CASE REPORT

Gastric Tuberculosis Mimicking Gastric Antral Vascular Ectasia: A Rare Case Report

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ABSTRACT

Gastric antral vascular ectasia (GAVE) is a rare but severe cause of gastrointestinal (GI) bleeding in the elderly, meanwhile, it is commonly associated with connective tissue diseases. The GAVE diagnosis is clinically challenging due to its little-known characteristic symptoms and limited case studies. A 43-years-old male patient with pulmonary tuberculosis complained of chronic dyspepsia and GI bleeding. Hence, gastric tuberculosis was suspected. Initially, this diagnosis was not suitable as GAVE considering that the patient had chronic GI symptoms with underlying tuberculosis, middle-age, and no other organs issue was affected except the lung, however, upper GI endoscopy discovered watermelon stripes pattern. Therefore, GAVE diagnosis was established with differential diagnosis gastric tuberculosis while histopathology results further confirmed GAVE diagnosis. Appropriate treatment was given until there was no further dyspepsia and GI bleeding. GAVE diagnosis needs to be considered in middle-aged patients with pulmonary tuberculosis as an unusual comorbid, specifically, in gastric tuberculosis-suspected patient before endoscopy due to chronic dyspepsia and GI bleeding.

Keywords: Dyspepsia, Gastric antral vascular ectasia, Tuberculosis, Watermelon stomach

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INTRODUCTION

Gastric antral vascular ectasia (GAVE), also referred to as "watermelon stomach," is a rare but significant cause of acute or chronic gastrointestinal (GI) blood loss and severe iron deficiency anemia in the elderly. It accounts for about 4% upper gastrointestinal bleeding with frequent comorbidity, including hepatic cirrhosis, kidney, heart, hypothyroidism, bone marrow transplantation, diabetes mellitus, arterial hypertension, and connective tissue diseases (1). In this case, GAVE diagnosis was problematic because pulmonary tuberculosis (TB) is a rare comorbidity, the patient is middle-aged, and no other common organs were involved.

The presence of chronic epigastric pain, nausea, vomiting, and GI bleeding made gastric TB the initial diagnosis. Following endoscopy and histopathology examination, this case confirmed GAVE diagnosis. This report aims to describe a diagnosis challenge of a middle-aged patient with relevant history and symptoms for gastric TB, yet the actual diagnosis was GAVE. It was considered that gastric TB manifestation might potentially mimic GAVE.

CASE REPORT

A 40-year-old male patient came to the emergency room with hemoptysis and dyspnea complaint on May 31st, 2020. The patient also complained of night sweats and unintended 3 kg weight loss within five days. Chest x-ray showed active pulmonary TB, but the acid-fast stain was negative for M. tuberculosis. Afterwards, TB diagnosis was established based on clinical and chest x-ray presentation. Antituberculosis therapy was initiated on June 4th, 2020, meanwhile, Rifampicin 150 mg, Isoniazid 75 mg, Pyrazinamide 400 mg, and Ethambutol 275 mg were given in 4 tablets of fixed dose combination during intensive phase. In the continuation phase, Isoniazid 150 mg and Rifampicin 150 mg were given three times weekly. After three months, the sputum evaluation was negative for M. tuberculosis. Antituberculosis therapy was continued until the patient had recovered from pulmonary TB. Moreover, the patient finished the antituberculosis regimens on November 10th, 2020.

Three months after recovering from TB, on February 2nd, 2021, the patient returned to the hospital polyclinics and complained of postprandial fullness, early satiety, epigastric pain and burning for six months without any significant dyspepsia risk factors. Meanwhile, the patients did not take these chronic symptoms seriously during the antituberculosis continuation phase therapy

until the patient noticed black stool on February 1st, 2021.

A day before the endoscopy procedure, due to GI bleeding indication, physical examination showed neither stigmata of chronic liver disease nor anemia symptoms. Meanwhile, routine diagnostic workup showed negative HBsAg, normal electrocardiography, and normal blood urea nitrogen and creatinine levels. Haemoglobin showed the lowest normal range, 12.2 g/dL (normal: 12.1-17.6 g/dL). Furthermore, gastric TB diagnosis was initially preferred to GAVE due to the following consideration; the patient is middle-aged, chronic dyspepsia history since antituberculosis continuation phase therapy without any liver, heart, kidney issue, and autoimmune diseases.

Endoscopy procedure showed hyperemic mucosa with antrum predominance, erythematous spots radially oriented towards the pylorus with watermelon stripes appearance, without any sign of recent bleeding, ulcer or varicose (Fig.1). An antrum sample was taken for H. pylori and histopathology examination. The rapid urease test and culture showed a negative result for H. pylori. Histological findings showed mucosal capillaries vascular ectasia, fibromuscular tissue proliferation indicating spindle cell proliferation (Fig.2).

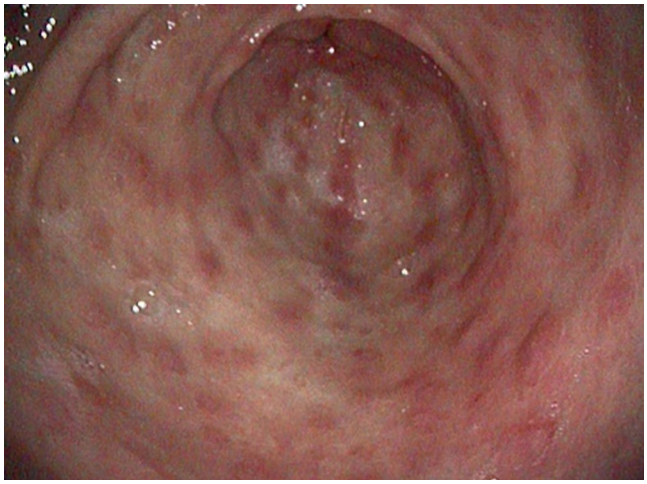

Figure 1: Endoscopy showed watermelon stripes appearance with erythematous spots radially oriented to pylorus, but it did not reveal any sign of recent bleeding

Neither endoscopic nor surgical therapy was indicated for therapy as there was no further GI bleeding event. Drug therapy prescription included Octreotide 100 mcg thrice a day for seven days, Prednisolone 5 mg once daily for seven days, Omeprazole 20 mg once daily for 8 weeks, and Sucralfate 1 g four times daily for 8 weeks. Two days post endoscopy examination, the patient was discharged without any significant complaints. Moreover, one week after the follow-up therapy control, the patient did not complain of any GI symptoms.

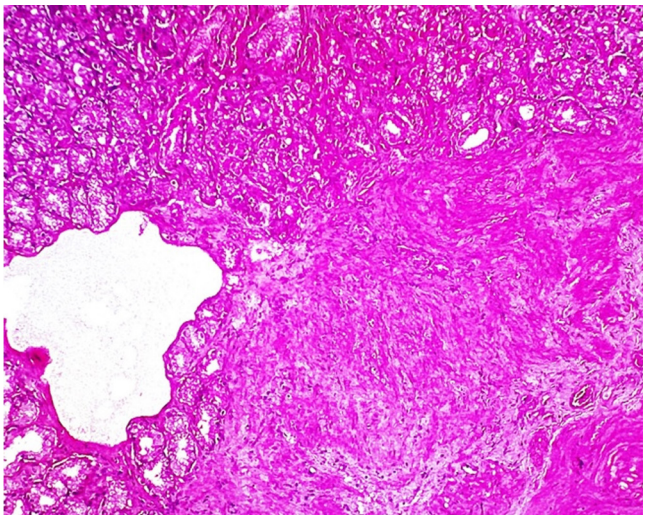

Figure 2: Histopathological findings of antrum sample confirmed GAVE diagnosis with fibromuscular tissue proliferation and vascular ectasia of mucosal capillaries

DISCUSSION

Extrapulmonary TB with GI tract involvement is difficult to diagnose because of unspecific clinical manifestations such as vomiting, epigastric pain, weight loss, upper GI bleeding, and fever. Furthermore, abdominal TB tends to induce portal hypertension and present as GI bleeding in a patient without liver cirrhosis. This occurs through compression of enlarged lymph nodes to portal vein, also known as portal vein constriction due to tissue fibrosis (2).

The pathogenesis of GAVE is still unknown, meanwhile, about 60% of cases are associated with autoimmune disease, while 30% cases with liver cirrhosis. Although GAVE is associated with liver cirrhosis, it correlates with metabolic syndrome features such as diabetes, obesity, vascular disease, and nonalcoholic cirrhosis (3). These correlations might explain GAVE cases in middle-aged patients. Besides, some studies also reported GAVE in children. GAVE development tends to be multifactorial, including mechanical stress, hormonal instability, and vasoactive substances release (1). Moreover, chronic infections such as TB might also play a role in such conditions and cause vascular ectasia in gastric mucosa. Diagnosis decision and comparison between GAVE and gastric TB is challenging when based on only clinical manifestation. Like other disease-associated GI bleeding, endoscopy plays an essential role in GAVE and gastric TB diagnosis. Gastric endoscopy of gastric TB usually shows three well-defined rounded submucosal lesions 2-3 cm diameter with lesser curve and corpus. These endoscopic findings are contrasting compared to GAVE, nevertheless, GAVE endoscopic findings tends to also vary. Moreover, endoscopy in non-cirrhotic GAVE patients are characterized by a pathognomonic watermelon striped-pattern, however, GAVE patients with liver failure show diffuse patterns (honeycomb

stomach). These endoscopic findings do not determine the prognosis, but reflect different pathophysiology (1). Histopathological features of gastric TB include chronic granulomatous inflammation with Langhans-type giant cells and small foci of caseous necrosis. GAVE histological pattern, although not pathognomonic, is indicated by these alterations: focal thrombosis, mucosal capillaries vascular ectasia, spindle cell fibrohyalinosis, and proliferation. Furthermore, GAVE is diagnosed mainly based on endoscopy. Meanwhile, for the uncertain and subtle cases, the diagnosis can be obtained from histology by identifying its histological pattern, as well as GAVE score, or Gilliam's score (1).

Asides gastric TB consideration, GAVE-suspected patients need to be distinguished from portal hypertensive gastropathy (PHG) since both represent two separate entities in terms of therapy. The differential diagnosis is based on endoscopic appearance and histological pattern. Besides, PHG endoscopy shows a combination of mosaic-like pattern, red spot lesions, and block-brown spots, meanwhile, GAVE shows either watermelon or honeycomb-stomach. GAVE, which mainly affects antrum, rarely found in the cardia, has a specific histological pattern. In contrast, fundus-corpus is the common site for PHG and has no specific histological pattern (1).

The patient was treated only by pharmacological therapy considering that no further GI bleeding was reported, and endoscopic treatment approach was not available in the health center. Several treatment options of GAVE have been proposed, including surgical, endoscopic intervention, and pharmacological (1). Antrectomy is indicated for severe refractory cases, due to its significant mortality and morbidity risks, especially in the cirrhotic patients. Meanwhile, endoscopic intervention using argon plasma coagulation is currently the most effective treatment. Hence, it needs to be considered as the first-line treatment for GAVE-related bleeding.

A wide variety of pharmacological therapies, including intravenous Cyclophosphamide, Cyproheptadine, Thalidomide, Octreotide, Prednisolone, Estrogen/Progesterone, Proton Pump Inhibitors (PPI), and Beta-blockers have been studied to treat GAVE (1). However, no single drug has shown satisfactory outcome. Only PPI, Octreotide, and Prednisolone currently represent choice therapy due to the fewer reported side effects (4).

CONCLUSION

Gastric TB mimics GAVE because the syndromes are due to gastric involvement, meanwhile, GAVE diagnosis needs to be considered in middle-aged patients with chronic dyspepsia, GI bleeding, and rare comorbidity of pulmonary TB. Furthermore, endoscopy and histopathology examination are needed to confirm GAVE diagnosis in gastric TB-suspected patients.

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