CASE REPORT

Intestinal Tuberculosis — A Master of Deception: A Case Report

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ABSTRACT

Intestinal tuberculosis is one of the rarest types of extrapulmonary tuberculosis. Diagnostically challenging due to the requirement of time-consuming tissue culture and similarities with other intestinal pathologies on imaging. Intestinal Tuberculosis (ITB) is a rare disease worldwide with high prevalence in the Southeast Asian region. This case report shows a 27-year-old, previously positive tuberculin test, male with mild features of ITB with a lump at the right lower quadrant of the abdomen for a duration of 5 months. Due to its insidious nature, ITB is difficult to differentiate from Crohn disease and colon carcinoma. The perplexity of diagnosis and complications that could arise due to a delayed diagnosis are often life-threatening and lethal. A holistic diagnostic approach was demonstrated in this case with colonoscopy and histopathology findings corresponding to the diagnosis of ITB. As a result, the patient gave a positive recovery remark on follow-up visits.

Keywords: Tuberculosis, Intestinal TB, Crohn's Disease

International Journal of Human and Health Sciences Vol. 08 No. 04 October'24

DOI: http://dx.doi.org/10.31344/ijhhs.v8i4.737

INTRODUCTION

Tuberculosis (TB) is a communicable, preventable and curable disease. According to World Health Organization (WHO), incidence of TB was approximately 10 million in 2022, with higher prevalence among males. Cumulative trend was seen in the mortality rate with 1.6 million in 2021. South-East Asia has the highest disease burden, encompassing 45% cases worldwide.[1] The incidence and mortality rate of TB in Bangladesh stands at 221 and 24 per 100,000 population per annum respectively.[2] TB continues to be a major public health concern globally.

TB primarily affects the pulmonary system along with extrapulmonary organs like lymph nodes, bones, meninges, gastrointestinal tracts, and genitourinary system. Extrapulmonary tuberculosis (ETB) accounts for 20-25% TB cases and is prevalent in TB endemic regions. Despite tubercular lymphadenitis and tubercular meningitis being common, Intestinal TB accounts for 2% TB cases globally with higher incidence in females.[3] Transmission of Mycobacterium species responsible for ITB occurs through ingestion of unpasteurized milk or sputum, or secondary to a hematogenous spread or lymphatic dissemination from primary pulmonary TB. Patients present mild symptoms due to disease's insidious nature. High rates of misdiagnosis make addressing ITB crucial.

CASE DESCRIPTION

We report a 27-year-old unmarried man from Narayangonj admitted to hospital with complaints of loose stool, loss of appetite and loss of weight for

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5 months. Our patient passed motion twice daily, with stool consistency described between type 6 and 7 from the Bristol stool chart. Symptoms were unassociated with fever, cough, vomiting, melena, dysuria and abdominal pain. Patient lacked any history of comorbid conditions, past surgeries, or familial history of carcinoma. He had a history of recent positive tuberculin tests with 25mm induration but no history of close-contact with any TB patient. He consumed a Bengali diet, negative of unpasteurized milk consumption. He has denied use of recreational drugs or having unprotected sex with multiple partners.

On examination, vital signs were normal. The patient was slightly ill-looking with a lean physique. The patient was alert, conscious and well oriented to time, place and person. On abdominal examination, abdomen was soft, nontender and nondistended. A 3 cm x 3cm mass was palpated at right lower quadrant. There were no organomegaly, and bowel sounds were present. Other systemic examinations were unremarkable.

CASE MANAGEMENT

On admission, patient was given intravenous nutrition, antispasmodic agent and regular diet. Routine investigations were ordered (Table 1). Post abdominal ultrasound showing mild ascites. Ascitic fluid was withdrawn for cytology, adenosine deaminase (ADA) and malignancy marker which had no findings. Colonoscopy with histopathology was done (Figure 1). During in-patient management, differentials were tuberculosis, crohn's disease (CD) and colon carcinoma. Abdominal Computed-Tomography (CT) scan (Figure 2) showed mild contrast enhancing circumferential wall thickening in right colon with hypodense area in centre of lumen narrowed at the ileocecal junction. Radiological impression inclined towards CD or colon carcinoma. Improvement was noted in bowel consistency post-administration of metronidazole and quinolone. Histopathology revealed ulceration with granulomatous inflammation with acute and chronic inflammatory cells infiltration, cryptitis and crypt abscess, consistent with TB. Patient was discharged with anti-TB medicine, pyridoxine hydrochloride and an antispasmodic. We followed up at the outpatient-department 1-month post-discharge with symptoms resolved and gained 3 kilograms.

Table 1: Laboratory Test Results

Test Name	Result	Reference Range
Haemoglobin	11.50 g/dL	13.00 - 17.00 g/dL
White Blood Cell	9.41 K / µL	4.00 - 10.00 K / µL
Neutrophil	73%	40-80%
Lymphocyte	20%	20-40%
Platelet	553 K / µL	150 - 410 K / µL
Packed Cell Volume	37.00%	38.90 - 50.90 %
Sodium	137.0 mmol/L	136 - 145 mmol/L
Potassium	4.5 mmol/L	3.5 - 5.2 mmol/L
Creatinine	0.82 mg/dL	0.6 - 1.3 mg/dl
Bilirubin Total	0.4 mg/dL	Adult 0.2 - 1.1 mg/dl
Albumin	2.2 g/dL	3.7 - 5.3 g/dl
Alkaline Phosphatase	91 U/L	Adult: 30 - 120 IU/L
Prothrombin time	16.5 s	11 - 13.5 s
INR*	1.37	0.8 - 1.1
TSH†	1.02mIU/L	> 20 Y :0.5 - 4.7 mIU/L
HBsAg (ELISA)	Negative	

**International Normalised Ratio; †Thyroid Stimulating Hormone*

DISCUSSION

Overlapping and non-specific nature of ITB stirs diagnostic dilemma. This case reports a gentleman with complaints of loose stool, loss of appetite and loss of weight for 5 months. Abdominal discomfort (80.4%), weight loss (74.65%), appetite loss (62.67%), fever (40.5%), loose stools (16.44%), and altered bowel habits (25.35%) are symptoms of ITB cases.[4] Risk factors of TB like age >40 years, HIV, Diabetes Mellitus, history of alcoholism or liver disease were probed.[5] 50% of HIV patients had risk of developing ETB.[4] Our patient denied abdominal pain and had no risk factors. A positive tuberculin test and high TB prevalence in patient's locality raised ITB suspicion. Distinguishing between CD and TB proved challenging due to clinical, endoscopic and radiological similarities. CD patients typically present with right lower quadrant lump, as seen in our patient. Colon carcinoma frequently occurs in elderly patients, smokers or patients with positive cancer family history and complaints of melena, none in our case.

Affected intestinal site dictates symptomatic presentation. Commonest site for ITB is ileocecal

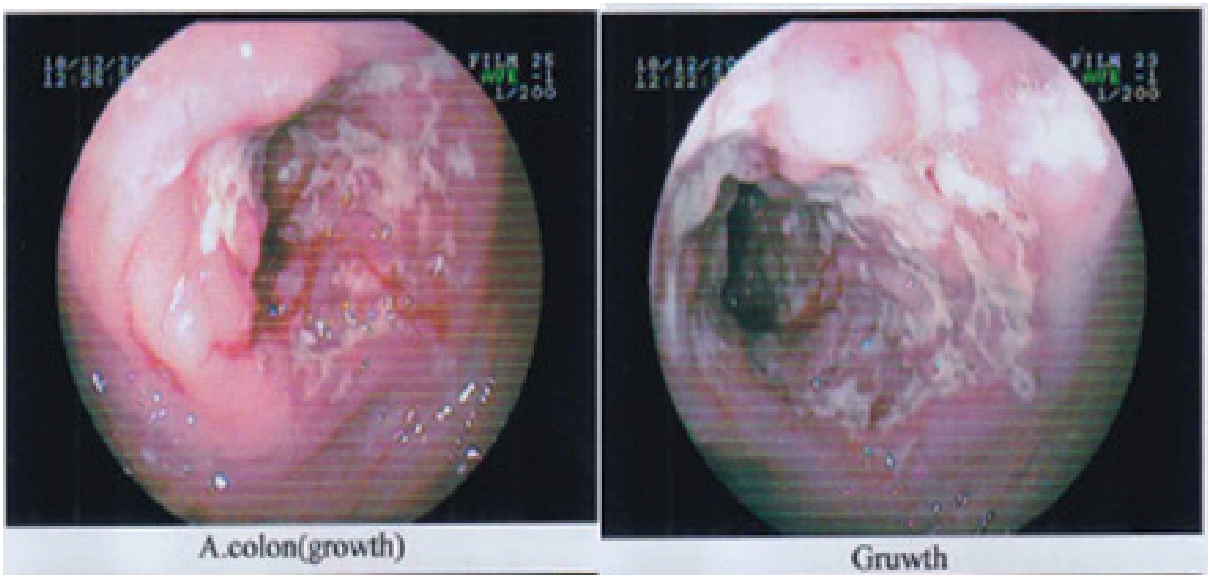

Figure 1: Colonoscopy of the ascending colon depicting annular ulcerated growth 100 cm from the anal verge.

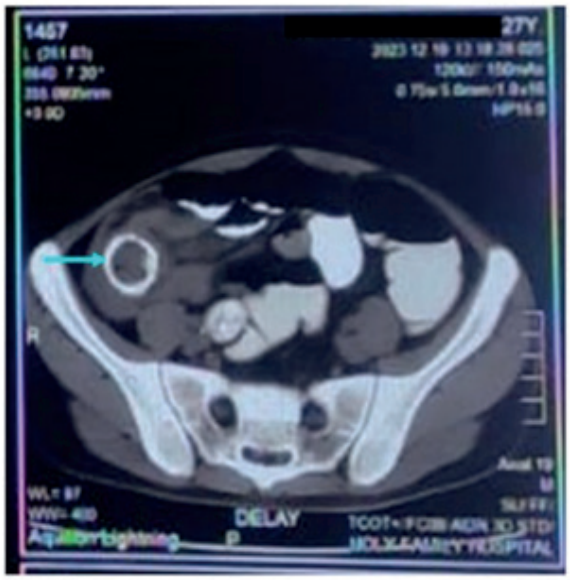

Figure 2: CT Scan of the abdomen showing ring-enhancement of the colon post contrast

region contributing to 75% cases. CD generally afflicts terminal ileum and colon. Unlike TB, CD causes extraintestinal features like uveitis, enteropathic arthritis, pyoderma gangrenosum or erythema nodosum in 20-30% cases. 15-25% of ITB cases reportedly have concomitant pulmonary TB.[6]

Initial laboratory results did not reveal anything significant apart from a high ESR value and hypoalbuminemia in our case. Ascitic fluid ADA, a marker of tuberculosis, was insignificant. Colonoscopy revealed annular segments with transverse superficial ulcers in the ascending colon in our patient. Skip lesions with longitudinal ulcers are pathognomonic of CD. For colon carcinoma diagnosis, polyp or suspected infiltrating or non-infiltrating lesions are identified. Histopathology results show caseating granuloma in ITB and non-caseating granuloma in CD.[3] Abdominal contrast CT done revealed ascending colon wall thickening and ileocecal junction narrowing. Biopsy results in our case showed histopathological structures consistent with ITB. Only 30% of the biopsies show acid-fast bacilli with Ziehl- Nielsen stain. Due to low sensitivity of 40-75%, real time colonic tissue PCR assay was not done.[7] Rapid initiation of anti-TB therapy prior to receiving results of biopsy culture, the gold standard test for the confirmatory diagnosis, is essential as culture requires 3-8 weeks for conclusive evidence.[7] Delayed diagnosis may result in severe complications like bowel obstruction, fistula formation, perforation, abscess etc.[6] An impending bowel obstruction, seen in our case as shown (Figure 3), required prompt action.

Due to mild symptoms and improved bowel habit post empirical antibiotics; patient was discharged with anti-TB medication for 6 months in-line with local guidelines. Surgical intervention is reserved for severe complications. Patient was counselled regarding adverse effects and importance of anti-TB medication for prognosis.

CONCLUSION

ITB is considered to be a master of deception due to disease mimicry. This case highlights atypical

Figure 3: X-Ray of the patient with dilated bowel loops

TB presentation with good prognosis provided rapidly diagnosed. As TB cases are still rising in Southeast Asia, further studies are crucial for swift disease management.

Conflict of Interest: The authors unanimously have no conflict of interest.

Source of Fund: This case report received no external funding.

Ethical Clearance: Patient confidentiality and anonymity were maintained. Informed consent was obtained from the patient for publishing case report and relevant photos.

Authors' Contribution: Conception and design: RI., SS; Acquisition, analysis, and interpretation of data: RI, SS; Manuscript drafting, revision, final submission: RI, TH, SS, MIA, MRH.

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