



Small Bowel Obstruction Secondary to Abdominal Tuberculosis

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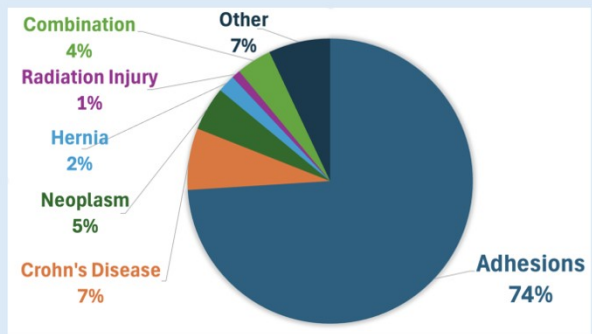


Introduction

Small Bowel Obstruction (SBO)

- Most common cause is adhesions from prior abdominal surgeries.¹ (Figure 1)
- Common presentations include abdominal pain/distention, nausea, vomiting, and the inability to pass flatus or stool.
- Treatment is patient dependent: surgical versus medical. Conservative medical management includes nasogastric tube (NGT) placement for gastric decompression, bowel rest, intravenous fluids, electrolyte repletion, and pain management.
- Early small bowel follow through with diatrizoate meglumine correlated with decreased length of stay, complications, mortality.²

Figure 1. Etiology of Small Bowel Obstructions¹



*Of the 552 patients included in a Canadian study, only 1 patient had an SBO secondary to TB

Tuberculosis (TB)

- Infectious disease caused by *Mycobacterium tuberculosis* that most commonly affects the lungs, however, can affect virtually any body system.
- In 2022 there was reportedly 10.6 million people worldwide infected with TB. The incidence rate was noted to have increased approximately 1.9% in both 2020-2021 and 2021-2022 per the World Health Organization.³
- In 2023, there was 9,633 cases of TB in the United States (US). The US alone had noted to have a 15.0% increase in incidence rate.⁴
- Abdominal TB can present in the peritoneum, solid viscera, lymph nodes, and intestines.⁵
- Presentations are often non-specific and can mimic other diagnosis such as Crohn's Disease, malignancy, and lymphoma.⁵
- Treatment includes RIPE therapy: isoniazid (INH), rifampin (RIF), pyrazinamide (PZA), and ethambutol (EMB)⁶

Case Description

HPI

- 34 year-old male with PMHx of disseminated TB with RIF and INH therapy being held for the past 9 days presented to the hospital complaining of periumbilical and left lower quadrant abdominal pain, nausea, and vomiting for 1 day
- Normal state of health 2 days prior. Ate an Asian vegetable dish the prior to symptoms starting
- Woke up with worsening abdominal pain rated 9/10, vomiting, cramping, and bloating
- Denies flatus and bowel movements for x1-2 days
- Subjective fevers

TB History

- Patient (pt) had immigrated to the US in 2008 from Cambodia. Was found to have a positive tuberculin skin test but negative chest x-ray. Completed 9 months of INH at that time
- He was admitted to the hospital in April of 2024 and diagnosed with disseminated TB and chronic Hepatitis B. Symptoms at that time were weight loss, abdominal pain, diarrhea, malaise, fever, cough, and swelling in his legs bilaterally. Imaging at that time showed apical cavities and pathological lymphadenopathy in the retroperitoneum and psoas areas
- He was initiated on RIPE (4/10/24-6/24/24). Then continued with RIF and INH since 6/25 but was recently held on 8/29 due to elevated liver function tests greater than 3x upper limit

PMHx: Disseminated TB, Chronic Hepatitis B, Hypoalbuminemia, Left inguinal hernia, Microcytic anemia, Severe protein-calorie malnutrition

PSHx: None

Family Hx: Unknown to pt

Social Hx: Denies smoking, drug, or alcohol use

ROS

- Reports: abdominal pain, nausea, vomiting, constipation, anorexia, inability to gain weight
- Denies: weight loss, fevers, chest pain, shortness of breath, cough, diarrhea, dysuria, myalgias, rashes, dizziness

Physical Exam:

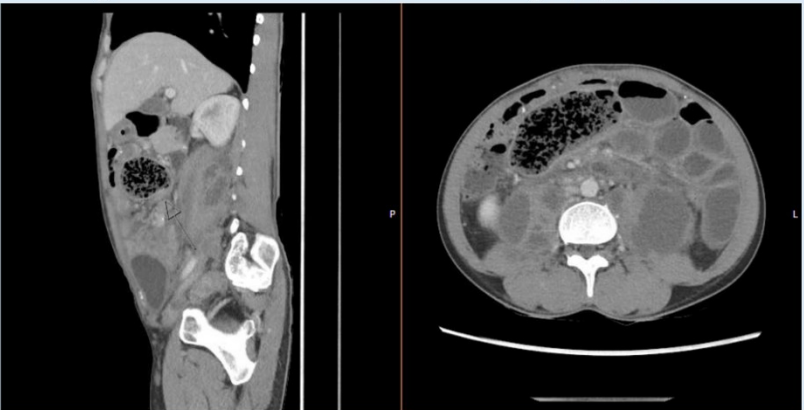
- Vital Signs: BP 129/88 mmHg, HR 88 bpm, RR 18 breaths/minute, SpO2: 98% room air, Temperature: 97.3°F, Weight 47.7kg
- General Appearance: Appears uncomfortable and fatigued in bed with occasional grimacing. Ill-appearing. Non-diaphoretic or in acute distress.
- Skin: Pale, warm, dry
- HEENT: Mucus membranes dry
- Lungs: Clear in all fields
- Heart: Regular rate and rhythm. S1 and S2 appreciated. No murmurs
- Abdomen: Tender to palpation in the periumbilical and lower quadrant regions, no guarding or rebound. No surgical scars noted. Reducible moderate size left inguinal hernia appreciated

Abnormal Labs:

- WBC 12.7
- H/H 11.9/37.0
- Abs Neutrophils 11.47
- Abs Lymphocytes 0.52
- Na 133
- AST 55
- ALT 91
- CRP 2.20

Diagnostics

Figure 2: Abdominal computed tomography (CT) scan



Discussion

- Modes of infection for abdominal TB include hematogenous spread, lymphatic system spread, and ingestion.^{7, 8}
- Testing to support a diagnosis of TB include acid-fast bacilli (AFB) stain, *Mycobacterium tuberculosis* culture, and histological findings such as granulomas.⁸
- Delays in diagnosis of abdominal TB are common and increase morbidity and mortality.⁹
- Operative findings included dense adhesions, multiple peritoneal implants, and multiple necrotic lymph nodes. Pathology resulted with necrotizing granulomas and +AFB stain. Psoas abscesses also found to have a +AFB.
- Based on the pt's PMHx and clinical findings, it is highly suggestive of the development of abdominal TB leading to the SBO presentation

Conclusion

- Abdominal TB can be difficult to diagnose as the presentation is often non-specific, dependent on site involvement, and mimics other diagnoses.
- Although not common in developed countries, the incidence of TB is continuing to rise likely due to an increase in immunosuppressed populations, elderly, air travel, and immigration
- High index of suspicion is necessary to make a timely diagnosis and rapid treatment initiation for both the SBO and underlying etiology.

Hospital Course

Day of admission	HD2	HD5	HD7	HD10	HD12
<ul style="list-style-type: none">• NGT and foley placed, Bowel Rest• Pain Management• IR, Urology, and ID consulted	<ul style="list-style-type: none">• Symptom improvement, no bowel function• Renal Ultrasound• Psoas drains placed	<ul style="list-style-type: none">• Continued to monitor for return of bowel function• NGT removed per pt request	<ul style="list-style-type: none">• Repeat CT scan- persistent dilated small bowel loops, decreased psoas abscesses with residual collection	<ul style="list-style-type: none">• Diet advanced to low fiber• TPN discontinued• Psoas drains reassessment	<ul style="list-style-type: none">• Discharged home in good condition
Hospital Day (HD) 1	HD3-4	HD6	HD8-9	HD11	
<ul style="list-style-type: none">• Small Bowel follow through attempted• Exploratory Laparotomy with Lysis of Adhesions• Pathology sent	<ul style="list-style-type: none">• Peripherally inserted central catheter (PICC) line placed• Nutrition consulted, Total parenteral nutrition (TPN) initiated	<ul style="list-style-type: none">• Reported flatus and small bowel movement• Diet advanced to clears• Cultures +AFB	<ul style="list-style-type: none">• SBFT completed- contrast appreciated in colon• Diet advanced to full liquid• Rifampin reinitiated	<ul style="list-style-type: none">• IR drain check with fluoroscopy	

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