Case Report

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Abdominal Tuberculosis Presenting as Bowel Obstruction in a Young HIV-Negative Male: A Case Report

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ABSTRACT

Extra-pulmonary tuberculosis (TB) in the form of gastrointestinal disease is a common entity that goes undiagnosed. TB can affect any part of the gastro-intestinal (GI) tract, including the anus, peritoneum, and hepato-biliary system. The clinical manifestations of abdominal tuberculosis are non-specific and mimic various GI disorders and cause delays in diagnosis and management, 'the great mimicker'.

We share a case of abdominal tuberculosis that was treated for a long time as peptic ulceration, and the patient presented terminally ill with features of bowel obstruction. This is to raise awareness among clinicians, especially those practising in TB-endemic areas, that they should have a high index of suspicion for abdominal TB in both HIV-infected and non-HIV patients. These patients may present with vague symptoms, and it is usually challenging to come to the diagnosis.

***Keywords:** Abdominal tuberculosis; abdominal pain; anti-tubercular therapy; case report.*

Introduction

Extra-pulmonary tuberculosis in the form of gastrointestinal disease is a common entity that goes undiagnosed with a high burden [1]. Abdominal tuberculosis (TB) is the sixth most common form of extra-pulmonary site of infection after lymphatic, genitourinary, bone and joint, miliary, and meningeal TB, with a rising incidence in recent years. TB can affect any part of the gastro-intestinal (GI) tract, including the anus, peritoneum, and hepato-biliary system. The clinical manifestations of abdominal tuberculosis are non-specific and mimic various GI disorders, and this causes delays in diagnosis and management, 'the great mimicker' [2,6]. Other authors have suggested that abdominal TB should be considered in all patients with ascites [7], that PCR on ascitic fluid obtained by ultrasound-guided fine needle aspiration is a reliable method for its diagnosis and should at least be attempted before surgical intervention [5]. The incidence and severity of abdominal tuberculosis may increase in populations with high prevalence of HIV infection.

The most common site of involvement of gastrointestinal tuberculosis is the ileocaecal region. Ileocaecal and small bowel tuberculosis presents with a palpable mass in the right lower quadrant and/or complications of obstruction, perforation, or malabsorption, especially in the presence of stricture [3,4]. TB of the abdomen may occur via reactivation of latent TB infection or by ingestion of tuberculous mycobacteria. In the setting of active pulmonary TB or miliary TB, abdominal involvement may develop via haematogenous spread, via contiguous spread of TB from adjacent organs (such as retrograde spread from the fallopian tubes), or via spread through lymphatic channels [5].

The gross pathology of TB abdomen is characterized by transverse ulcers, fibrosis, thickening, and strictures of the bowel wall, enlarged and matted mesenteric lymph nodes, omental thickening, and peritoneal tubercles [4]. Peritoneal tuberculosis occurs in three forms: wet type with ascites, dry type with adhesions, and fibrotic type with omental thickening and loculated ascites. Rare clinical presentations include dysphagia, odynophagia, and a mid-oesophageal ulcer due to oesophageal tuberculosis; dyspepsia and gastric outlet obstruction due to gastroduodenal tuberculosis; lower abdominal pain and haematochezia due to colonic tuberculosis; and annular rectal stricture and multiple perianal fistulae due to rectal and anal involvement [8].

Abdominal TB is a diagnostic challenge, particularly when pulmonary TB is absent. It may mimic many other abdominal diseases, both clinically and radiologically. An early, correct diagnosis is important in order to ensure proper treatment and a favourable outcome. Modern imaging is a cornerstone in the early diagnosis of abdominal TB and may prevent unnecessary morbidity and mortality. Generally, CT scan appears to be the imaging modality of choice in the detection and assessment of abdominal tuberculosis. Endoscopic Ultrasound with fine needle aspiration (EUS-FNAC) is being promoted [9]. Barium studies remain superior for demonstrating mucosal intestinal lesions. Ultrasound is useful for describing specific findings, such as retroperitoneal or mesenteric lymphadenopathy, multiple splenic hypoechoic nodules, and ascites. Hepatic hyperechoic nodules, retroperitoneal abscess, and bowel wall thickening are also less frequently described [10,11]. Furthermore, sonography is also important for follow-up to monitor response to therapy. The diagnosis of abdominal TB should be considered in patients with suspicious findings [12]. As a last resort, celiotomy in the absence of laparoscopy should be considered as a diagnostic modality, and biopsies should be taken [9].

Colonoscopy with biopsy is a useful method for diagnosing colonic tuberculosis. Even in the absence of the classic histopathological features, a therapeutic trial may be indicated given the clinical and colonoscopy findings [13,14]. Management is with conventional antitubercular therapy. The regimen has been found to be as effective as the standard 12-month regimen in the treatment of all forms of abdominal tuberculosis [15]. The recommended surgical procedures today are conservative [4], largely targeted at complications [16].

We write on a case that came in as a diagnostic mystery and ended up undergoing operating care, which turned out to help in the diagnosis.

Case Presentation

History and examination

We attended to a 30-year-old male who presented with abdominal pain, dyspepsia and weight loss. He was treated as a case of peptic ulcer disease (PUD) several times over a duration of 4 months. The symptoms worsened as the abdominal pain became generalised, with on-and-off fever plus night sweats. He presented to surgeons with abdominal and perianal pain, with failure to open his bowels for two days, associated with abdominal distension. There was also a history of poor feeding, abdominal fullness and malaise associated with streaks of blood in stools, but no vomiting. The patient was HIV-negative, with no known comorbidities, and his only drug history was for PUD (Amoxicillin, Metronidazole and long-term Omeprazole). The patient was an ex-prisoner (2 years prior). No known personal or family history of cancers or TB.

We examined a cachexic male who was weak and pale, with generalised lymphadenopathy. The patient had a moderately distended abdomen with mild ascites and a palpable abdominal mass in the right lower quadrant, about 5 cm x 5 cm. There was no guarding and no rebound pain. Perianal examination revealed a fissure at 8 o'clock and a palpable nodular anterior rectal mass.

Investigations

Due to limited resources, we only managed to do X-rays of the chest and abdomen, an abdominal ultrasound and some blood tests. Looking at how the patient presented and not being able to do much as a hospital, the patient was counselled for a laparotomy, to which he consented. The primary purpose was to relieve the obstruction, which we thought was likely related to the palpable mass. Our differential diagnosis was intestinal obstruction secondary to an abdominal mass, to rule out an appendicular mass in an HIV-negative patient.

Chest radiology did not reveal any abnormality. Ultrasound showed an irregular abdominal mass with increased bowel gas.

Intra-Operative Findings

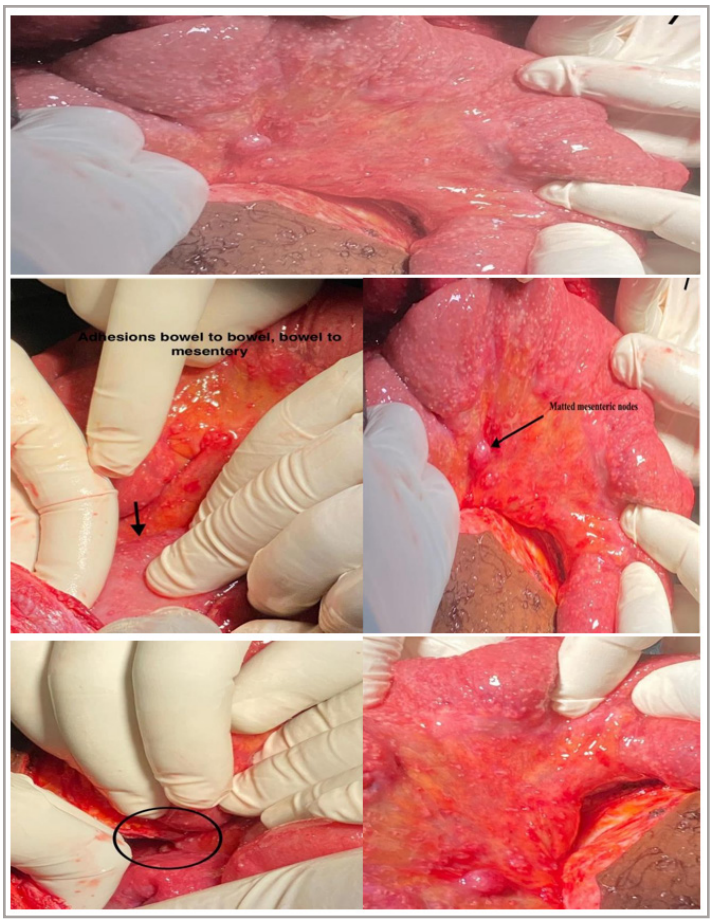


Figure 1: *Intraoperative images showing multiple serosal deposits, bowel-to-bowel and bowel-to-mesentery adhesions, and mesenteric nodules.*

- Oedematous bowels (from the stomach to the rectum), including the urinary bladder and mesentery.
- Multiple whitish nodular lesions on the bowels, mesentery and peritoneum.
- Other lymph nodes could not be adequately assessed due to extensive edema, fibrosis and adhesions.
- Several hard, whitish lesions on the ileum (formed an inflammatory mass), colon and rectum (palpable per rectum).

We treated the patient as a possible case of carcinomatosis peritonei, to rule out abdominal tuberculosis, as we waited for histopathology.

Management

» Collected a biopsy on the small bowel mesenteric border and closed the abdomen layer by layer.

» Kept the patient nil per os for two days; feeds were initiated slowly after a reduction in nasogastric secretions.

We started anti-tubercular therapy on the third postoperative day as follows:

Table 1: Anti-tubercular therapy regimen

Medication	Initiation phase, once daily (2 months)	Continuation phase, once daily (3rd and 4th months)	5th to 9th months	Comment
Isoniazid	225 mg	225 mg	300 mg	The team agreed to treat for nine months.
Rifampicin	450 mg	450 mg	600 mg	
Pyrazinamide	1200 mg	-	-	
Ethambutol	825 mg	-	-	
Pyridoxine	25 mg	25 mg	25 mg	

Table 2: Outcomes and follow-up

Parameter	At initiation	Third month	Sixth month
Body weight (kg)	47	51.4	59.7
Creatinine (umol/L)	36.76	72.3	70.34
Urea (umol/L)	2.1	4.2	3.0
AST (u/L)	16.5	15.5	35.4
ALT (u/L)	26.8	26.1	30.0
Albumin	37.0	38.1	47.2
WBC (10^3/uL)	2.9	3.7	4.1
HB (g/dL)	7.8	11.7	15.1
Lymphocytes (%)	25.7	30.5	41.4
ESR	123	60	12
AFB	Negative	Negative	Negative
Gene-Xpert	MTB not detected	MTB not detected	MTB not detected

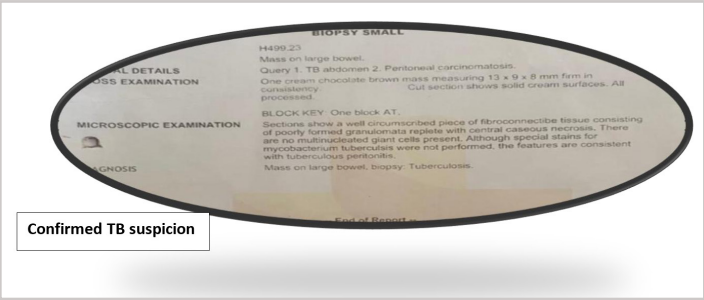


Figure 2: *Histopathology report showing features consistent with tuberculosis.*

Discussion

This patient presented as a diagnostic dilemma to the facility due to a lot of limitations in the system. His being young and HIV non-reactive made it difficult for anyone to suspect TB of the abdomen or later on malignancy. However, he had some of the commonest symptoms seen, such as weight loss, night sweats, fever and abdominal pain [17]. Sinkala et al. place emphasis on these clinical findings and the presence of ascites, hepatomegaly and intra-abdominal lymph nodes, though ultrasound scans did not detect lymphadenopathy [11]. Generalised lymphadenopathy was only noticed at the surgical review when the patient had features of bowel obstruction; otherwise, biopsy of the nodes would have been the preferred initial surgical procedure [6]. We did not conduct other TB-specific tests apart from LAM on urine due to the mostly non-availability of the tests. Acid-fast bacillus test, Gene-Xpert and microscopy on sputum were all not helpful. The findings of oedematous bowels, multiple bowel, peritoneal and mesenteric whitish tubercles, along with the nodes and adhesions, were all consistent with abdominal TB [18]. Histopathology results only came in about a month later. This is the average time it takes for histopathology results at our hospital. We had to use clinical judgement in order to initiate ATT.

The patient was initiated on ATT immediately when he was able to tolerate oral intake, before histopathology results were available, as early treatment is advocated [10]. It has been reported that abdominal symptoms may worsen during ATT therapy due to scarring or stricturing, which may require surgery [2]. Our patient did not require any further surgery as the symptoms resolved. The patient was followed up closely while on the standard four-drug regimen, consisting of isoniazid, rifampicin, pyrazinamide, and ethambutol. Liver function tests, full blood counts and renal assessments were done every two to three months. Peripheral neuropathy developed and was treated with pyridoxine for 6 months. He started gaining significant weight after three months of treatment. Cervical lymphadenopathy continued until the fifth month. The perianal fissure and abdominal pain completely resolved towards the end of the sixth month of treatment. Most treatment guidelines recommend a 6-month course of ATT for luminal TB. Prospective, randomised controlled studies, as well as a Cochrane systematic review, have confirmed good cure rates with six months of therapy instead of 9 months, with the added benefits of reduced cost and increased compliance [19]. However, when there is a concern for disseminated disease, which was the case here, with protracted abdominal pain, prolonged therapy may be needed [20]. Most of the other symptoms disappeared within four months of treatment, and the patient was back to his life routines.

We recommend a strong suspicion of abdominal TB in patients presenting with non-specific gastrointestinal symptoms. Lymph node biopsies should be done, and early histopathology results are advocated because early treatment is extremely important. The patient has fully recovered and is back to his usual life.

Conclusion

In a resource-limited facility and TB-endemic region, diagnosis of

abdominal TB may be extremely challenging. Clinical and sonographic findings should be correlated, and biopsy of hypertrophied lymph nodes should be encouraged. Abdominal pain, ascites, and weight loss should raise suspicion of abdominal TB in HIV-reactive or non-reactive individuals. If laparoscopy is available, it should be considered as a diagnostic modality, with laparotomy being the last resort. ATT is to be started as soon as possible, with a 6-month duration being adequate; however, in disseminated cases, a prolonged period of 9 to 12 months can be offered.

Compliance with Ethical Standards

Written informed consent was obtained from the patient for publication of this case report. No patient-identifying information has been included.

Author Contributions

All authors contributed to this case report. Dr. Richard Miti and Dr. Kalupa Bwalya served as the surgeon and assistant surgeon, respectively, while Dr. Dingani Moses Kabati also participated in the patient's treatment and follow-up. Dr. Kalupa Bwalya maintained the patient records, while Dr. Richard Miti compiled the manuscript.

Conflict of interest and Funding

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