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Clinical Study of Intestinal Tuberculosis and its Response to Short Course Anti-Tuberculosis Therapy

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Abstract **Objective:** Intestinal tuberculosis (ITB) is an important form of extrapulmonary TB that often mimics other gastrointestinal diseases, making early diagnosis and management challenging. This study aimed to assess the clinical features, diagnostic approaches and treatment response of patients with ITB who received short-course anti-tuberculosis therapy (ATT). **Methods:** A prospective study was conducted on 48 patients with clinical, radiological, endoscopic and histopathological evidence of ITB at a tertiary care hospital between March 2023 and March 2024. Patients underwent diagnostic tests including the Mantoux test, abdominal ultrasonography, barium studies and colonoscopy with biopsy. All patients were treated with a standard 6-month ATT regimen and their clinical response was evaluated at 2 months and 6 months. **Results:** The most common symptoms were abdominal pain (89.6%), weight loss (81.3%) and fever (77.1%). The Mantoux test was positive in 69% of cases and elevated ESR was found in 91.7% of patients. Imaging and endoscopy showed frequent findings such as ulcers (85.4%) and ileocecal involvement (75%). After 2 months of ATT, 56.25% of patients showed significant clinical improvement, which increased to 89.6% after completing 6 months of therapy ($p<0.001$). However, 8 patients were later diagnosed with Crohn's disease instead of ITB. **Conclusions:** Most patients with ITB showed marked improvement with a 6-month ATT regimen, highlighting the effectiveness of this treatment approach. However, diagnosing ITB remains challenging because it shares symptoms with Crohn's disease. This study underscores the need for careful evaluation and follow-up to help doctors diagnose intestinal TB accurately and provide timely, effective treatment.

Key Words Intestinal Tuberculosis, Anti-Tuberculosis Therapy, Crohn's Disease, Clinical Response, Diagnosis Challenges

INTRODUCTION

Tuberculosis (TB) remains one of the most significant infectious diseases worldwide, affecting millions of people each year [1]. Despite being an ancient disease, TB continues to pose serious public health challenges, particularly in developing countries, where it remains highly prevalent due to poor living conditions, overcrowding and limited access to healthcare services [2]. According to the World Health Organization (WHO), TB is responsible for more than 1.5 million deaths annually, with an estimated 10 million new cases occurring every year [1]. Among the various forms of TB, extrapulmonary tuberculosis (EPTB) constitutes a substantial proportion, affecting organ systems other than the lungs and includes lymphatic, abdominal, bone and central nervous system involvement [3]. Intestinal tuberculosis (ITB), a subset of EPTB, is particularly challenging to diagnose and manage due to its nonspecific clinical presentation and its overlap with other gastrointestinal diseases, notably Crohn's disease (CD) [4].

TB has a long history as a human disease and its control has been the subject of significant public health efforts over centuries [5]. However, even with the development of effective antibiotics and vaccines, TB persists as a major health issue, particularly in resource-limited settings. One of the reasons for the continued prevalence of TB is its adaptability and the ability of *Mycobacterium tuberculosis*, the causative agent, to lie dormant in the host for years [6]. This latent TB infection can later reactivate, particularly in individuals with weakened immune systems, such as those with HIV or those receiving immunosuppressive therapies. Additionally, the emergence of multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) further complicates the treatment landscape [1].

Extrapulmonary tuberculosis (EPTB) accounts for about 20% of all TB cases globally and its incidence is even higher in immunocompromised individuals, such as those with HIV [7]. The gastrointestinal tract is one of the more common sites of EPTB, accounting for about 5-10% of EPTB cases in endemic regions [8]. Within the gastrointestinal system, the ileocecal region is the most commonly affected site due to several factors, including the abundance of lymphoid tissue and physiological stasis, which make it a suitable environment for *Mycobacterium tuberculosis* bacilli to colonize [9]. Other sites of involvement include the jejunum, colon and, less frequently, the stomach and esophagus.

The clinical presentation of intestinal tuberculosis is highly variable and nonspecific, often mimicking other gastrointestinal diseases such as Inflammatory Bowel Disease (IBD), particularly Crohn's disease (CD), colorectal cancer and other infections [10]. Symptoms commonly include abdominal pain, weight loss, fever, diarrhea and in some cases, gastrointestinal bleeding or intestinal obstruction [11]. This nonspecific presentation contributes to delays in diagnosis and treatment, which can lead to severe complications, including intestinal perforation, obstruction and malnutrition [10]. The overlap of symptoms between ITB and Crohn's disease further complicates the diagnosis, as both conditions can present with abdominal pain, diarrhea and weight loss. In regions where both diseases are prevalent, such as India and other parts of Southeast Asia, distinguishing between the two can be particularly challenging [12].

The pathogenesis of intestinal tuberculosis is complex and involves the ingestion of *Mycobacterium tuberculosis* bacilli, either through swallowed sputum from an active pulmonary infection or via hematogenous spread from a primary focus, usually in the lungs [9]. Less commonly, the infection may occur through ingestion of contaminated food or milk, although this is rare in the developed world [8]. The bacilli primarily infect the lymphoid tissue in the gut, particularly in the ileocecal region, where they induce an immune response that leads to the formation of granulomas. These granulomas are characteristic of TB and consist of a central area of caseation necrosis surrounded by epithelioid cells and multinucleated giant cells, with a peripheral rim of lymphocytes [11]. Over time, this granulomatous inflammation can lead to ulceration, fibrosis and stricture formation, causing symptoms of obstruction and malabsorption [10].

The diagnosis of intestinal tuberculosis is notoriously difficult due to the nonspecific nature of its symptoms and its overlap with other gastrointestinal diseases [4]. In regions with a high prevalence of both ITB and Crohn's disease, this differential diagnosis is particularly challenging [13]. Both diseases can present with similar clinical, radiological and endoscopic findings, including abdominal pain, diarrhea, weight loss, fever and the presence of ulcers or strictures in the bowel [9]. Radiological findings, such as strictures, fistulas and mucosal irregularities, are also common to both conditions, further complicating the diagnostic process [4].

Endoscopy plays a crucial role in the diagnosis of ITB, allowing direct visualization of the mucosal lesions and facilitating biopsy collection for histopathological examination [10]. Typical endoscopic findings in ITB include ulcers, strictures and nodules, often in the ileocecal region [9]. However, these findings are not pathognomonic, as similar features can be observed in patients with Crohn's disease [11]. Histopathological examination of biopsy specimens may reveal granulomas, which are characteristic of tuberculosis, but the presence of granulomas alone is not sufficient to make a definitive diagnosis, as granulomas can also be found in Crohn's disease [10]. The identification of caseation necrosis and acid-fast bacilli (AFB) in tissue samples is more specific for TB, but these findings are often absent, particularly in patients with early or treated disease [11].

Given these challenges, a high index of suspicion is required for the diagnosis of ITB, particularly in endemic regions or in patients with risk factors such as a history of TB exposure or immunosuppression [13].

In Saudi Arabia, despite significant progress in TB control, tuberculosis remains a notable health concern, with an incidence rate of approximately 10-15 cases per 100,000 population. The rising prevalence of Crohn's disease in the region further complicates the differentiation between ITB and inflammatory bowel diseases, making accurate diagnosis and timely treatment essential for preventing serious complications. Therefore, studies focusing on intestinal tuberculosis in Saudi Arabia are urgently needed to improve diagnostic accuracy, optimize management strategies and enhance patient outcomes.

This study aims to examine the clinical characteristics, diagnostic methods and treatment outcomes of patients diagnosed with intestinal tuberculosis at a tertiary care center. By analyzing the response to a 6-month course of anti-tuberculosis therapy, this study seeks to provide insights into the effectiveness of current treatment protocols and to highlight the challenges in diagnosing ITB, particularly in differentiating it from Crohn's disease. The findings of this study will contribute to the existing body of knowledge on ITB and provide guidance for clinicians managing patients with suspected intestinal tuberculosis in both endemic and non-endemic regions.

METHODS

This study was designed as a prospective observational study conducted over 12 months (March 2023 to March 2024) at a Qassim-based superspeciality hospital. The study population included patients diagnosed with intestinal tuberculosis (ITB) based on clinical, radiological, endoscopic and histological features. Diagnosis was confirmed either through microbiological tests or by observing a positive response to anti-tuberculosis therapy (ATT).

Patients were consecutively enrolled based on specific inclusion and exclusion criteria. Individuals presenting with symptoms such as abdominal pain, intestinal obstruction, weight loss, diarrhea and fever were evaluated for eligibility.

Necessary ethical approval was obtained from the institutional ethics committee and informed consent was taken from all participants. The sample included both male and female patients across a wide age range, reflecting the general demographic affected by ITB.

The patients were included if they had a confirmed diagnosis of intestinal TB based on a combination of clinical features (abdominal pain, constitutional symptoms), endoscopic findings (ulcers, strictures), histological evidence (granulomas), microbiological positivity (AFB smear, PCR), or showed a favorable clinical response to ATT. Exclusion criteria included HIV-positive patients, pregnant women, patients with gastrointestinal malignancies, advanced cardiac conditions, or those already receiving ATT at the time of enrollment. A total of 48 patients were initially enrolled. After accounting for 5 patients lost to follow-up and 8 patients later diagnosed with Crohn's disease, 35 patients with confirmed ITB were included in the final analysis. Each patient underwent a comprehensive clinical evaluation, including demographic data collection, symptom history and physical examination. Baseline investigations included complete blood counts, ESR, liver and renal function tests, HIV screening, chest X-ray and stool examination. Details of past ATT intake and history of TB contact were recorded.

Specific investigations conducted for each patient included the Mantoux test, where 0.1 mL (5 TU) of purified protein derivative (PPD) was injected intradermally and the induration was measured at 72 hours, with a diameter greater than 10 mm considered positive. Imaging studies such as abdominal ultrasound, abdominal X-ray and barium studies were performed to assess the extent of disease, identifying features such as strictures, ulcers and bowel wall thickening. Endoscopic evaluation, including colonoscopy and double-balloon enteroscopy, was used to document segmental involvement of the gastrointestinal tract, with targeted biopsies obtained from affected areas. Histopathological analysis involved fixing multiple biopsy samples in 10% buffered formalin, processing them for hematoxylin and eosin staining and performing special staining (Ziehl-Neelsen) for acid-fast bacilli. Additionally, TB-PCR testing targeting the IS6110 gene was carried out on biopsy specimens to enhance diagnostic accuracy.

All patients received a standard short-course 6-month anti-tuberculosis therapy (ATT) regimen in accordance with national TB program guidelines. The treatment was divided into two phases. The intensive phase, lasting the first two months, included four drugs: Rifampicin (10 mg/kg body weight), Isoniazid (5 mg/kg), Ethambutol (15 mg/kg) and Pyrazinamide (25 mg/kg). This was followed by the continuation phase for the next four months, during which patients received Rifampicin (10 mg/kg) and Isoniazid (5 mg/kg). Patients were counseled thoroughly regarding the importance of adherence to therapy throughout the treatment period. They were monitored for potential adverse effects such as hepatotoxicity, neurotoxicity and nephrotoxicity during each follow-up visit and any necessary drug modifications were made in accordance with standard clinical guidelines.

Patients were followed up regularly at 2 months, 4 months and 6 months during the course of anti-tuberculosis therapy (ATT) and subsequently every 3 to 6 months after completing treatment. At each follow-up visit, a detailed history regarding changes in symptoms was recorded and a thorough physical examination was performed. Clinical response was assessed and categorized as complete response (full resolution of symptoms), incomplete response (partial improvement), or non-response (no improvement or worsening of symptoms). Where feasible, radiological follow-up using intestinal barium studies was conducted after six months to assess structural healing of the gastrointestinal tract. Patients who did not show clinical improvement by the 2-month follow-up were reevaluated for alternative diagnoses, primarily Crohn's disease. In such cases, patients were transitioned to appropriate therapies, including corticosteroids, 5-aminosalicylic acid (5-ASA), or immunomodulators such as azathioprine and their clinical, radiological and endoscopic responses were reassessed after 3 to 4 months of initiating the new treatment.

Statistical Analysis

Categorical variables were summarized as numbers and percentages, while continuous variables were presented as mean ± standard deviation or median with range, as appropriate. Data for intestinal tuberculosis and Crohn's disease patients were analyzed separately and combined in descriptive charts. Analytical statistics included the Chi-square test, Fisher's exact test, univariate analysis and multivariable analysis using binary logistic regression. All analyses were performed using SPSS software for Windows (version 13.0; Chicago, IL).

RESULTS

A total of 48 patients diagnosed with intestinal tuberculosis (ITB) were analyzed. The mean age was 28.88 ± 9.63 years, with most patients between 20 and 40 years old. The gender distribution was nearly equal, with 19 males and 18 females.

The most common presenting symptoms were abdominal pain (89.6%), fever (77.1%), weight loss (81.3%) and anorexia (52.1%), while diarrhea was reported in 35.4% of patients and a palpable abdominal lump in 14.6%. Approximately 29.2% presented with signs of subacute intestinal obstruction (Table 1).

On examination, anemia was present in 45.8% of patients, while 31.3% showed signs of poor nutrition. Mantoux testing was positive in 69% of cases and 91.7% had raised ESR levels. Ultrasonography abnormalities were detected in 35.4% of patients, with findings such as lymphadenopathy (18.8%) and ascites (16.7%). Barium studies demonstrated strictures (42.9%), mucosal abnormalities (16.7%) and caecal deformities (35.7%) (Table 2).

Mantoux testing was positive in 69% of patients, while 91.7% showed elevated ESR levels. Hypoalbuminemia was

Table 1: Clinical Features of Patients with Intestinal Tuberculosis

Clinical features	N (No. of patients)	%
Abdominal pain	31	89.6
Anorexia	18	52.1
Fever	26	77.1
Weight loss	29	81.3
Diarrhea	13	35.4
GI bleeding	4	12.5
Vomiting	17	45.8
Extraintestinal symptoms	2	6.3
Intestinal obstruction (SAIO)	11	29.2

Table 2: Examination findings of 48 ITB patients

Clinical findings	Category	No. of patients	%
Examination findings	Anemia	15	45.8
	Edema	5	14.6
	Poor nutrition	11	31.3
	Lump abdomen	4	14.6
	Tender abdomen	9	25
Tests	Mantoux test	21	69
	Chest X-ray	3	10.42
	Raised ES	44	91.7
	Low albumin	14	29.2
USG abdomen findings	Abnormality in USG	12	35.4
	Lymphadenopathy	7	18.8
	Bowel wall thickening	4	16.7
	Ascites	6	16.7
BMFT/SBE findings	Normal	17	45.2
	Stricture	13	42.9
	Mucosal abnormality	7	16.7
	Caecal deformities	15	35.7

Table 3: Endoscopic (colonoscopy, DBE and upper GI endoscopy) findings

Endoscopic findings	No of patients	%
Ulcers	41	85.42
Nodules	32	66.7
Strictures	14	29.2
Deformed ileocaecal valve and caecum	25	52.1
Polypoid lesions	2	4.2
Mucosal bridges	2	4.2
Erythema	48	100
Exudates	25	52.1

Table 4: Response to anti-tuberculosis therapy (ATT)

Time of assessment	Complete response	Partial/No response	p-value
2 months	27 (56.25%)	21 (43.75%)	0.001*
6 months	43 (89.6%)	5 (10.4%)	0.001*

*Statistically significant ($p<0.001$)

observed in 29.2% of patients, indicative of malnutrition or systemic inflammation. Radiological findings included abnormalities on chest X-ray in 10.42% of patients, indicating either active or past pulmonary tuberculosis (Table 2).

Endoscopic evaluation revealed ulcers in 85.4% of patients, nodules in 66.7% and strictures in 29.2%, with the ileocecal region being the most commonly involved site (75%). Histopathological analysis confirmed granulomas in 58.3% of cases (Table 3).

Clinical response to anti-tuberculosis therapy (ATT) was assessed at 2 months and 6 months. After 2 months of ATT, 56.25% of patients showed complete symptom resolution, which increased markedly to 89.6% by the end of 6 months. This improvement was statistically significant ($p<0.001$) (Table 4). Similarly, analysis of the relationship between Mantoux positivity and endoscopic findings showed no statistically significant correlation between Mantoux test results and specific endoscopic lesions (ulcers, nodules, strictures), as p-values were all above 0.05 (Table 5). In addition, Barium study findings were also evaluated in relation to ileocecal involvement. A statistically significant association was observed between caecal deformities and ileocecal involvement ($p = 0.04$), while the association with strictures was not statistically significant ($p = 0.11$) (Table 6).

Lastly, histopathological examination findings were analyzed in relation to clinical response to ATT. No significant difference in treatment outcomes was found based on the presence of granulomas or non-specific changes ($p = 0.48$) (Table 7).

Thus, most patients with intestinal tuberculosis showed significant clinical improvement following a standard 6-month ATT regimen, with nearly 90% achieving complete symptom

Table 5: Association between mantoux test and endoscopic findings

Endoscopic finding	Mantoux positive (N = 29)	Mantoux negative (N = 13)	p-value
Ulcers	26 (89.7%)	10 (76.9%)	0.23
Nodules	21 (72.4%)	7 (53.8%)	0.23
Strictures	9 (31%)	4 (30.8%)	0.98

*Statistically significant (p<0.001)

Table 6: Comparison of barium study and ileocecal involvement

Barium study finding	Ileocecal involvement (N = 36)	No ileocecal involvement (N = 12)	p-value
Strictures	16 (44.4%)	2 (16.7%)	0.11
Caecal deformities	14 (38.9%)	1 (8.3%)	0.04*

Table 7: Comparison of histopathological findings and clinical response

Histopathology finding	Complete response (N = 43)	Partial/No response (N = 5)	p-value
Granulomas (N = 28)	26 (92.9%)	2 (7.1%)	0.48
Non-specific changes	17 (85%)	3 (15%)	0.48

resolution. Diagnostic features such as positive Mantoux test, endoscopic findings and histopathological confirmation were helpful, but did not always predict treatment response, emphasizing the need for comprehensive clinical evaluation and follow-up.

DISCUSSION

This study provides valuable insights into the challenges of diagnosing and managing intestinal tuberculosis (ITB), especially in regions like Qassim, Saudi Arabia, where both tuberculosis and Crohn's Disease (CD) are emerging public health concerns. The results highlight how difficult it can be to distinguish ITB from CD because of their overlapping symptoms, endoscopic appearances and tissue changes.

The most frequent clinical presentations in our study were abdominal pain (89.6%), fever (77.1%), weight loss (81.3%) and diarrhea (35.4%). These observations resonate closely with previously reported data from South Asian cohorts and global studies. Similar results were noted by Kedia et al. in India, where abdominal pain, weight loss and fever were predominant in ITB cases, highlighting their diagnostic significance [4]. Comparable findings were reported in studies by Sharma et al., who also emphasized systemic features such as prolonged fever and constitutional symptoms as markers distinguishing ITB from CD [14]. Moreover, diarrhea observed in our cohort corroborates data from Huang *et al.* [15], who identified diarrhea in around one-third of ITB patients. However, diarrhea is more commonly associated with CD, occurring in approximately 60% of CD cases as per global meta-analyses [16].

Laboratory findings revealed elevated erythrocyte sedimentation rate (ESR) in approximately 91.7% of cases, aligning with existing literature emphasizing ESR as a nonspecific yet valuable inflammatory marker in ITB diagnosis. A systematic review by Maulahela *et al.* [17] highlighted elevated ESR in over 90% of ITB cases, consistent with our study findings. Similarly, hypoalbuminemia, observed in 29.2% of our cohort, aligns with global data indicating malnutrition and chronic systemic inflammation associated with advanced ITB disease [18].

Radiological assessments through ultrasonography in our study detected characteristic findings such as lymphadenopathy and bowel wall thickening, resonating with Sun *et al.* [19] observations that such ultrasonographic features frequently accompany ITB. Recent studies by Sharma *et al.* [14] have further underscored radiological differences, emphasizing necrotic lymphadenopathy and concentric bowel thickening as suggestive radiologic indicators differentiating ITB from CD.

Barium studies conducted in our cohort identified intestinal strictures in 42.9% of patients. This is congruent with Gupta *et al.* [20], who documented strictures as common radiological hallmarks in ITB patients. Moreover, predominant involvement of the ileocecal region, noted in 75% of our cases, aligns with historical and recent studies attributing this site predilection to physiological stasis and lymphoid tissue abundance favoring mycobacterial colonization [8].

Endoscopic evaluation proved indispensable, revealing ulcers (85.42%), nodules (66.7%) and strictures (29.2%) as significant findings. Our findings are consistent with the endoscopic differentiation criteria elaborated by Lee *et al.* [21] who identified transverse ulcers and nodular lesions as distinctive features favoring ITB over CD, which typically presents with longitudinal ulcers and cobblestoning. Ng *et al.* [22] reinforced similar endoscopic differences, notably the circumferential ulcers and ileocecal valve deformities typical in ITB.

Histopathologically, tissue changes typical of tuberculosis, such as clusters of inflammatory cells (granulomas), were found in about 58% of our biopsies. However, caseation necrosis, which is more specific for TB, was infrequent, making diagnosis based on biopsy alone difficult. This finding mirrors work by Pulimood *et al.* [11] and Lu *et al.* [23], who pointed out that even when tissue changes are seen, they may not definitively separate ITB from Crohn's disease. Molecular diagnostics like TB PCR have improved detection rates, but limitations still exist [17].

Importantly, treatment with a 6-month ATT regimen resulted in clinical improvement in 89.6% of patients, showing the effectiveness of therapy when ITB is correctly diagnosed. These findings align with studies by Pratap Mouli *et al.* [24], emphasizing that standard therapy is generally successful when applied appropriately. However, about 10% of our patients did not respond to ATT, raising suspicion of misdiagnosis, primarily CD. This rate of non-response is similar to findings by Kurnick *et al.* [25] and highlights the need for close clinical monitoring.

Misdiagnosis between ITB and CD remains a serious issue. In our study, several patients initially thought to have ITB were eventually reclassified as having Crohn's disease. This pattern is consistent with findings from Seo *et al.* [26] and Gupta *et al.* [27], who reported significant rates of misdiagnosis, leading either to unnecessary prolonged ATT in Crohn's patients or dangerous immunosuppressive therapy in undiagnosed TB patients [28].

Differences in Qassim compared to other regions may stem from local health conditions such as moderate TB burden, increasing Crohn's disease incidence and varying levels of diagnostic resource availability. Unlike larger urban centers with advanced molecular tools readily available, settings like Qassim may rely more heavily on clinical judgment and therapeutic trials, contributing to diagnostic uncertainty. The increasing IBD prevalence in TB-endemic regions, notably South Asia, accentuates this diagnostic challenge. Singh et al. reported that nearly 30% of CD patients were initially treated empirically for ITB, reflecting a critical need for refined diagnostic algorithms [29]. Limsrivilai *et al.* [30] proposed a Bayesian meta-analytic model incorporating clinical, endoscopic, radiological and histological features to enhance differential diagnosis accuracy, which showed promise in clinical applications.

More recently, emerging technologies such as fecal calprotectin, serial assessments of inflammatory biomarkers and machine-learning approaches have demonstrated potential in differentiating ITB from CD. For instance, Weng *et al.* [31] employed an explainable machine-learning model achieving over 90% diagnostic accuracy, highlighting innovative diagnostic advancements. Zhao *et al.* [32] also explored the potential utility of interferon-gamma release assays (IGRA) in distinguishing ITB from CD, reporting encouraging results that merit further validation [33].

This study has several limitations that should be considered when interpreting the results. First, the sample size was relatively small, with only 48 patients initially enrolled and 35 completing full analysis. This limited number restricts the ability to generalize the findings to the wider population of intestinal tuberculosis patients, particularly across different healthcare settings or regions beyond Qassim.

Second, some patients were later reclassified as having Crohn's disease after failing to respond to anti-tuberculosis therapy. This diagnostic misclassification may have influenced the study's clinical response rates and highlights the ongoing challenge of accurately differentiating between ITB and Crohn's disease based solely on clinical, endoscopic and histological features.

Finally, because of these factors, the study cannot definitively prove diagnostic algorithms or treatment effectiveness for all patients with intestinal tuberculosis. Instead, it reflects real-world diagnostic and therapeutic experiences in a tertiary care setting in Saudi Arabia. Larger, multicenter studies using advanced diagnostic tools and longer follow-up periods are needed to validate these findings and refine management strategies for patients suspected of having ITB.

CONCLUSIONS

Our study demonstrates the continuing challenge of differentiating ITB from CD, particularly in regions where both diseases are prevalent. The overlapping clinical, radiological and histological features make diagnosis difficult, often requiring a combination of clinical suspicion, imaging, endoscopy and histopathology. In cases of diagnostic uncertainty, a therapeutic trial of ATT may be warranted, especially in patients with a high likelihood of tuberculosis. However, the failure to respond to ATT should prompt re-evaluation for alternative diagnoses such as CD.

In conclusion, this study reaffirms the importance of a high index of suspicion for ITB in endemic areas. A multidisciplinary approach, incorporating clinical evaluation, imaging, endoscopy and histopathology, is essential for accurate diagnosis and management. Anti-tuberculosis therapy remains the cornerstone of treatment, with excellent outcomes when administered appropriately. Further research is needed to develop more reliable biomarkers and diagnostic tools to differentiate ITB from CD and improve treatment strategies for both conditions.

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