



# Colonic Tuberculosis Mimicking Colonic Cancer a Multidisciplinary Diagnosis

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## Abstract

Colonic tuberculosis is rare and can be mistaken for malignancy. It presents with vague clinical and radiological picture making the diagnosis challenging for the clinicians, this case illustrates a 40-year-old man who presented with crampy lower abdominal pain and diagnosed as a colonic cancer both on imaging and clinically which later found to have colonic tuberculosis on a colectomy histopathologic sample.

**Keywords:** Colon; Tuberculosis; Carcinoma

## Introduction

Gastrointestinal tuberculosis accounts for 1% to 3% of all TB cases worldwide with high incidence in developing countries [1,2]. It can enter the GI tract through hematogenous route from active pulmonary TB, as a primary infection, through contiguous spread or through lymphatic channels and occur in any part of gastrointestinal tract with preference to the ileocecal region [3]. It typically presents with vague clinical, radiological and histopathologic findings that resembles inflammatory bowel disease and malignancy thus making the diagnosis challenging [4]. Gastrointestinal tuberculosis responds well to standard anti-tuberculous drugs and surgery is done for patients that have complications like strictures or obstruction which does not respond to medical therapy [1,5,6].

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## Case Presentation

A 40 years old male presented with crampy lower abdominal pain of 3 years duration which is associated with intermittent watery diarrhea, loss of appetite and significant weight loss.

### Physical exam

General appearance - he was emaciated with stable vital signs. There was conjunctival pallor and mild tenderness on the right lower quadrant of the abdomen.

### Investigation

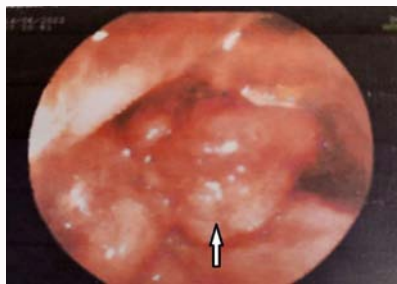
Complete blood count revealed mild anemia with Hemoglobin level of 10 g/dl.

Abdominal ultrasound showed intermediate segment ascending colon and hepatic flexure asymmetric circumferential nodular wall thickening with lost gut stratification with multiple paracolic and mesenteric enlarged lymph nodes and was highly suggestive of colonic cancer.

Colonoscopy revealed circumferential mass noted at 68 cm from anal verge the scope could not negotiate across the mass with the conclusion of? Colonic cancer colonoscopic biopsy was done and showed chronic nonspecific inflammation with no features of malignancy, with differential diagnosis of inflammatory bowel disease and Tuberculosis (Figure 1).

Despite negative colonoscopic biopsies, a provisional diagnosis of right colonic cancer was made and he was prepared for extended right hemicolectomy.

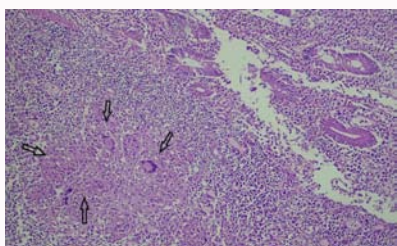
On laparotomy there was a long segment right colon mass extending from mid-ascending colon up to hepatic flexure and multiple palpable mesenteric lymph nodes with minimal ascetic fluid. Hence, a right extended right hemicolectomy was performed with ileotransverse anastomosis and the specimen was sent for pathology for examination.



**Figure 1:** Constricting polypoid intraluminal mass (white arrow).



**Figure 2:** 28 cm long right hemicolectomy specimen with numerous pedunculated polyps (shorter arrow) and 3 cm x 1 cm constricting mass on mid ascending colon with thickened bowel wall (longer arrow).



**Figure 3:** Granulomas and Langhans giant cells (arrows), mononuclear inflammatory cells and ulcerated colonic mucosa.

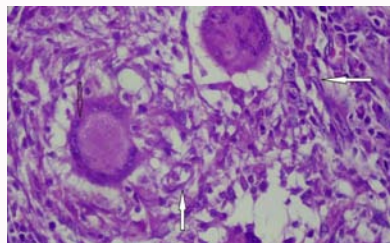
### Histopathology evaluation

On gross examination there was a right hemicolectomy specimen measuring 28 cm long with numerous pedunculated polyps largest measuring 4 cm and constricting 3 cm x 1 cm mass on mid ascending colon with thickened bowel wall and 28 lymph nodes were identified (Figure 2).

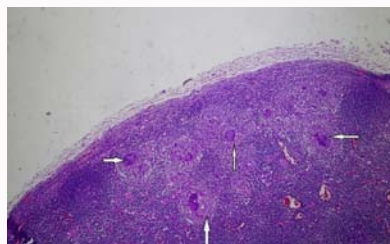
Microscopic evaluation of the thickened bowel wall and polyps showed polypoid colonic tissues containing glands lined by bland columnar epithelium with sub epithelial mononuclear inflammatory infiltrates including lymphocytes and plasma cells, numerous granulomas, Langhans type giant cells and caseous necrosis (Figure 3, 4). Sections from the lymph nodes showed capsulated lymphoid tissue containing lymphoid follicles numerous granulomas, Langhans type giant cells and caseous necrosis Figure 5. There were no features of malignancy that were seen.

### Treatment

With the diagnosis of Disseminated Tuberculosis to the colon and lymph node he was started on Rifampicin (10 mg/kg/d), Isoniazid (5 mg/kg/d), Pyrazinamide (30 mg/kg/d) and Ethambutol (15 mg/kg/d) he is currently on follow-up and is responding to the anti TB treatment.



**Figure 4:** H&E -high power view Langhans giant cells and epithelioid cells (white arrow) on the intestinal wall.



**Figure 5:** H&E -low power view of a Lymph node with multiple granulomas and giant cells (white arrow).

### Discussion

Gastrointestinal tuberculosis is a relatively uncommon form of TB with isolated involvement of colon in 10.8% of cases [7]. It is the major health problem in the developing countries with the rising numbers in immunocompromised patients and patients with HIV virus [3]. TB is also a concern in patients receiving biological agents for conditions like inflammatory bowel disease and rheumatoid arthritis. It commonly presents as chronic abdominal pain along with night sweats, diarrhea, and fatigue and can resemble variety of other diseases making the diagnosis difficult. Its diagnosis is usually made by combining clinical features, radiological, tissue AFP staining and histopathological examinations [1,3].

Microbiological examination to diagnose intestinal tuberculosis includes AFB and culture [8,9]. When they are done on stool or sputum, they yield positive results in approximately 50% of the time, and in intestinal TB biopsies AFB and MTB culture positivity are only found on 17% and 29% of the cases respectively in one large study [8] PCR for *M. tuberculosis* from biopsies also provides rapid diagnosis of TB and positive predictive values up to 100% have been reported [10].

Radiologic imaging plays an important part in diagnosis with most common feature being mural thickening in 93% of the cases. Other features include mesenteric adenopathy, inflammatory pseudopolyps, deformity of ileocecal Valve and Stenosis [3,11]. Circumferential ulcers surrounded by inflamed mucosa are common colonoscopic features [11,12].

The typical histopathologic findings include confluent large granulomas and Langhans giant cells with caseating necrosis. In 55.5% Epithelioid cell granulomas were seen in the mucosal layer of the bowel wall and in 44.5% cases, the granulomas were present deep to the mucosa with lymphoplasmacytic inflammation. Caseation may only be seen in lymph nodes or it may be totally absent in patients who have received anti-tuberculosis in the past [1,13].

The main stay of treatment of gastrointestinal tuberculosis is

anti-microbial therapy (Rifampicin, Isoniazid, pyrazinamide and ethambutol for 2 months and Rifampicin and isoniazid for 4 months) [1,6]. Surgery is essentially reserved for those with acute surgical complications including perforation, massive bleeding, complete obstruction, or obstruction not responding to medical management [5].

This case illustrates not only a case of colonic tuberculosis but also a case mimicking a colonic cancer. It is essential to entertain a broad differential diagnosis when evaluating a patient with a colonic mass by paying a close attention to patient demographics and risk factors. Differentiating between tuberculosis and malignancy can be difficult taking into account that both entities may present themselves as a circumferential nodular wall thickening and multiple lymphadenopathies on imaging. Although in our case colonoscopic appearance was suggestive of a carcinoma, histology showed chronic inflammatory changes on colonoscopy biopsy's and caseating epithelioid granulomas on colectomy sample, a pattern consistent with colonic Tuberculosis. It is important to maintain high index of clinical suspicion for Gastrointestinal Tuberculosis in developing countries and do biopsies to reach to early diagnosis and prevent unnecessary surgical intervention thus making the diagnosis multidisciplinary.

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