

## Case Series of Colonic Tuberculosis in Northern Saskatchewan and Subsequent Medical Management

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### Abstract

Colonic tuberculosis [TB] is a rare entity even in countries with an endemic TB problem. While the current incidence of pulmonary TB is rising in the developed world the incidence of colonic TB has remained extremely rare. The incidence of TB in Canada has been documented at 26 per 100 000 population for Indigenous Canadians and 17 per 100 000 for immigrant Canadians from developing countries. This is in stark contrast to the 4.7 per 100 000 population for the rest of Canada which remains one of the lowest in the world. Manitoba remains the province at highest risk. Risk factors included immunocompromised patients such as HIV patients, geriatric population and intravenous drug users. Colonic TB is rarely diagnosed preoperatively and usually manifests as a surgical complication such as perforation or obstruction. Surgery is often limited to managing the complications of colonic disease. We would like to present our case series of two colonic TB patients, their endoscopic findings and their subsequent successful medical management.

**Keywords:** *Intestinal Tuberculosis; Colonic Tuberculosis; Extra Pulmonary Tuberculosis*

### Introduction

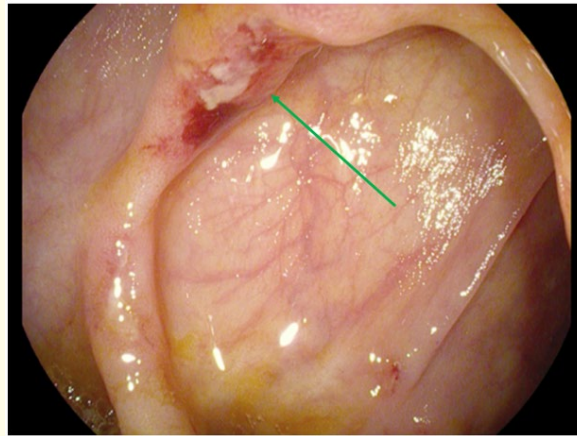
Gastrointestinal tuberculosis [TB] is a rare condition in the developed world with an estimated incidence of 1-3 percent of all TB cases [1]. Isolated colonic TB is even more rare making up 2 - 3 percent of all gastrointestinal cases. Diagnosis is often difficult due to its ability to mimic inflammatory bowel disease or colonic malignancy [2].

Immunocompromised patients are particularly susceptible to colonic TB, though in the absence of a pulmonary source, the aetiology remains nebulous. There is no documented evidence of pulmonary TB in sixty-six percent of the cases of colonic TB which seems to disprove the theory of haematogenous spread [2]. A common perception for the aetiology is the ingestion of the TB *Bacillus* from either the infected sputum or infected milk products that contain *Mycobacterium bovis* culture [3]. It affects the transverse colon, rectum, and ascending colon in order of frequency when outside the ileocecal area [4]. Treatment is often delayed given the difficulty in obtaining a definite diagnosis. The use of anti-inflammatory agents such as steroids in Crohn's disease may cause rapid disease dissemination if colonic TB is not part of the differential diagnosis [2]. We present our case series of two patients with different presentations of colonic TB and their subsequent management and resolution of disease. Neither patient had any evidence of an immunocompromised state nor

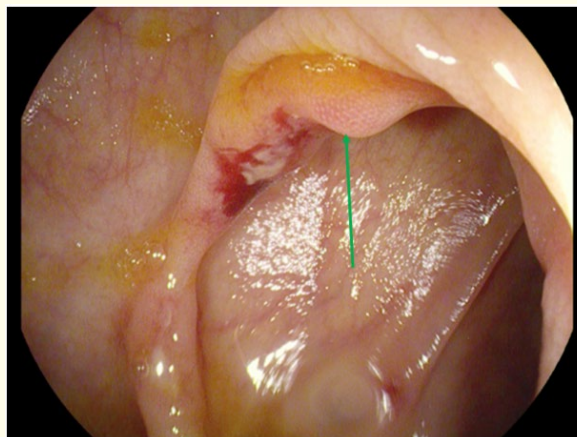
any previous documented history of pulmonary TB. Both patients completed their course of treatment with successful resolution of the colonic pathology as evidenced on surveillance colonoscopy.

### Patient 1

A 39-year-old patient was referred for a colonoscopy following a positive faecal immunochemical [FIT] test. His colonoscopy revealed an ulcer at the splenic flexure that was biopsied (Figure 1.1 and 1.2). The pathological diagnosis confirmed *Mycobacterium tuberculosis* [TB]. Subsequent computerised tomography [CT] scan of his chest and abdomen was normal with no other obvious tubercles or lymphadenopathy. There were no suspicious lesions in the liver or the lungs. There was a calcified granuloma in his left lung which may have been the source of his colonic TB (Figure 1.3). He was a cook at a restaurant and had no personal or family history of TB. He had no family history of colon cancer or inflammatory bowel disease. He was a Filipino immigrant and had been in Canada for over five years. He then completed a year's treatment of TB medication through infectious disease and his repeat colonoscopy showed resolution of the ulcer at the splenic flexure (Figure 1.4).



**Figure 1.1:** Colonic ulcer at the splenic flexure (green arrow).



**Figure 1.2:** Raised ulcer with everted edges (green arrow).

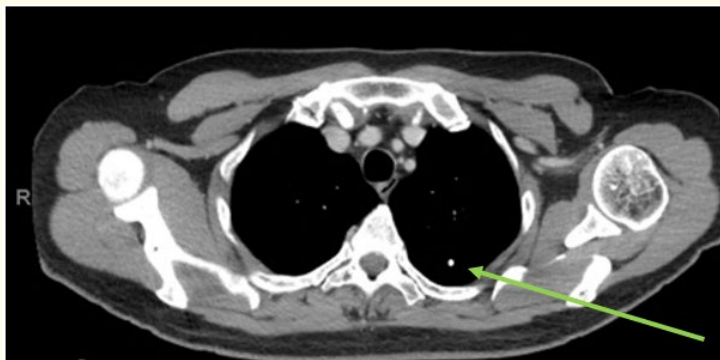


Figure 1.3: Calcified granuloma in the left lung on CT scan axial view (green arrow).

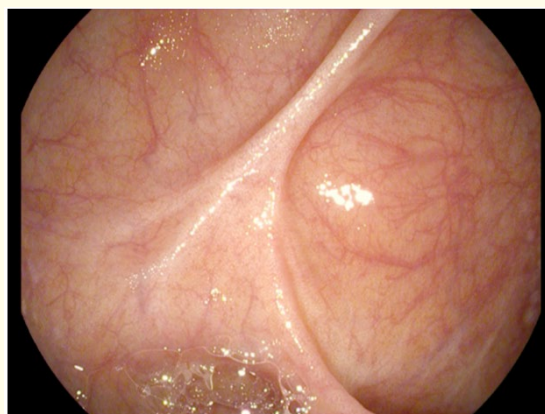
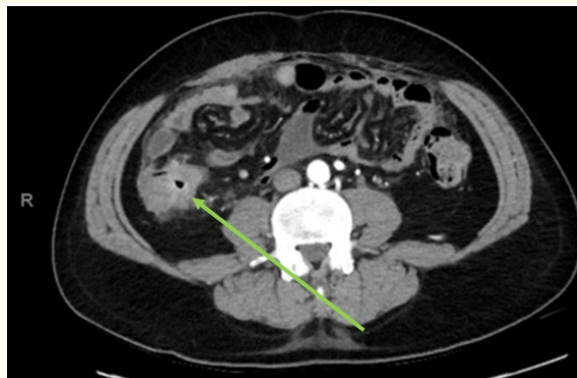


Figure 1.4: Healed ulcer, post TB treatment colonoscopy.

### Patient 2

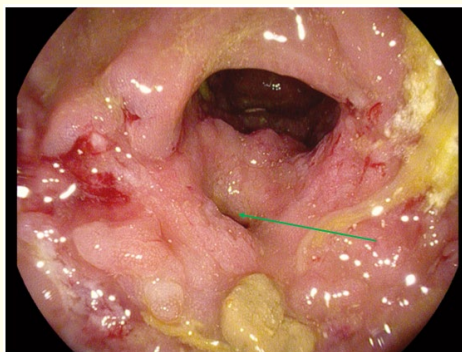
A 43-year-old man was referred to surgery for an incidental finding of a caecal mass on CT scan (Figure 2.1 and 2.2). The CT scan was ordered as part of his workup for chronic constipation. He lived in a care home due to unilateral paralysis from a previous stroke. He was an immigrant from the Philippines and had been living in Canada for more than a decade. He had no personal or family history of bowel cancer or inflammatory bowel disease. He did have a change in his bowel habits with occasional blood as well. He also complained of unintentional weight loss. His abdominal examination was normal with no palpable masses or inguinal lymph nodes. Rectal examination was normal. He was subsequently booked for a colonoscopy, and a large inflammatory mass was noted in the caecum and biopsied (Figure 2.3 and 2.4). His carcino embryonic antigen and haemoglobin levels were within normal parameters. Pathology diagnosed *Mycobacterium tuberculosis* [TB]. He was subsequently referred to an infectious disease specialist and underwent a year of TB treatment. During this time, he also had a chest roentgenogram which was reported as normal. He had no known personal or close contacts for TB. A second colonoscopy a year later showed complete resolution of the caecal mass (Figure 2.5). The patient made a complete recovery and is now in remission.



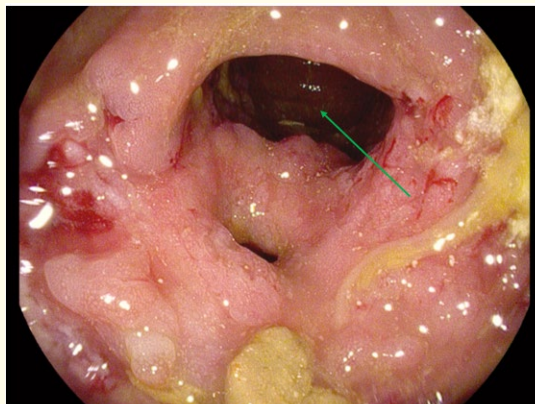
**Figure 2.1:** Inflammatory caecal mass on CT scan axial view (green arrow).



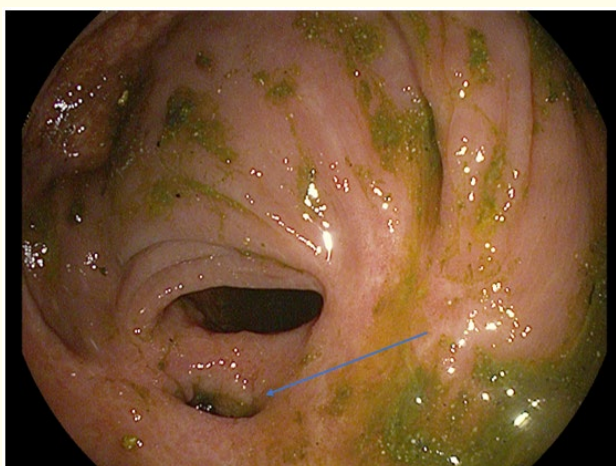
**Figure 2.2:** CT scan coronal view showing an inflamed narrowed terminal ileum (green arrow).



**Figure 2.3:** Inflammatory caecal mass with a narrowed ileocaecal valve (green arrow).



**Figure 2.4:** Ileocaecal mass with normal distal caecum (green arrow). The ileocaecal valve could not be intubated.



**Figure 2.5:** Colonoscopy post TB treatment showing the resolution of the colonic mass. The ileocecal valve could now be intubated (blue arrow).

### Discussion

Colonic tuberculosis accounts for 3 - 4 percent of all tuberculosis cases of the gastrointestinal tract [5]. Pathophysiology involves ingestion of infected sputum, haematogenous spread, spread from adjacent organs or contaminated food. Risk factors include geriatric patients, HIV patients, diabetes mellitus, and an increased use of immunosuppressants in patients with inflammatory bowel disease or transplant patients. In addition, tuberculosis is strongly gaining traction among patients with protracted chronic diseases, such as AIDS patients and injectable drug users [5]. Colonic tuberculosis can also develop from bovine tuberculosis, usually in unpasteurised milk. In developed countries, intestinal TB occurs when patients with pulmonary TB ingest sputum. *Mycobacterium tuberculosis* enters the lymphoid aggregates of the colonic mucosa where they undergo granulomatous inflammation, leading to ulceration of the colonic mucosa, as shown in the endoscopic examination of the first patient (Figure 1.1 and 1.2) [6].

In a patient with a colonic ulcer, a differential diagnosis of tuberculosis and Crohn's disease must be carried out [6]. Diagnosis of colonic TB remains a challenge. Biopsy and serology may be employed to elucidate a diagnosis. Colonic tuberculosis is one of the primary forms of abdominal tuberculosis, 75% of which occurs in the ileocecal area due to increased physiological stasis, fluid and electrolyte absorption, impaired digestive function, and an increased lymphoid presence [6]. Macroscopically, colonic tuberculosis is radiologically evident in a variety of presentations. This includes fibrosis, stricture of the intestinal wall, aggregation of mesenteric lymph nodes, omental thickening, peritoneal tubercles and transverse ulcers. These clinical features are difficult to distinguish radiologically or endoscopically from Crohn's disease [7]. Colonoscopy has an important role to play in determining the differential diagnosis for colonic TB. It allows for colonic visualisation and biopsy of the lesion to exclude inflammatory bowel disease or a malignancy. This is important in inflammatory bowel disease as the use of corticosteroids and anti-inflammatory treatment such as 5-amino salicylic acid may enhance systemic dissemination of colonic TB [8]. Colonic obstruction is the commonest complication. This is due to long or multiple strictures which often respond poorly to medical treatment. Colonic cicatrization due to medical therapy is also thought to play a role in mechanical obstruction. 20 - 40 percent of abdominal TB patients present with an acute abdomen requiring surgical intervention [8]. The treatment regimen usually lasts six months and consists of the standard four drug regimen. Rifampicin, isoniazid, pyrazinamide and ethambutol is given over two months, followed by isoniazid and rifampicin for four additional months. This can be extended up to a year in immunocompromised patients [9].

### Conclusion

We present our case series of colonic TB and their subsequent management, following successful medical treatment and remission. We believe this to be the first case series in northern Saskatchewan, Canada.

### Conflict of Interest

The authors do not have any conflict of interest to report.

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### Ethical Approval

Ethical approval was obtained from both patients prior to publication.

### Bibliography

1. Rafael MA, *et al.* "Gastrointestinal tuberculosis mimicking crohn's disease". *GE - Portuguese Journal of Gastroenterology* 27.4 (2020): 278-282.
2. Kumar A, *et al.* "Colonic tuberculosis masquerading as colon cancer". *Journal of Surgical Case Reports* 5 (2012): 10.
3. Djaharuddin I, *et al.* "Intestinal tuberculosis: Case series of three patients". *Respiratory Medicine Case Reports* 29 (2019): 100942.
4. Nagi B, *et al.* "Colorectal tuberculosis". *European Radiology* 13.8 (2003): 1907-1912.
5. Chaudhary P, *et al.* "A retrospective cohort study of coexistence of carcinoma and tuberculosis of colon: 12-year experience". *Indian Journal of Surgical Oncology* 12.1 (2021): 61-66.
6. Wei-Chen L, *et al.* "Endoscopic features and treatment response have better prediction rate than clinical symptoms/signs in distinguishing Crohn's disease and intestinal tuberculosis". *Advances in Digestive Medicine* 4 (2017): 121-127.
7. Limsrivilai J and Pausawasdi N. "Intestinal tuberculosis or Crohn's disease: a review of the diagnostic models designed to differentiate between these two gastrointestinal diseases". *Intestinal Research* 19.1 (2021): 21-32.

8. Weledji EP and Pokam BT. "Abdominal tuberculosis: Is there a role for surgery?" *World Journal of Gastrointestinal Surgery* 9.8 (2017): 174-181.
9. Ait Ali H., *et al.* "Sigmoid colon tuberculosis revealed by a perforation and peritonitis". *Cureus* 12.12 (2020): e12272.

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