestive of neoplastic spread. Additional findings included mild pangastritis and scalloping of the duodenal folds. No distant metastasis was noted on imaging.

She was referred to the oncology department at the Pakistan Atomic Energy Commission (PAEC) Hospital in Islamabad on 30th April 2025, where her diagnosis was confirmed as Stage III colon cancer. She was subsequently admitted to the oncology ward of Dr. Akbar Niazi Teaching Hospital for the initiation of chemotherapy. Baseline laboratory investigations, including CBC, renal and liver function tests, and serum electrolytes, were within normal limits.

Chemotherapy was initiated the same day using a FOLFOX-like regimen. On Day 2, she continued infusion therapy and supportive care. On Day 3, G-CSF was administered as per protocol. The first cycle was well tolerated, and further cycles were planned.She tolerated chemotherapy well, remained vitally stable throughout admission, and was discharged as planned on 2nd May 2025. A follow-up was scheduled for 14th May 2025.

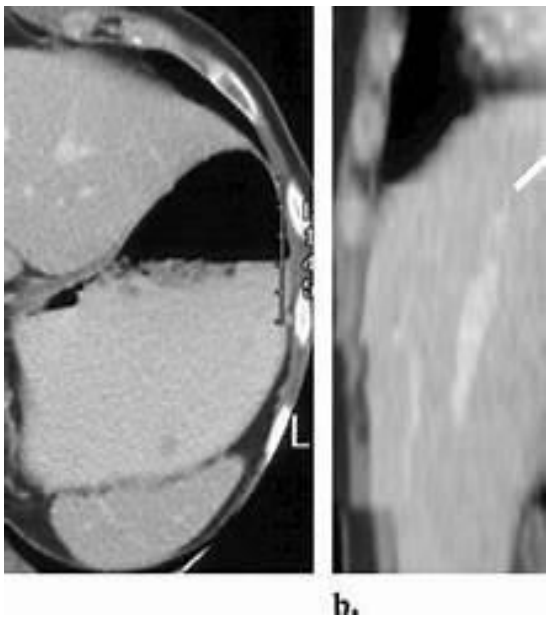

Figure 1 : *A CT scan findings suggesting circumferential mural thickening of the ascending colon and multiple enhancing lymph nodes in the ileocolic region*

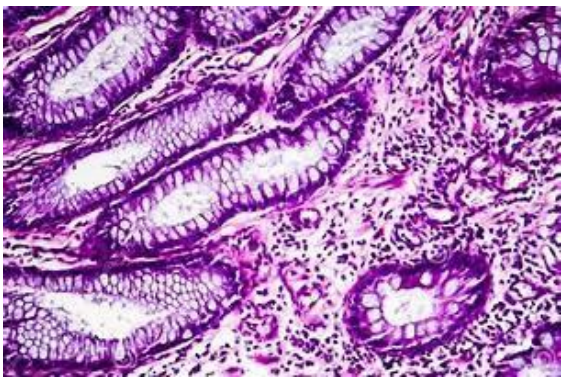

Figure 2 : *Histological figure showing atypical cells with enlarged cellular lumen*

Discussion

Colorectal adenocarcinoma progresses through a stepwise transformation from benign adenomatous polyps to malignant carcinoma. Risk factors include genetic predisposition, dietary habits, inflammatory bowel disease, and age. However, younger patients without comorbidities, as in this case, may also develop sporadic tumors. The increasing incidence of CRC among younger adults has been documented globally, with a notable rise in cases among individuals under 50 years of age.[4]

Right-sided colon cancers often present later and grow larger before becoming symptomatic. They are less likely to cause overt symptoms such as rectal bleeding or changes in bowel habits, leading to delayed diagnoses. In this case, the patient's nonspecific symptoms underscore the need for heightened clinical suspicion and timely diagnostic evaluation.[5]

Colonoscopy remains the gold standard for diagnosis, allowing for direct visualization and biopsy confirmation. CT imaging is essential for staging, assessing local invasion, lymph node involvement, and distant metastasis.

Management of Stage III colon cancer involves complete surgical resection followed by adjuvant chemotherapy. The FOLFOX regimen (5-FU, leucovorin, and oxaliplatin) is the standard of care for this stage and has been shown to significantly improve disease-free and overall survival.6

The patient's good performance status and absence of comorbid conditions allowed her to initiate and tolerate chemotherapy well. Timely referral and multidisciplinary coordination played a key role in prompt diagnosis and treatment

Conclusion

This case highlights the importance of a thorough diagnostic workup in patients presenting with vague abdominal symptoms, especially in younger individuals. Despite the absence of typical red-flag symptoms, the patient was found to have Stage III colon cancer requiring both surgical and chemotherapeutic intervention. Early identification and prompt oncological management are essential to improve outcomes in colorectal cancer. The case also underscores the value of accessible oncology services and structured referral systems in tertiary healthcare settings.

Informed Consent/Ethics approval

Oral consent from the patient was aquired prior to the making of this case report.

References

1. De Moraes FY, Marta GN, Mitera G, Forte DN, Pinheiro RN, Vieira NF, et al. Choosing Wisely for oncology in Brazil: 10 recommendations to deliver evidence-based cancer care. Nat Med. 2022;28(9):1738-9.
2. Colorectal Cancer Survival and Its Prognostic Factors in Karachi, Pakistan. Journal of the College of Physicians and Surgeons Pakistan. 2024;34(06).
3. Ahmad R, Abbasi HJ, Nasir IUI, Shah MF. Demographic characteristics and short-term outcomes of laparoscopic colon cancer surgeries at a newly developed cancer center in Peshawar, Pakistan. Pak J Med Sci. 2024;40(5):918-21.
4. Dharwadkar P, Zaki TA, Murphy CC. Colorectal Cancer in Younger Adults. Hematol Oncol Clin North Am. 2022;36(3):449-70.
5. Moraes Filho O, Alves Martins BA, Silva AAM, Nóbrega Dos Santos AC, de Almeida RM, Sousa JB. Impact of Sidedness of Colon Cancer on Epidemiological, Clinical Presentation, Surgical, Pathological, and Oncologic Outcomes. J Pers Med. 2024;14(12).
6. Hu H, Wu Z, Wang C, Huang Y, Zhang J, Cai Y, et al. Duration of FOLFOX Adjuvant Chemotherapy in High-Risk Stage II and Stage III Colon Cancer With Deficient Mismatch Repair. Front Oncol. 2020;10:579478.