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Case Report

A Mis-Diagnosed Case of Cancer Colon- A Case Report

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Abstract

Colorectal cancer (CRC) is a leading cause of cancer-related morbidity and mortality worldwide. Its clinical presentation is often subtle, leading to frequent delays in diagnosis and often confused with Gastrointestinal tuberculosis (GI TB) which has been found to have a similar presentation. The incidence of underdiagnosis or misdiagnosis of cancer is reported to be very high according to several studies, especially in areas with a high prevalence of TB. Here we present a similar case of a 57-year-old male patient who was misdiagnosed earlier as a case of GI TB and was empirically started on ATT in a tertiary care hospital and later diagnosed to have colon cancer in our institute. Hence this case report is being shared to enhance our understanding of this uncommon scenario. It is important to consider malignancy as a potential diagnosis for patients without a history of pulmonary TB who present with non-specific gastrointestinal symptoms. We assert that in high tuberculosis prevalence settings like India, suspicion of malignancy should also be maintained, and advanced testing should be conducted when clinical and radiological findings do not differentiate between the two conditions.

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KEYWORDS: Abdominal Tuberculosis, Colorectal Cancer, Misdiagnosis

INTRODUCTION

According to the World Health Organization, colorectal cancer (CRC) ranks as the third most prevalent cancer among males and the second among females globally. [1] Adenocarcinomas constitute the most frequent type. It has been seen that its clinical presentation is rather typically sneaky. In 2015, approximately 2.5 million cases of tuberculosis were estimated in India [WHO, Geneva, 2015]. Gastrointestinal tuberculosis is prevalent in the developing world, particularly among lower socioeconomic groups. Unlike pulmonary tuberculosis, abdominal tuberculosis is less frequently observed but can lead to substantial morbidity and mortality. Its nonspecific clinical presentation often results in delayed diagnosis, complicating its differentiation from malignancy, especially in middle-aged patients.[2] Underdiagnosis or misdiagnosis of cancer is reported to be as high as 44% according to Burton *et al.,* [3] who documented discrepancies between autopsy and clinical diagnosis. This report presents and discusses a similar case of misdiagnosis in a male patient with caecal adenocarcinoma, aiming to enhance our understanding of this uncommon scenario.

CASE REPORT

A 57-year-old male patient presented to the outpatient department complaining of diffuse abdominal pain persisting for the past 2 months, along with a history of obstipation managed conservatively at a tertiary healthcare center. He had no significant prior medical or surgical history and denied any history of pulmonary tuberculosis. Further evaluation included blood workup and a contrast-enhanced CT scan of the abdomen and pelvis, revealing irregular circumferential enhancing

segmental wall thickening (maximum 2.1 cm) with luminal narrowing involving the cecum, proximal ascending colon (segment length: 6.5 cm), and ileocecal junction. Mild thickening was also noted in the distal ileum. Additionally, large peripherally enhancing lymph nodes were observed along the cecal mesentery, with the largest measuring 4.0 x 2.0 cm. These findings were suggestive of ileocecal tuberculosis, although a neoplastic cause could not be definitively ruled out. As a result, the patient was initiated on anti-tuberculosis treatment (ATT) empirically.

On presentation in our center, general condition was fair, vitals were stable. Abdominal examination revealed a soft non-tender abdomen with a 5 x 6 cm lump in the right iliac fossa which was hard in consistency, non-tender, well defined, intraperitoneal, did not move with respiration, and was non-mobile. Digital per rectal examination was normal.

Hematological investigations were normal except for erythrocyte sedimentation rate (ESR) which was 142 mm (0–30 mm normal) and microcytic hypochromic anemia. His serum levels of carcinoembryonic antigen (CEA), and cancer antigen19-9(CA 19-9) could not be checked as these facilities were currently not available at our center.

Contrast-enhanced CT(CECT) abdomen revealed an irregular, ill-defined asymmetrical circumferential thickening noted in caecum and ileo-caecal junction for maximum thickness of 16 mm for a segment of 6 cm showing absence of mural stratification with associated mild dilatation of appendix, perifocal fat stranding and mesenteric lymphadenopathy (7 mm in short axis diameter), suggestive of neoplastic thickening of caecum.

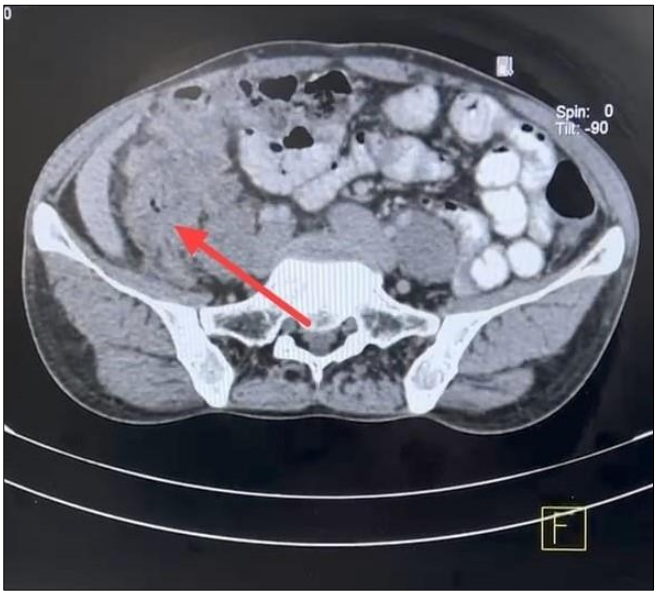


Fig 1: CECT image axial view showing ascending colon thickening with almost complete obliteration of lumen.

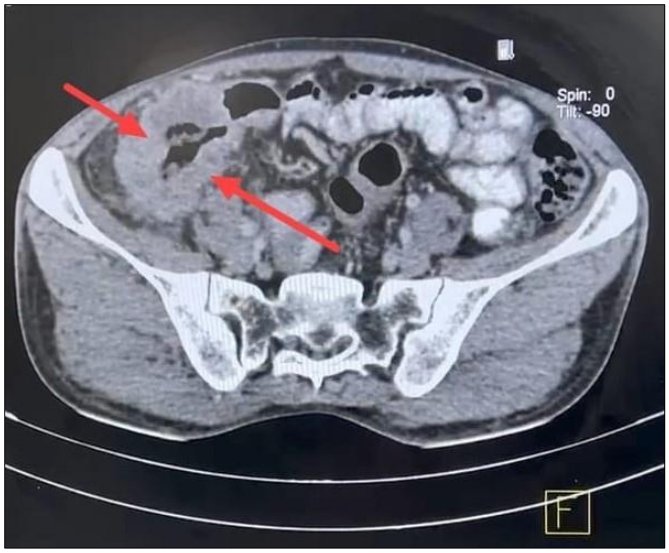
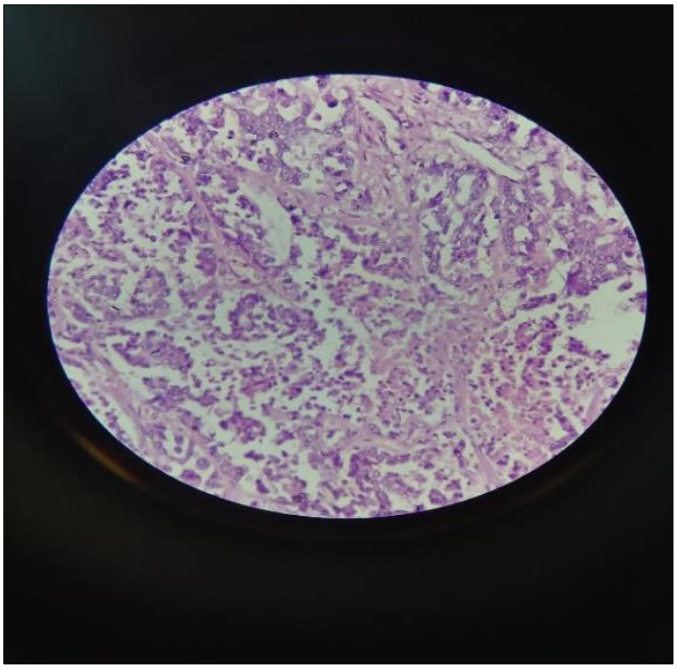


Fig 2: CECT image axial view showing caecal thickening

Colonoscopy revealed an ulcero-proliferative growth which bled on touch in the caecum and multiple tissue biopsies were taken which on HPE revealed a core of fibro-connective tissue with infiltration by tumor in nests and glandular pattern. The tumor cells showed vesicular nuclei, moderate nuclear pleomorphism and prominent nucleoli. These features were suggestive of poorly differentiated carcinoma.



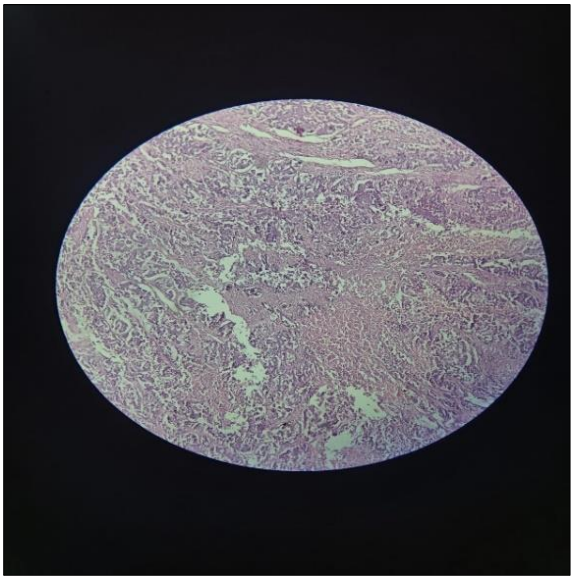


Fig 3: Histopathology slide showing poorly differentiated adenocarcinoma

Finally, a pre-operative diagnosis of poorly differentiated carcinoma of the caecum was made and the patient was planned for right Hemicolectomy. Intra-operatively it was noted that the caecum and the ascending colon were clumped up in the right iliac fossa to form a mass and the appendix was found to be swollen. Several palpable mesenteric lymph nodes were noted. A few epi-colic and para-colic lymph node involvements were also noted. During surgery, we identified the origin of this tumor as a cecal carcinoma, with invasion to the retroperitoneum and involvement of ascending colon as well as distal ileum noted. Mass was found to adhere to the gonadal vessels and duodenum. We performed an open right hemicolectomy with stapled Ileo-transverse anastomosis. Post-operatively patient showed speedy recovery and was started on the oral diet on post-op day 3 which he tolerated well and was taken up for a multidisciplinary discussion for further plan of management.

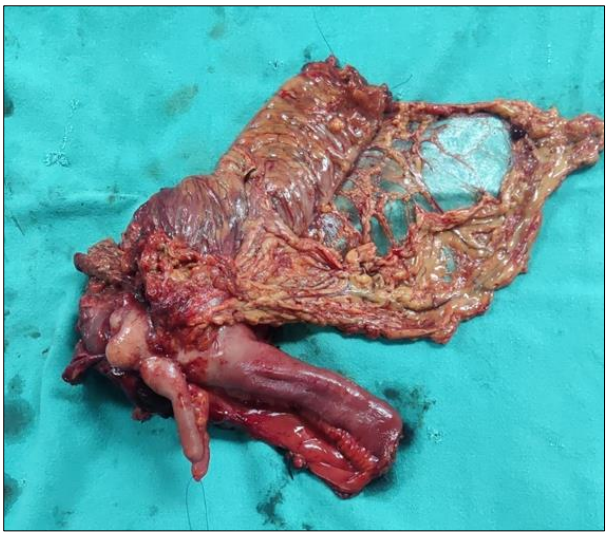


Fig 4: Gross specimen of resected tumor showing distal ileum, caecum, ascending colon along with mesocolon.

DISCUSSION

Colorectal cancer (CRC) ranks as the third most prevalent cancer globally and is the second leading cause of cancer-related deaths worldwide [1]. Adenocarcinomas, accounting for over 90% of cases, are the most common type [3]. CRC primarily affects the elderly, with a higher prevalence in males [4]. It is notably marked by a significant incidence in the right colon and the presence of large tumors (greater than 5 cm) [4]. Symptoms may include abdominal pain, unintentional weight loss, alterations in bowel habits, and blood in the stool, which are often similar to those observed in other colorectal cancers.

Due to the nonspecific nature of its clinical manifestations, which typically arise late in the disease course, CRC is often diagnosed at an advanced stage with node-positive disease and metastatic spread, rendering surgery infeasible and resulting in a poor prognosis [5]. The delay in diagnosis can also be attributed to the radiographic appearance of these tumors, which may resemble inflammatory conditions [6], as well as the high rates of false negatives associated with endoscopic biopsy [4].

Gastrointestinal tuberculosis (TB) poses a significant health challenge and is becoming an increasing threat due to global migration [7]. The exact mechanism of how the bacteria colonize the bowel remains unclear; it is uncertain whether they penetrate the bowel wall directly or enter through the arterial circulation. The ileocecal region is the most frequently affected area, involved in 64% of gastrointestinal TB cases, likely due to the rich lymphoid tissue and stool stasis in this segment. Other parts of the colon are affected by decreasing frequency as one moves away from the ileocecal area, with the rectosigmoid being the least affected [8].

Symptoms are often nonspecific and can mimic conditions such as Crohn's disease and colon cancer. The most common complaints include abdominal pain (80.6%), weight loss (74.63%), loss of appetite (62.69%), fever (40.3%), loose stools (16.42%), and alternating constipation and diarrhea (25.37%) [2]. Diagnosing extrapulmonary TB remains difficult due to subtle endoscopic and radiographic findings [9].

Our patient exhibited no signs of pulmonary TB, which is observed in 75-80% of individuals with gastrointestinal TB. The reasons why some individuals develop extrapulmonary TB while others do not are not entirely understood; however, factors such as race, age, underlying health conditions, bacterial genotype, and immune status have been linked to its pathogenesis [10]. Immune status significantly influences the presentation of bowel TB, with the ulcerative form (60%) being more prevalent among immunocompromised individuals and the hypertrophic form (10%) more common in immunocompetent patients.

When evaluating the history and findings, the differential diagnosis includes colon malignancy, inflammatory bowel disease, and TB, as all share similar clinical profiles and radiological features. Considering the patient's CT scan results, colonic cancer was the most likely diagnosis. However, given the patient’s presenting symptoms and the high prevalence of TB in India, TB was equally considered as a differential.

Effective treatment for colonic TB can often be achieved with conservative management using oral anti-TB medications unless

surgical emergencies like perforation or obstruction arise. Thus, for high-risk patients with nonspecific symptoms and colonic thickening evident on imaging, a biopsy of the lesion is crucial. Continuous monitoring of the patient's response to treatment is essential, as a lack of symptom improvement or reduction in lesion size may indicate an underlying serious pathology, such as carcinoma. A study by Falagas *et al.*, highlights the coexistence of TB and malignancy [11]. There is a possibility of cancer developing in the context of previous TB infections, as well as the concurrent occurrence of TB and malignancy in the same patient. This phenomenon can be attributed to chronic TB infection causing an imbalance between tissue damage and repair mechanisms, which may predispose to malignant transformation [12]. This process is thought to involve the production of nitric oxide, oxygen-free radicals, and increased levels of B-cell lymphoma 2 (BCL-2), enhancing anti-apoptotic activity. Therefore, patient responses warrant close observation.

Abdominal TB accounts for 15-20% of all extrapulmonary TB cases and 3% of overall TB cases [13][14]. Radiologic imaging findings indicative of abdominal TB are nonspecific. Imaging may reveal narrowing or an apple-core sign on barium colonography, as well as ascites, omental thickening, abdominal lymphadenopathy, and bowel wall thickening on CT. Nevertheless, these findings alone are insufficient for diagnosis and are not specific to the disease. Colonoscopy plays a vital role in diagnosing ileocecal and colon TB, with findings such as ulceration, nodular appearance, cecal mass, and deformation of the ileocecal valve being common. All these findings can be consistent with malignancy, making it challenging to differentiate between malignancy and abdominal TB clinically and radiologically. The culture of biopsy specimens remains the gold standard for diagnosing intestinal TB but often requires 4-6 weeks for results [15][16]. Furthermore, studies indicate that positive cultures can be obtained in only one-third or fewer of patients with colonic TB [17][18]. While advanced techniques like polymerase chain reaction and Gene X-pert show promise for diagnosing pulmonary TB, their sensitivity and specificity for detecting abdominal TB from ascitic fluid samples are low compared to those for sputum [19][20] and cerebrospinal fluid [21]. The combined yield from biopsy and acid-fast bacillus (AFB) smear has improved from 75% in earlier studies to 92% in more recent research [22]. Diagnostic laparoscopy is emerging as a valuable tool; however, the risk of misdiagnosis persists

CONCLUSION

In summary, it is important to consider malignancy as a potential diagnosis for patients without a history of pulmonary TB who present with non-specific gastrointestinal symptoms. We assert that in high tuberculosis prevalence settings like India, suspicion of malignancy should also be maintained, and advanced testing should be conducted when clinical and radiological findings do not differentiate between the two conditions.

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