CASE REPORT

# Caecal Carcinoma Mimicking Intestinal Tuberculosis: A Diagnostic Dilemma

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## ABSTRACT

Intestinal tuberculosis (ITB) frequently mimics colorectal malignancy in endemic regions, often leading to diagnostic uncertainty. Conversely, colorectal carcinoma may be misdiagnosed and treated as intestinal tuberculosis, resulting in delayed definitive management. We report a case of caecal carcinoma initially diagnosed and treated as intestinal tuberculosis based on clinical findings. Histopathological examination following surgical intervention ultimately revealed adenocarcinoma of the caecum. This case highlights the limitations of empirical antitubercular therapy and emphasizes the need for histological confirmation before initiating long-term treatment.

Keywords: Antitubercular therapy, caecal carcinoma, intestinal tuberculosis.

## INTRODUCTION

Colorectal cancer is the second leading cause of cancer-related mortality. It often presents insidiously with altered bowel habits or iron-deficiency anemia, though patients may present with obstruction, bleeding, metastatic disease, or be diagnosed incidentally on imaging. Most colorectal cancers occur in the sigmoid colon (30%), rectum (25%), and cecum/ascending colon (25%), with the remainder involving the transverse and descending colon.[1]

Gastrointestinal tuberculosis is frequently seen in developing countries, particularly among economically disadvantaged populations. In older individuals, it can present in a manner similar to gastrointestinal cancer.[2] Abdominal tuberculosis is an infrequent clinical condition with potential involvement of the gastrointestinal tract, peritoneum, lymphatic system, and solid abdominal organs.[3]

## CASE REPORT

A 25-year-old male, previously diagnosed with abdominal tuberculosis at another center based on a positive Mantoux test, had been receiving anti-tubercular therapy for one month. He presented to our emergency department with generalized abdominal pain, progressive abdominal distension, and unintentional weight loss for one month. USG abdomen and pelvis was advised which showed moderate to gross ascites. Diagnostic ascitic fluid tapping of 10 ml was done and was sent for analysis, which showed total count of 600/cubic mm and differential count – lymphocytes- 94% (elevated), LDH-249 U/L (mildly elevated), total protein- 4.5 gm/dl, albumin-1.5 gm/dl (low), Adenosine Deaminase (ADA) – 25.9 U/L (normal), AFB stain – AFB not seen, Gram stain- No organism seen, Fluid C/S – No growth noted. Due to progressive abdominal distention and associated pain, USG guided pig tail insertion was done, from

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which approximately 2 litres of intra-abdominal fluid were drained. CECT abdomen and pelvis was done for further evaluation, which showed, diffuse coarse area of mesenteric calcification and omental thickening at right iliac fossa, right and left lumbar region, associated with mesenteric and bowel wall thickening at right iliac fossa region. Gross free fluid was noted in abdomen and pelvis. Differential diagnosis of Abdominal tubercular infection, Peritoneal carcinomatosis was given. Further evaluation with tumor markers were done, that showed CEA–92.3 ng/ml (elevated), CA 19.9– 189 U/ml (elevated). Colonoscopy was attempted, but could not be successful due to severe pain and collapsed bowel loops. Previously inserted pigtail catheter was inadvertently misplaced. Within 24 hours, the patient redeveloped gross ascites with severe abdominal pain, prompting a plan for diagnostic laparoscopy to further investigate the underlying pathology. Diagnostic laparoscopy was done, which showed, omental caking, gross ascites, presence of adhesions and peritoneal seeding, for which multiple omental and peritoneal biopsies were taken and sent for histopathology examination.

**Figure 1: Diagnostic laparoscopy revealing multiple peritoneal seeding suggestive of peritoneal metastasis**

Histopathology examination revealed- poorly differentiated adenocarcinoma and immunohistochemistry evaluation was recommended for further characterization. Immunohistochemistry reports showed- poorly differentiated signet ring cell carcinoma, IHC points towards a lower GI tract origin. Following consultation with an oncologist, patient underwent adjuvant chemotherapy.

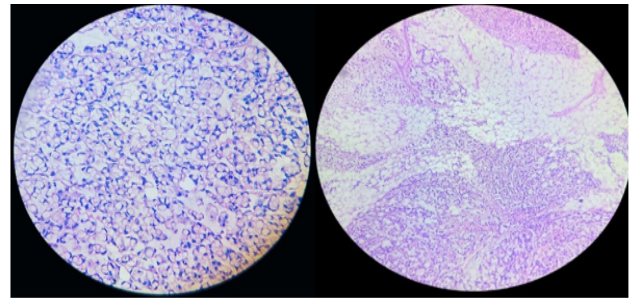

**Figure 2: A- Sections show diffuse sheets of signet ring cells and poorly formed atypical glands infiltrating the fibrofatty tissue (H&E stain; 4x). B- The tumor cells have abundant cytoplasm filled with mucin displaying the nucleus to the periphery giving the signet ring appearance (H&E stain; 40x).**

## DISCUSSION

Colorectal cancer is the second leading cause of cancer-related mortality, often presenting insidiously with altered bowel habits or iron-deficiency anemia, though patients may present with obstruction, bleeding, metastatic disease, or be diagnosed incidentally on imaging. Most colorectal cancers occur in the sigmoid colon (30%), rectum (25%), and cecum/ascending colon (25%), with the remainder involving the transverse and descending colon.[1] Colorectal cancer has traditionally been associated with older adults; however, recent evidence shows a rising incidence in individuals under 50 years, termed young-onset colorectal cancer. Over the past two decades, a steady global increase has been observed among adolescents and young adults, particularly in the 20–24-year age group.[4] Patients may present with bowel obstruction, intussusception, significant bleeding, abdominal pain, and fever, which can closely mimic abdominal tuberculosis.[1]

Gastrointestinal tuberculosis is an uncommon manifestation of TB, with isolated colonic involvement reported in approximately 10.8% of cases, and remains a major health concern in developing countries.[5] Intestinal tuberculosis is a common form of extra-pulmonary TB, most frequently involving the terminal ileum and caecum.[6] It typically presents with chronic abdominal pain, night sweats, diarrhea, and fatigue, often mimicking other conditions and complicating

diagnosis. Diagnosis is generally established through a combination of clinical assessment, imaging findings, acid-fast bacilli staining, and histopathological examination.[5]

Although the Mantoux test is considered to be sensitive for TB, a positive Mantoux test, misled to the diagnosis in our case. The occurrence of advanced colonic adenocarcinoma in a 25-year-male in our case, underscores the emerging global burden of young-onset colorectal cancer. Although still relatively uncommon, young-onset colorectal cancer is increasingly recognized and tends to present aggressively, with incidence rising since the mid-1990s and projections indicating it may become a leading cause of cancer-related mortality in adults under 50 by 2030.[4] The advanced stage at diagnosis in this patient is consistent with reports showing that most young patients present with regional or metastatic disease, highlighting delays in diagnosis and systemic gaps in early detection.[4]

Imaging features such as colonic narrowing, ascites, omental thickening, lymphadenopathy, and bowel wall thickening, along with colonoscopic findings of ulceration, nodularity, caecal masses, and ileocaecal valve deformities, can suggest abdominal TB but are nonspecific and may also be seen in malignancy, making clinical and radiological differentiation challenging.[1] Although elevated CEA and CA 19-9 supported colorectal carcinoma in our case, a study[6] reported only 51.9% sensitivity at 90% specificity for CEA in colorectal cancer, with accuracy improving when combined with CA 19-9, and elevated CEA has also been observed in patients with peritoneal TB and TB empyema.[6]

Diagnostic laparoscopy has become an essential oncological tool, enabling direct peritoneal visualization and targeted biopsies, bridging imaging and surgery, and allowing detection of peritoneal carcinomatosis often missed on conventional imaging, which is crucial for prognosis and treatment planning.[7] In our case, diagnostic laparoscopy was performed, with multiple biopsies for histopathological evaluation. Definitive resolution of this diagnostic challenge relies on histopathological confirmation through tissue examination. Histopathological confirmation distinguishes malignancy from TB and can also detect coexisting pathologies that may influence management.[6]

## CONCLUSION

Caecal carcinoma may closely resemble intestinal tuberculosis, especially in endemic areas, making histopathological confirmation essential before or during treatment, and a poor response to anti-tubercular therapy should prompt reassessment for possible malignancy.

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