



Primary Gastric Tuberculosis without Pulmonary Involvement presenting as Chronic Reflux with Anemia

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Introduction

- Tuberculosis (TB) is a bacterial infection caused by *Mycobacteria tuberculosis*.
- There are three stages of TB: Primary infection, latent TB, and active TB.
- Most commonly affects the lungs, but can also present with extra-pulmonary manifestations. Rarely, extra-pulmonary manifestations can be the only finding.
- Primary Gastrointestinal (GI) tuberculosis (TB) accounts for only 1-3% of TB cases worldwide. Of these cases, the ileocecal region is the most affected site.
- Gastric Tuberculosis (GTB) only accounts for 1-2% of GI TB making it one of the least common locations in the GI tract.
- Infection of the gastric tissue can be caused by hematogenous spread, extension from neighboring TB lesion, or direct infection of the mucosa.
- When present, GTB commonly presents as gastric outlet obstruction, but can also have symptoms that mimic peptic ulcer disease or malignancy.

Case

- 60-year-old Honduran male with history of Parkinson's disease presented to GI clinic for evaluation of persistent constipation and 8kg weight loss for the past 3 months.
- Associated symptoms included reflux and mild postprandial epigastric discomfort.
- Patient denied fevers, chills, night sweats, hemoptysis, melena, jaundice, cough. Other systems were unremarkable.
- No smoking, alcohol or recreational drugs. No history of TB exposure. No HIV or any other immunocompromised state. No recent travel.
- Lab workup revealed a microcytic anemia with hemoglobin of 9.3 g/dl and MCV of 79.5 fl.
- Due to red flag findings, he was scheduled for an endoscopy and colonoscopy.
- Colonoscopy was unrevealing while endoscopy showed several gastric submucosal nodules, gastritis and duodenitis.

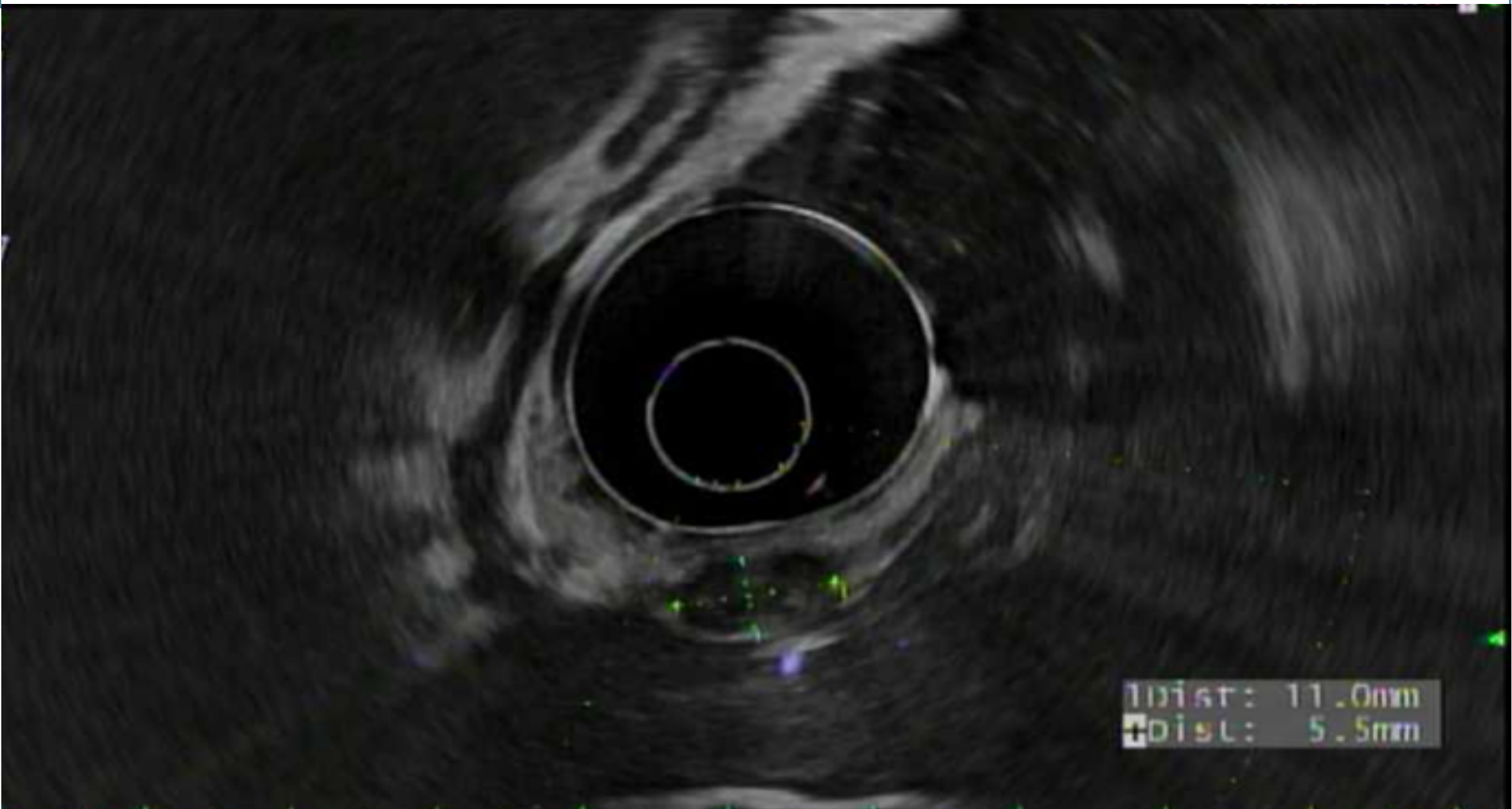


Figure 2. Endoscopic ultrasound demonstrating an 11x6mm intramural lesion originating from the muscularis propria.

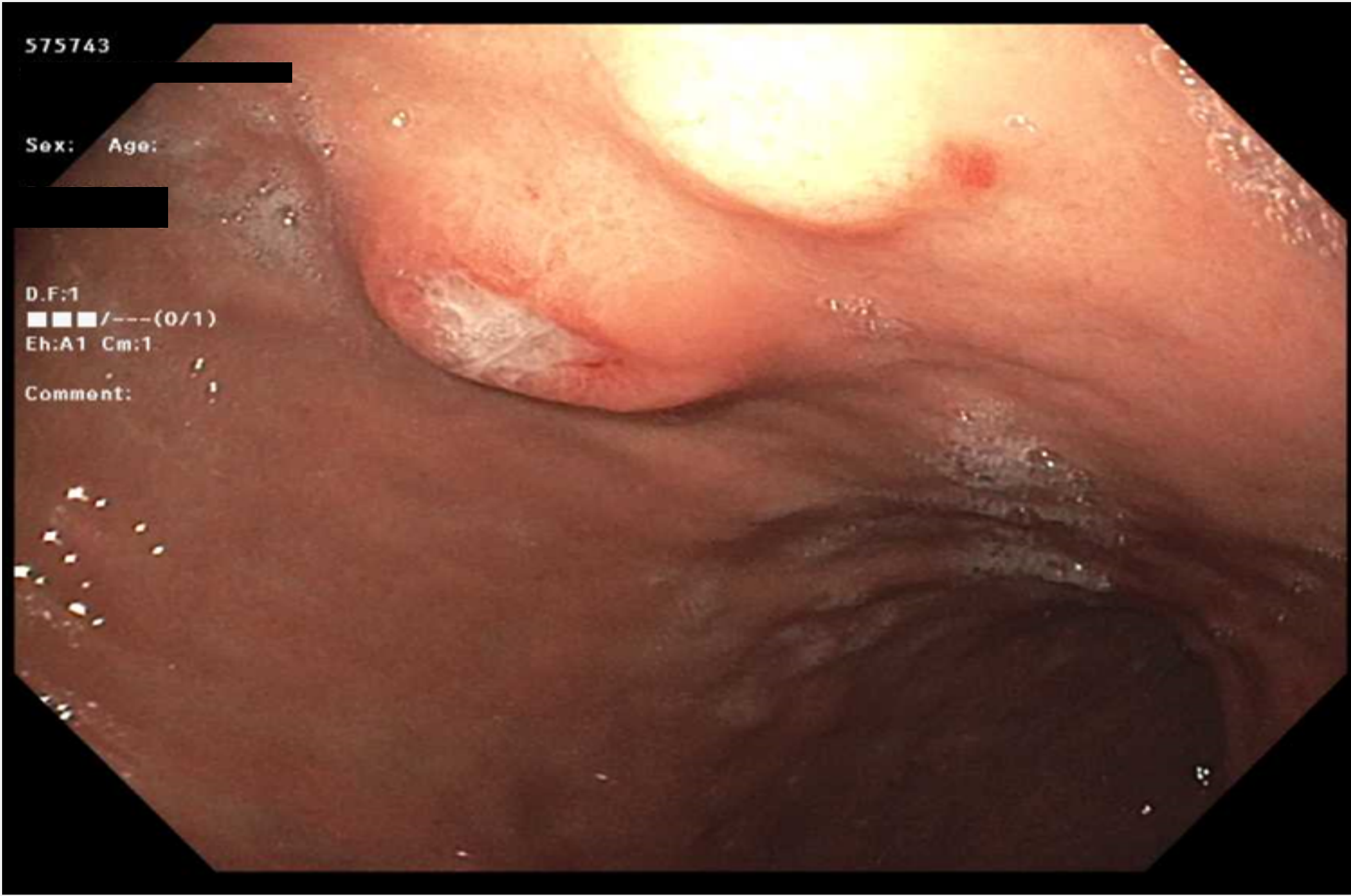


Figure 1. Macroscopic 10mm ulcerated gastric nodule and 7mm submucosal mass found on EGD.

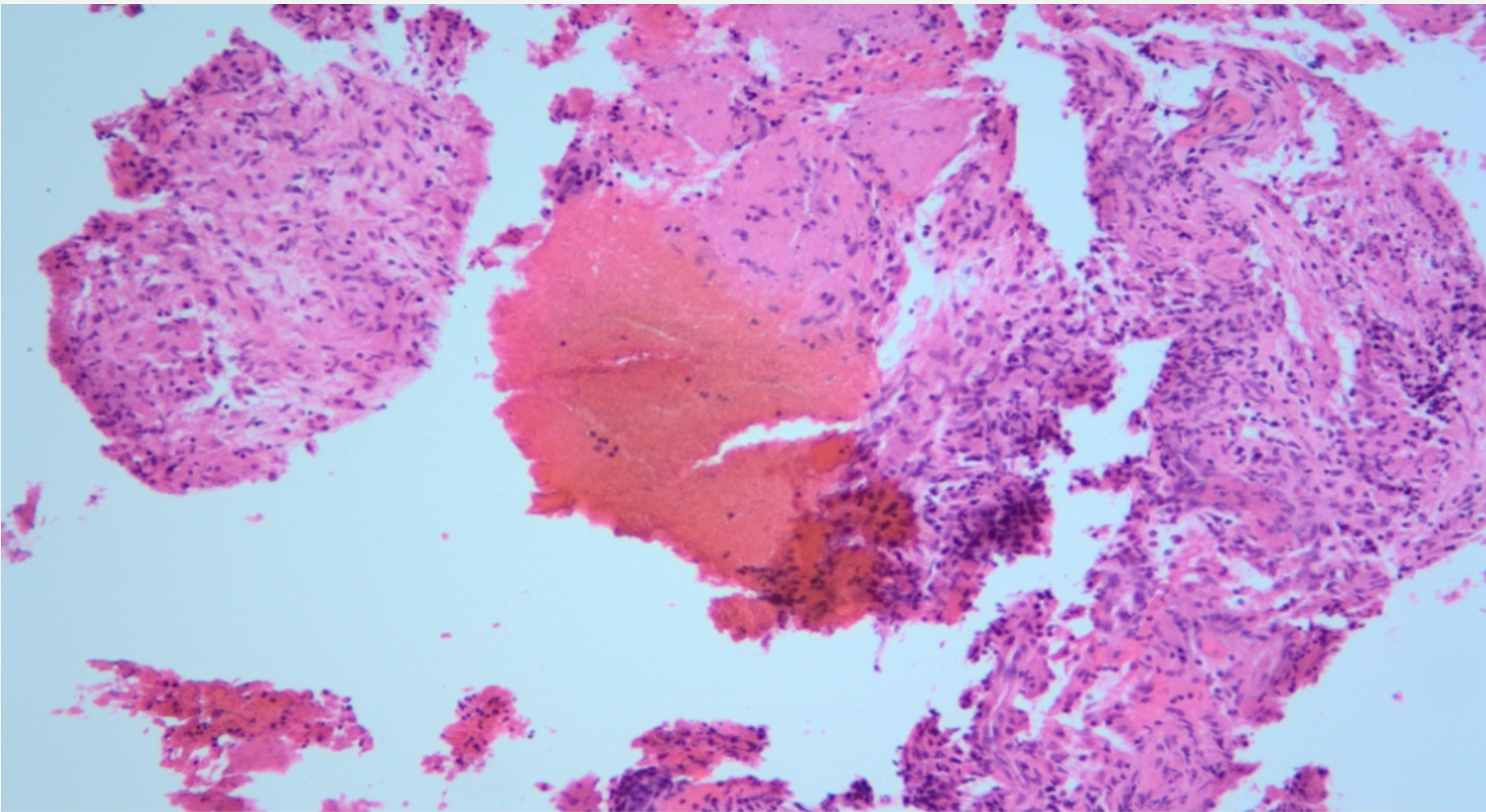


Figure 3. Histology from biopsy of gastric lesion demonstrating caseating granuloma.

Clinical Course

- Upper endoscopy was performed to investigate the anemia and chronic GERD/epigastric pain:
 - A 10 mm, ulcerated, circumferential mass with no bleeding was found on the proximal lesser curvature of the stomach body. A 7 mm, submucosal, circumferential mass with no bleeding was found on the lesser curvature of the stomach right next to the 10 mm ulcerated mass (Figure 1). A 7 mm, submucosal mass with mild overlying ulceration was also found on the anterior wall of the gastric antrum.
- An endoscopic ultrasound (EUS) was subsequently performed and two nodules were biopsied using fine needle aspiration (FNA):
 - Two oval and ulcerated intramural lesions were found in the lesser curvature of the stomach. The largest lesion was hypoechoic/heterogenous and appeared to originate from the muscularis propria (Figure 2).
 - Pathology of the gastric masses demonstrated fragments of gastric mucosa showing acute, chronic, and granulomatous inflammation with necrosis and inflamed fibrous tissue. Caseating granulomatous inflammation was identified (Figure 3).
- Acid-fast stain showed an indeterminant rod-shaped organism. Further testing included a negative TB PCR, but the patient was found to be positive for QuantiFERON-TB.
- Due to concerns for disseminated TB, computerized tomography of the chest/abdomen/pelvis was done which did not show any suspicious lesions.
- Gastric TB was diagnosed, and the patient received anti-tubercular treatment with the department of health. He completed a 12-week regimen of isoniazid 900 mg and rifapentine 900 mg once a week for latent tuberculosis with improvement in his symptoms.

Discussion

- Although rare, clinicians should be suspicious of GTB in patients native to endemic areas presenting with symptoms reflecting gastric outlet obstruction, peptic ulcer disease, malignancy, or in the workup of chronic anemia.
- The lack of pulmonary involvement as seen in this case makes it particularly challenging to identify.
- The rarity of GTB can be attributed to the bactericidal properties of gastric acid, rapid transit time, and lack of significant lymphoid tissue in the gastric wall. The gastric mucosal barrier also plays a part in preventing migration into the tissue.
- Given the chronic reflux in this patient, it is possible he had gastritis and erosion of the mucosal barrier facilitating infection.
- Caseating granulomas are the histologic hallmark of TB. PCR testing for *M. Tuberculosis* can be used as an adjunct for initial diagnosis, but a negative result does not rule out the diagnosis.
- In cases where diagnostic testing is unrevealing but clinical suspicion is high, patients are started empirically on antituberculosis therapy. Response to therapy is a proposed criterion for the diagnosis of GTB.
- Once diagnosed, patients respond well to anti-tubercular treatment.

Contact

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