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Intestinal Tuberculosis as an Early Manifestation of Extrapulmonary Tuberculosis in Patients with HIV : A Case Report

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Abstract
Intestinal tuberculosis as an early manifestation of extrapulmonary tuberculosis in patients with HIV infection is a rare condition but has a major impact on morbidity and mortality and often poses diagnostic challenges because the gastrointestinal symptoms are non-specific and resemble those of other diseases. This case report aims to describe the clinical presentation, diagnostic process, and management implications of intestinal tuberculosis as an early manifestation of TB–HIV coinfection, while emphasizing the importance of extrapulmonary tuberculosis screening in HIV patients. The method used was a descriptive case report of a 23-year-old male with main complaints of chronic abdominal pain, diarrhea, fever, weight loss, and lymphadenopathy, which was evaluated through anamnesis, physical examination, laboratory examination, imaging (ultrasound and abdominal CT scan), and Xpert MTB/RIF molecular examination, followed by a review of the narrative literature related to the TB–HIV relationship and EPTB screening strategy. The patient was eventually diagnosed with HIV co-infection, active pulmonary tuberculosis, intestinal tuberculosis, mesenteric lymphadenitis, and suspected peritoneal tuberculosis and showed clinical improvement after administration of standard antituberculosis therapy integrated with initiation of antiretroviral therapy. This case concludes that intestinal tuberculosis can be an early sign of HIV infection and disseminated EPTB; hence, there is a need for a high level of suspicion, systematic EPTB screening, the use of appropriate diagnostic modalities, and the integration of TB–HIV services to enable early diagnosis, timely management, and improved clinical outcomes in patients with immunosuppression.
Keywords: intestinal tuberculosis, HIV, extrapulmonary tuberculosis, TB screening

INTRODUCTION

Intestinal tuberculosis (TBI) as a manifestation of early extrapulmonary tuberculosis (EPTB) in patients with human immunodeficiency virus (HIV) infection is a relatively rare condition but has major clinical implications. In many cases, symptoms that appear are abdominal pain, changes in bowel habits, diarrhea, weight loss, ascites, and acute abdominal discomfort due to ileosecal involvement, so it is easy to misinterpret it as chronic inflammatory bowel disease or gastrointestinal malignancies, especially in areas with a high TB burden. Immunosuppression due to HIV facilitates the dissemination of Mycobacterium tuberculosis to extrapulmonary sites, with the gastrointestinal tract reported to be involved in a significant proportion of abdominal TB cases and about 1–3% of all TB cases, especially in immunocompromised individuals (R et al., 2017; Sheikhi et al., 2024).

In individuals with undiagnosed HIV, the clinical spectrum of ITB can be very atypical (Bowen et al., 2016; Stingone et al., 2020). Patients may present with non-specific abdominal pain, intestinal obstruction, perforation, gastrointestinal bleeding, or ileosecal and retroperitoneal masses on imaging, often without typical constitutional symptoms such as fever and weight loss in the early phases. Advanced stage HIV (CD4 <200 cells/μL) is associated

with an increased risk of EPTB, such as ITB, as well as a radiological picture that resembles neoplasms or other opportunistic infections, thereby exacerbating diagnostic challenges (Anaghashree, 2019). Case reports suggest that ileosecal perforation may be the first significant event to reveal HIV-positive status, illustrating the aggressiveness of extrapulmonary TB when it dominates the clinical picture (Chanda, 2015; Ju et al., 2025).

Pathophysiologically, intestinal involvement in TBI can occur through the ingestion of sputum containing tubercle bacilli, the dissemination of hematogen, or the ingestion of contaminated materials (Latham, 2024; W. Yang et al., 2022). The ileosecal area is the most frequent location due to the local physiological and immunological conditions that favor colonization (Agace & McCoy, 2017; Walker, 2017; K. Yang et al., 2025; Zhao et al., 2017). At the clinical level, ITB requires careful differentiation of Crohn's disease and malignancy through a combination of clinical suspicion, imaging (abdominal CT, ultrasound) showing thickening of the intestinal wall and lymphadenopathy, endoscopic examination with biopsy, as well as microbiological confirmation using cultures, acid-resistant bacilli staining, and molecular assays such as Xpert MTB/RIF. In HIV patients, the classic histopathological picture of a caseosa granuloma may be less prominent, while the sensitivity of the tuberculin test decreases, making reliance on molecular diagnostics and multimodal approaches increasingly important (Bolukbas et al., 2005; Rathi & Gambhire, 2016; Saha, 2024).

At the population level, the association of HIV and TB broadens the spectrum of clinical manifestations of TB and increases the proportion of EPTB, including disseminated forms (Anaghashree, 2019; Bowen et al., 2016; Grønningen, 2025; Qian et al., 2018). EPTB in HIV patients is a marker disease of AIDS, associated with higher morbidity and mortality rates, and is often diagnosed late due to non-specific symptoms (Murthy, 2017; K. Yang et al., 2025). The World Health Organization recommends routine TB screening of all individuals with HIV using the WHO four-symptom screen (cough, fever, night sweats, weight loss), followed by a rapid molecular test if the symptom screening is positive. In practice, this approach is more sensitive to pulmonary TB and can pass pure EPTB without respiratory symptoms, so a broader clinical evaluation is needed, such as imaging, endoscopy, histopathology, culture, Xpert MTB/RIF in extrapulmonary samples, as well as urine LAM antigen assays in patients with severe immunosuppression.

In terms of management, early detection of EPTB in HIV patients, especially when ITB becomes an early presentation, has a direct effect on the choice and timing of initiation of antituberculosis therapy and antiretroviral therapy (ART). Delayed diagnosis of HIV–TB coinfection was associated with higher mortality, while timely initiation of ART in conjunction with TB therapy was shown to lower the risk of opportunistic infection and death. On the other hand, clinicians need to be aware of the risk of immune reconstitution inflammatory syndrome (IRIS) after ART is started, especially in extensive EPTB (Manzardo et al., 2015; Moseki, 2025; H. Yang et al., 2024). Thus, the case of ITB as a manifestation of early EPTB in HIV patients confirms the importance of comprehensive EPTB screening, the use of sensitive diagnostic modalities, and the integration of TB–HIV services to optimize clinical outcomes.

Previous research has documented the complex relationship between HIV and intestinal tuberculosis, yet significant gaps remain in understanding early diagnostic approaches and clinical management strategies (Cioboata et al., 2025; Kurnick et al., 2019;

Naidoo et al., 2019; Walzl et al., 2018). A study by Sheikhi et al. (2024) reported a case of gastrointestinal tuberculosis revealed by acute abdomen due to ileocecal perforation in an HIV-infected patient, highlighting the catastrophic consequences of delayed diagnosis when ITB presents with surgical emergencies rather than gradual symptoms.^3^ Similarly, Arpagaus et al. (2020) in their prospective cohort study in rural Tanzania found that extrapulmonary tuberculosis, including intestinal involvement, was significantly associated with advanced HIV disease and lower CD4 counts, emphasizing the need for heightened clinical suspicion in immunocompromised populations.^16^ Furthermore, Park et al. (2021) described intestinal tuberculosis as a persistent diagnostic challenge even in high-resource settings, noting that the non-specific presentation often leads to extensive investigations before the correct diagnosis is established.^18^ However, these studies primarily focused on either surgical presentations or epidemiological patterns, with limited emphasis on the systematic diagnostic approach using advanced molecular methods in the early identification of ITB as a sentinel marker for HIV-related immunosuppression.This case report adds new insights by demonstrating how a comprehensive, algorithm-based diagnostic approach—integrating clinical assessment, advanced imaging, and molecular diagnostics—can facilitate early identification of intestinal tuberculosis before catastrophic complications occur. The novelty of this report lies in documenting the complete diagnostic journey from initial non-specific gastrointestinal symptoms to confirmed ITB-HIV coinfection, emphasizing the critical role of Xpert MTB/RIF in establishing rapid diagnosis and the practical integration of TB-HIV treatment protocols. Moreover, this case highlights the clinical imperative of maintaining high suspicion for ITB in HIV patients presenting with chronic gastrointestinal symptoms, even in the absence of overt pulmonary manifestations, thereby filling a crucial gap in the literature regarding early diagnostic strategies that can prevent progression to surgical emergencies and improve patient outcomes through timely intervention.The clinical implications of early diagnosis and systematic screening for ITB in HIV patients cannot be overstated, as delayed recognition is directly associated with increased morbidity, mortality, and healthcare costs. Early identification enables prompt initiation of appropriate antituberculosis therapy before the development of complications such as intestinal perforation, obstruction, or massive hemorrhage—events that dramatically increase mortality risk in immunocompromised patients. Furthermore, early diagnosis facilitates timely ART initiation with proper timing relative to TB treatment, optimizing immune recovery while minimizing IRIS risk. From a public health perspective, systematic ITB screening in HIV patients contributes to tuberculosis control efforts by identifying previously undiagnosed cases, preventing ongoing transmission, and reducing the reservoir of infection in high-burden communities. The necessity of integrating EPTB screening protocols into routine HIV care represents not merely a clinical best practice but an ethical imperative to ensure comprehensive care for this vulnerable population.

CASE REPORT

The patient named IWOY, a 23-year-old male, is domiciled in Denpasar with a medical record number RG02645773. The patient came for an examination on November 11, 2025 at Wangaya Hospital. The main complaint conveyed was abdominal pain. The patient

came to the emergency room with complaints of upper abdominal pain right in the heartburn that had been severe since one day before entering the hospital. The pain is felt dull and has disappeared since about one month. Patients also complain of diarrhea since one month before with a frequency of 3–4 times per day, the consistency of stool is like yellow porridge without blood. Complaints of diarrhea accompanied by fever from 14 days before admission to the hospital, especially in the afternoon until night, with the highest temperature ever measured at 39.0°C. The patient felt weak since the last week accompanied by fatigue and fireflies.

Patients also complain of coughing up phlegm with yellow sputum, although the frequency of coughing is not very frequent. The patient admitted that he often sweated at night even though he was not strenuous, but did not feel shortness of breath. Patients noticed a weight loss in the last 14 days, from 52 kg to 48 kg. Appetite decreases and patients complain of nausea, but there is no vomiting. Urination patterns are reported to be still within normal limits. The patient has never experienced the same complaint before. A history of systemic diseases such as hypertension, diabetes mellitus, heart disease, kidney disease, liver disease, and malignancy is denied, as well as a history of drug and food allergies.

The history of the same disease in family members is unknown. The patient also denied any family history of hypertension, diabetes mellitus, heart disease, kidney disease, liver disease, malignancy, or a history of long cough or coughing up blood. In the social aspect, the patient works as a private employee and is unmarried. The patient currently has a close friend who has been in a relationship with him for approximately six years. A history of sexual activity with a current partner is denied. The patient admitted that he had had sexual intercourse with his previous partner twice without contraception. A history of smoking and alcohol consumption exists, although it is said to be only in certain situations. Patients denied a history of blood transfusions, alternating use of syringes, or actions such as tattooing that involved the use of needles and ink into the skin.

On physical examination, the general condition of the patient appeared to be moderately ill with composing consciousness. Blood pressure is 110/70 mmHg, pulse rate is 87 times per minute, breathing rate is 20 times per minute, and body temperature is 37.9°C. The weight was recorded at 42 kg with a height of 160 cm. A head examination shows the shape of the head normoscephal. The conjunctiva appears anemic, jaundice is not found, and the isochord pupil is 3 mm/3 mm in size. In the neck, the JVP is about 5+2 cmH_2O, there is an enlargement of lymph nodes in the form of one nodule in the region colli dextra, and several nodules in the colli sinistra region. On an ear examination, the earlobe appears normal without secretion. The nose looks clean without secretions. The throat shows T1/T1 tonsils and the pharynx is not hyperemic. The lips are not cyanosis and the lip mucosa appears wet.

Cardiac examination showed that the ictus cord was not visible on inspection. On palpation, the ictus cord is palpable between the fifth ribs of the midclavicle sinistra line. Percussion shows the right boundary of the heart between the fourth ribs, the parasternal line of the dextra, and the left boundary between the fifth ribs, the midclavicular line sinistra. Auscultation hears single, regular, non-murmuring S1 and S2 heart sounds. On lung examination, the movement of the chest wall appears symmetrical both when static and dynamic, without retraction and without affectation. Palpation shows symmetrical chest movements with vocal phremitus within normal limits. Pulmonary percussion provides a

sonorous sound, and auscultation hears a good vesicular breathing sound in both lung fields without groaning or wheezing. On the abdominal examination, there was no distension or impairment. Intestinal noise is still heard and is considered to increase. Abdominal percussion gives a tympanic sound, while palpation shows a pressing pain in the abdominal area with a negative Murphy sign. On the extremities, the acral feels warm, does not appear to be edema, and *the capillary refill time* is less than two seconds.

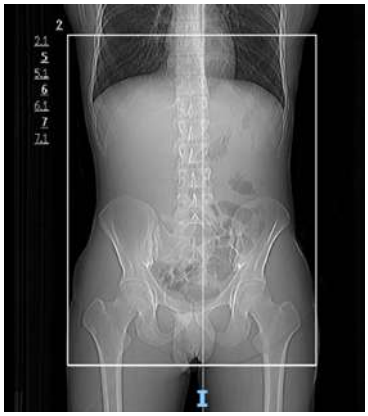
Supporting examinations showed complete blood on November 7, 2025 with hemoglobin 8.8 g/dL, erythrocytes 3.62 $x10^6$/uL, and hematocrit 28.2%, all below the reference value. MCV values of 77.9 fL and MCH of 24.3 pg were also below the reference values, while MCHC of 31.2 g/dL was still within normal limits. RDW-SD 41.3 fL and RDW-CV 14.5% are within the reference range. The number of leukocytes of 12.39 $x10^3$/uL was slightly increased compared to the reference value, with 73.8% neutrophils, 15.9% lymphocytes lower than the reference value, and 9.9% monocytes slightly increased. The absolute value of lymphocytes of 1.32 $x10^3$/uL was within the reference limit, while the absolute monocyte of 0.82 $x10^3$/uL was slightly increased. The platelet count of 282 $x10^3$/uL is still within normal limits. The platelet index showed a PDW of 8.2 fL and an MPV of 8.5 fL which was slightly lower than the reference value, while the PCT of 0.24% and the P-LCR of 12.3% were close to the normal range.

Serological examination on November 10, 2025 showed negative qualitative HBsAg, negative Anti-HCV rapid negative, non-reactive VDRL, and non-reactive TPHA. A complete urine test dated November 6, 2025 showed a yellow color with a pH of 6, leukocyte esterase negative, nitrite negative, protein negative, glucose negative, ketone negative, and blood negative. Microscopic examination showed negative erythrocytes, leukocytes 0–1 per field of view, bacteria not found, clear urine clarity, and flat epithelium 0–1 per field of view. An abdominal ultrasound examination on November 7, 2025 gave a hint of mesenteric lymphadenitis with suspected peritoneal tuberculosis and suggested a follow-up examination of the abdomen CT-scan with contrast. Thoracic photos on the same date showed the heart and lungs within normal limits with no obvious abnormalities. Contrast CT-scan of the abdomen dated November 10, 2025 provides an overview of intestinal tuberculosis in the form of circular symmetrical thickening of the *small bowel* and *large bowel* accompanied by masking of the mesentery, thickening of the peritoneum with multiple solid nodules attached to the L4–5 level, as well as multiple lymphadenopathy of varying sizes in the paraaortic region, superior mesenteric, inferior mesenteric, almost the entire abdominal region, internal and external iliac, as well as right and left inguinal. At the examination, active pulmonary tuberculosis was also reported. The TCM examination on November 12, 2025 showed that the MTB output was detected low with rifampicin resistance information not detected.

Based on the anamnesis, physical examination, and supporting examination outputs, a working diagnosis of B24 with fever that has lasted for about 20 days, mesenteric lymphadenitis with suspected peritoneal tuberculosis, abdominal pain related to intestinal tuberculosis, and active pulmonary tuberculosis were established. The management provided includes intravenous NaCl fluid at a rate of 20 drops per minute and two packed red cell transfusions. To treat fever, patients are given paracetamol 3 x 1000 mg orally as needed. Gastric therapy includes omeprazole 2 x 40 mg and sucralfate 3 x 1 doses. Patients also

received 1 x 2 gram of cephriaxone and 2 x 1 folic acid. Anti-tuberculosis drugs are given according to the applicable protocol.

Monitoring is carried out by assessing the patient's complaints and general condition every day, accompanied by periodic monitoring of vital signs. The prognosis was assessed dubia ad bonam for *ad vitam*, dubia ad bonam for *ad functionam*, and dubia ad bonam for *ad sanationam*.



RESULTS AND DISCUSSION

The patient came with dull epigastric pain that disappeared from one month, accompanied by chronic diarrhea 3-4 times/day with the consistency of yellow porridge, fever that persisted for 14 days, especially in the afternoon-night, night sweats, cough with yellow phlegm, rapid weight loss (52→48 kg in 14 days), decreased appetite, and weakness. Patients in these cases come with discharged, blunt epigastric pain, chronic diarrhea, rapid weight loss, fever, and night sweats. The combination of non-specific gastrointestinal symptoms and systemic symptoms is consistent with the description of intestinal TB in immunocompromised hosts, as reported in the literature, and is the basis for initial suspicion of STIs in patients with HIV infection. Common manifestations include abdominal pain, diarrhea, palpable masses, and constitutional symptoms such as fever and night sweats. Early identification is especially important because delayed diagnosis is associated with higher morbidity and mortality. The pathophysiology in such cases may include direct infection of the intestinal mucosa by Mycobacterium tuberculosis through the ingestion of infected sputum, the dissemination of hematogenic, or the ingestion of contaminated materials (Kentley et al., 2017; Dhana et al., 2022).

Complete blood tests showed microcytic-hypochromic anemia (Hb 8.8 g/dL, MCV 77.9 fL, MCH 24.3 pg) with mild leukocytosis and predominance of neutrophils and slight monocytosis, consistent with chronic inflammatory processes, accompanied by TCM examination found low detected MTB. Biochemical examination may show increased markers of inflammation, anemia, and hypoalbuminemia that reflect chronic infections as well as malnutrition (Dhana et al., 2022; Rathi & Gambhire, 2016; Saha, 2024).

Symmetrical circumferential thickening of the small and large bowels accompanied by clouding of the mencentrium and thickening of the peritoneum accompanied by multiple solid nodules attached as high as CV L4-5 levels Multiple lymphadenopathy with varying sizes in the paraaortic region, superior mecentric, inferior mecentric, almost the entire abdominal

region, the internal illiaca externa and the right and left inguinal. The diagnosis of STIs requires differentiation from other conditions such as Crohn's disease or malignancies, which is usually achieved through clinical suspicion, radiological imaging (e.g. CT or ultrasound showing thickening of the intestinal wall and lymphadenopathy), endoscopic biopsy, as well as microbiological confirmation. In addition, non-specific presentations often lead to delayed diagnosis and lead to severe complications such as intestinal perforation, especially in HIV patients with low immunity (Bolukbas et al., 2005; R et al., 2017; Sheikhi et al., 2024).

The reported case describes a patient with HIV infection who comes with a major gastrointestinal complaint leading to a diagnosis of intestinal tuberculosis as a manifestation of early extrapulmonary tuberculosis. Symptoms such as abdominal pain, weight loss, and bowel disorders appear without clear evidence of pulmonary involvement, so they initially resemble a variety of other bowel diseases. Through a combination of clinical assessment, laboratory examination, abdominal imaging, and endoscopic evaluation with biopsy, confirmation was achieved that the complaint was part of ITB in immunocompromised hosts. These findings confirm that in HIV patients, especially with low CD4 levels, the manifestations of EPTB can dominate the clinical picture and require a high level of suspicion to avoid complications such as intestinal obstruction or perforation.

From the case course and response to therapy, it appears that the implementation of TB screening protocols in HIV patients, the implementation of aggressive diagnostic workups for EPTB, and the rapid initiation of antituberculosis therapy combined with ART play a role in the clinical improvement of patients. This experience emphasizes the importance of integrating TB–HIV services, training health workers on the spectrum of EPTB presentation, and expanding screening not limited to respiratory symptoms alone. ITB as an early presentation in HIV patients is a reminder that gastrointestinal symptoms that are not specific to this population should immediately trigger a thorough evaluation of the possibility of extrapulmonary TB, so that diagnosis and management can be carried out earlier and the risk of morbidity and mortality can be reduced.

CONCLUSION

This case report illustrates that intestinal tuberculosis (ITB) can emerge as an early, often overlooked sign of HIV infection and disseminated extrapulmonary tuberculosis (EPTB), posing diagnostic hurdles due to nonspecific gastrointestinal symptoms mimicking other abdominal conditions. Key clinical takeaways include maintaining a high index of suspicion in HIV-positive patients with chronic symptoms, implementing routine EPTB screening in HIV care beyond pulmonary focus, leveraging advanced diagnostics like contrast-enhanced CT and Xpert MTB/RIF for swift confirmation, and integrating TB-HIV services for optimal outcomes. Policy recommendations emphasize establishing dedicated clinics with rapid diagnostics, revising national guidelines for comprehensive EPTB evaluation in immunosuppressed individuals, and enhancing provider training on atypical EPTB. For future research, prospective cohort studies should investigate ITB prevalence as an HIV sentinel event across regions, alongside validation of EPTB biomarkers, implementation science on TB-HIV integration in low-resource areas, trials on ART timing amid IRIS risks, and clinical prediction tools for high-risk screening.

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