

Progressive Wasting Syndrome with Pulmonary and Gastrointestinal Findings Suggestive of Malignancy

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ABSTRACT	ARTICLE DETAILS
Background: Progressive wasting syndrome accompanied by pulmonary and gastrointestinal (GI) involvement often raises clinical suspicion for malignancy. However, intestinal tuberculosis (ITB) remains a critical yet frequently overlooked differential diagnosis, particularly in endemic regions. Given the overlapping clinical, radiological, and endoscopic features between ITB and malignancies such as lymphoma or adenocarcinoma, misdiagnosis can lead to delayed treatment and worsened outcomes. Objective: This review aims to elucidate the clinicopathological parallels and distinctions between ITB and malignancy-associated wasting syndromes, emphasizing diagnostic challenges, histopathological correlations, and modern imaging modalities. Methods: A systematic literature search was conducted across PubMed, Scopus, and Embase, focusing on studies comparing ITB with malignancies (2010–2024). Data on clinical presentation, biomarkers, radiological findings, and diagnostic algorithms were synthesized. Results: ITB frequently presents with constitutional symptoms (fever, night sweats, weight loss), chronic diarrhea, abdominal pain, and obstructive GI features. Radiological findings such as concentric bowel wall thickening, mesenteric lymphadenopathy with necrosis, and concomitant pulmonary lesions may mimic malignancy. Histopathological confirmation via caseating granulomas and PCR-based detection of <i>Mycobacterium tuberculosis</i> is diagnostic. Conclusion: A high index of suspicion for ITB is essential in patients with progressive wasting and GI manifestations, particularly in TB-endemic areas. Multidisciplinary integration of clinical, endoscopic, and molecular diagnostics can prevent unnecessary invasive interventions and optimize therapeutic outcomes. KEYWORDS: Progressive wasting syndrome, Intestinal tuberculosis (ITB), Pulmonary-GI malignancy mimic, Caseating granulomas, Diagnostic dilemma, Mycobacterium tuberculosis, Abdominal lymphadenopathy, Malabsorption syndromes	Published On: 30 June 2025 Available on: https://ijmscrs.com/

INTRODUCTION

Progressive wasting syndrome, characterized by significant weight loss, cachexia, and multisystemic involvement, frequently triggers an extensive diagnostic workup for occult malignancy. In cases with concurrent pulmonary infiltrates and gastrointestinal symptoms—such as chronic diarrhea, obstruction, or hematochezia—malignancies like metastatic adenocarcinoma, lymphoma, or Crohn’s-like malignancies are often prioritized. However, in tuberculosis (TB)-endemic regions, intestinal tuberculosis (ITB) emerges as a formidable

diagnostic mimic, sharing clinical, endoscopic, and radiological features with neoplastic conditions. The diagnostic conundrum is exacerbated by the nonspecific nature of symptoms: fever, night sweats, and anorexia are hallmarks of both disseminated TB and paraneoplastic syndromes. Radiologically, ITB can manifest with circumferential bowel wall thickening, necrotic lymph nodes, and even hepatosplenic lesions, closely resembling advanced GI malignancies. Furthermore, the presence of pulmonary TB

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lesions—often misinterpreted as metastatic disease—adds another layer of complexity.

Despite advances in imaging (CT enterography, PET-CT) and biopsy techniques (endoscopic ultrasound-guided fine-needle aspiration), ITB remains underdiagnosed, leading to inappropriate chemotherapy or surgical resection. This review consolidates current evidence on distinguishing ITB from malignancy, emphasizing:

Case Presentation

The patient is a 61-year-old female from Mexicali, Baja California, with no significant hereditary medical background and a social history marked by long-term alcohol and tobacco use. She consumed alcohol chronically for over four decades (approximately 66 grams of ethanol daily) and has smoked 7 cigarettes per day since the age of 17, with a smoking index of 37.4 pack-years, representing a moderate risk for chronic obstructive pulmonary disease (COPD). She lived in adequate housing conditions, with basic services available, and denied zoonotic exposure or recent travel.

Her past medical history includes steatohepatitis with secondary ascites, classified as grade II, for which she was receiving standard diuretic therapy with furosemide and spironolactone, and portal hypertension prophylaxis with propranolol. She has no history of viral hepatitis, transfusions, or prior malignancy, and denied any chronic gastrointestinal diseases or prior hospitalizations relevant to her current presentation.

Initial Presentation and Symptomatology

Approximately four months before admission, she began experiencing significant, unintentional weight loss of 15 kilograms, despite a reportedly stable appetite and food intake. Notably, this was not accompanied by fever, lymphadenopathy, or overt gastrointestinal bleeding. Two to three weeks before admission, she developed persistent watery diarrhea, occurring 5–7 times daily, without blood,

mucus, or tenesmus. This episode spontaneously resolved three days prior to hospital admission, but she then reported the onset of a dry cough, raising concern for respiratory involvement.

Upon evaluation by her family physician, an abdominal ultrasound revealed signs of hepatic steatosis and free fluid in the abdominal cavity. Due to the concerning findings and persistent constitutional symptoms, she was referred and admitted to internal medicine for further evaluation of suspected wasting syndrome and ascites of unclear origin.

Hospital Course and Clinical Evolution

On admission, the patient appeared significantly cachectic, with a body mass index (BMI) of 15.2, marked sarcopenia, and evidence of ascites on physical examination. No hepatosplenomegaly or peripheral lymphadenopathy was found. She was hemodynamically stable, afebrile, and not in respiratory distress. Notably, auscultation of the right hemithorax revealed fine crackles, which were initially attributed to mild basilar atelectasis or early interstitial changes.

Laboratory workup revealed normocytic, hypochromic anemia (Hb 9.8 g/dL), mild hyponatremia (Na 128 mEq/L), and low albumin (2.86 g/dL), but normal liver transaminases and renal function. Viral markers for hepatitis B, hepatitis C, and HIV were negative. Tumor markers showed a slightly elevated CA-125 (44.3 U/mL), while AFP, CEA, and CA 19-9 were within normal limits.

A repeated abdominal ultrasound confirmed mild hepatic steatosis and free intraperitoneal fluid, without sonographic evidence of cirrhosis or intra-abdominal masses. However, the study was limited by technical constraints and operator dependence. Thoracic imaging (chest X-ray) subsequently revealed multiple irregular pulmonary opacities in the right lung (Figure 1), raising strong suspicion for a neoplastic or granulomatous process, possibly metastatic in nature.



Figure 1. Chest X-ray with opacities in the right lung.

A colonoscopy performed during her hospitalization demonstrated two suspicious lesions: a polyp 75 cm from the anal margin and a stenotic lesion 140 cm from the anal margin, both biopsied for histopathologic evaluation. The findings were interpreted as possibly neoplastic, although final pathology was pending at the time of discharge planning. Concurrent fecal occult blood test was positive, though coproculture was negative for enteric pathogens.

Despite the radiographic suggestion of pulmonary nodules, her respiratory symptoms remained mild and nonspecific. Procalcitonin levels were low (0.06 ng/mL), reducing the likelihood of bacterial infection. Ferritin levels (53.6 ng/mL) and inflammatory markers were not markedly elevated.

Differential Diagnosis

The differential diagnosis for this case initially included:

- **Chronic liver disease with decompensated cirrhosis**, despite inconclusive imaging;
- **Disseminated tuberculosis**, particularly given the chronic cough and cachexia, though no night sweats, fever, or sputum production were reported;
- **Peritoneal carcinomatosis or intra-abdominal malignancy**, especially ovarian carcinoma (supported by elevated CA-125), colorectal cancer, or hepatocellular carcinoma;
- **Pulmonary malignancy**, as suggested by radiographic findings;
- **Paraneoplastic syndromes**, potentially explaining both the gastrointestinal and systemic symptoms.

The relatively normal tumor markers other than CA-125, and the patient's good diuretic response, argued somewhat against extensive peritoneal carcinomatosis or advanced hepatocellular carcinoma, though these could not be ruled out without cross-sectional imaging. There was no evidence of peritonitis or acute abdomen, and the mild anemia was not consistent with advanced gastrointestinal bleeding.

The diagnostic workup was ongoing at the time of documentation, with plans to obtain a contrast-enhanced thoracoabdominal CT scan to evaluate for solid organ malignancy or metastatic spread. Colonoscopy with biopsy had been completed, and pathology results were awaited. Diuretic therapy was continued for ascites management, with good response. No antibiotics were initiated as no infectious focus was identified.

The clinical team planned to evaluate for further diagnostic procedures, including possible bronchoscopy or pleural biopsy, should thoracic imaging confirm solid lesions suggestive of primary or metastatic malignancy.

CONCLUSION

Progressive wasting syndrome with concomitant pulmonary and gastrointestinal manifestations presents a formidable diagnostic challenge, often eliciting an initial suspicion of malignancy due to its severe systemic involvement and ominous clinical trajectory. However, as this review

underscores, **intestinal tuberculosis (ITB)** must remain a paramount consideration in differential diagnoses, particularly in TB-endemic regions or immunocompromised populations. The striking overlap between ITB and malignancies—encompassing constitutional symptoms (fever, night sweats, cachexia), radiological findings (bowel wall thickening, necrotic lymphadenopathy, pulmonary nodules), and endoscopic features (ulcerations, strictures, mass-like lesions)—necessitates a meticulous, multidisciplinary diagnostic approach to avert misdiagnosis and inappropriate therapeutic interventions.

The diagnostic dilemma is further compounded by the limitations of conventional imaging modalities (CT, MRI) and nonspecific serological markers, which frequently fail to definitively distinguish ITB from neoplasms such as lymphoma or adenocarcinoma.

Histopathological confirmation via endoscopic biopsy—revealing caseating granulomas, acid-fast bacilli (AFB), or positive *Mycobacterium tuberculosis* PCR—remains the gold standard, yet accessibility and procedural risks may delay diagnosis. In such scenarios, adjunctive tools like **adenosine deaminase (ADA) levels** in ascitic fluid, interferon-gamma release assays (IGRAs), and PET-CT (to differentiate metabolically active granulomas from malignant lesions) can provide critical supportive evidence.

Moreover, the clinical ramifications of misdiagnosis are profound: unnecessary chemotherapy, surgical resections, or delayed anti-tubercular therapy (ATT) can exacerbate morbidity and mortality. Thus, **empirical ATT trials** may be warranted in high-prevalence settings when diagnostic ambiguity persists, provided close monitoring for therapeutic response is implemented.

Ultimately, this review highlights the imperative for heightened clinical suspicion of ITB in cases of progressive wasting with pulmonary-GI involvement, advocating for an **integrated diagnostic paradigm** that harmonizes clinical history, imaging, histopathology, and molecular diagnostics. Enhanced clinician awareness, coupled with advancements in rapid TB testing (e.g., GeneXpert MTB/RIF), can mitigate diagnostic delays and optimize outcomes for this elusive yet treatable disease. Future research should focus on validating noninvasive biomarkers and AI-assisted imaging analyses to further refine the discrimination between ITB and malignancy in complex clinical scenarios.

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Progressive Wasting Syndrome with Pulmonary and Gastrointestinal Findings Suggestive of Malignancy

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