

Asymptomatic gastric tuberculosis in the gastric body mimicking an isolated microscopic erosion

A rare case report

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Abstract

Introduction: Gastric tuberculosis is rarely seen in clinical practice, which occurs mostly secondary to lung tuberculosis, intestinal tuberculosis, and other common tuberculosis. Gastric tuberculosis rarely presents as a single microscopic superficial erosion. We recently diagnosed such a case, hence reporting it herein.

Patient concerns: A 40-year-old female patient was admitted with a chief complaint of painful enlarged cervical lymph nodes. She had no other symptoms or any previous history of remarkable diseases.

Diagnosis: Physical examination found multiple enlarged cervical lymph nodes. Computer tomography revealed multiple circular well-defined soft tissue masses in the bilateral carotid sheath spaces. A cervical lymph node biopsy showed caseous necrosis with infiltration of neutrophils and lymphocytes, and most importantly, mycobacteria through staining for acid fast bacilli. Routine gastroscopy showed a 0.5 cm × 0.5 cm well-defined erosion on the large curvature of the gastric body. Gastric biopsy revealed chronic granulomatous inflammation with mycobacteria through staining for acid fast bacilli. The patient was diagnosed as having cervical lymph node tuberculosis and gastric tuberculosis.

Interventions and outcomes: She received 6 months of standard anti-tuberculosis therapy. The enlarged cervical lymph nodes shrank in size and the pain was relieved.

Conclusions: Gastroscopy should be performed to look for gastric tuberculosis if the patient presents primary tuberculosis in other organs/tissues such as cervical lymph nodes. If any small erosion is found, a biopsy is justified for checking the possibility of gastric tuberculosis.

Keywords: case report, gastric erosion, gastric tuberculosis, gastroscopy

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1. Introduction

Gastric tuberculosis is rarely seen in clinical practice, which occurs mostly secondary to lung tuberculosis, intestinal tuberculosis, and other common tuberculosis. Endoscopic manifestations of gastric tuberculosis are not specific.^[1,2] Gastric tuberculosis often presents as an irregular erosion, ulcer, submucosal bulge lesions, or gastric sinus deformation.^[3-6] It is rare to present as a single microscopic superficial erosion. Here, we report such a case of gastric tuberculosis in a patient with cervical lymph node tuberculosis.

2. Case presentation

A 40-year-old female patient was admitted to our hospital on April 23, 2021. Her chief complaint was painful enlarged cervical lymph nodes for 2 weeks. She had no other symptoms or any previous history of remarkable diseases. Physical examination found multiple enlarged cervical lymph nodes, the largest of which had a size of approximately 3 cm × 2.5 cm, with well-defined boundaries. The enlarged lymph nodes were fixed, solid on palpation, and without any ulcer over the skin. Routine laboratory tests did not show any abnormalities except for an increased erythrocyte sedimentation rate at 58 mm/hour. Cervical enhanced computer tomography revealed multiple circular well-defined soft tissue masses in the bilateral carotid sheath spaces, with the largest one (28.2 mm × 17.8 mm in size) located under

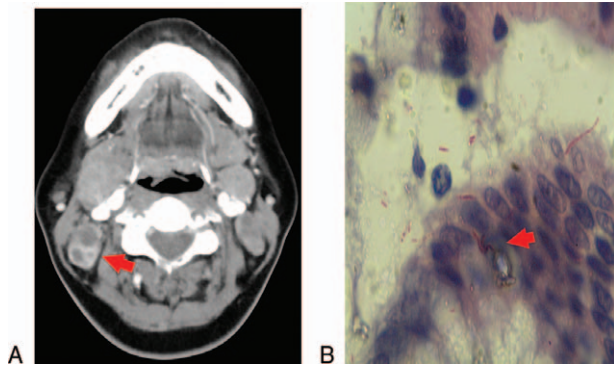


Figure 1. CT images of the patient's neck and acid-fast staining results of cervical lymph node biopsy. A. Enhancement CT image showed the uneven intensity of the lesions and the limited low-density shadow (shown by arrow) in the neck. B. Right cervical lymph node biopsy stained positive for acid-fast bacilli (magnification, 1000 \times). CT = computed tomography.

the jaw (Fig. 1A). A computer tomography scan of the chest showed no abnormal findings. Abdominal color ultrasound revealed no obvious abnormalities in the liver, gallbladder, pancreas, spleen, or kidneys. The enlarged cervical lymph nodes were suspected to be caused by lymph node tuberculosis. A cervical lymph node biopsy was performed. Bloody pus was extracted from the lymph node. Cytological evaluation showed caseous necrosis with infiltration of neutrophils and lymphocytes, and most importantly, mycobacteria through staining for acid fast bacilli (Fig. 1B). In order to further screen for any digestive tract tuberculosis, gastroscopy, and colonoscopy were performed. Colonoscopy did not reveal any abnormalities. Howev-

er, gastroscopy showed a 0.5 cm \times 0.5 cm well-defined erosion on the large curvature of the gastric body (Fig. 2A). Repeated deep excavation biopsy was performed and the tissue samples were stained with hematoxylin and eosin. Histopathological examination revealed chronic granulomatous inflammation (Fig. 2B and 2D). Mycobacteria were found in 6 consecutive tissue sections through staining for acid fast bacilli (Fig. 2C and E). Therefore, the patient was diagnosed as having cervical lymph node tuberculosis and gastric tuberculosis. She received an anti-tuberculosis therapy consisting of oral isoniazid (5 mg/kg once daily), rifampicin (10 mg/kg once daily), ethambutol (15 mg/kg once daily), and pyrazinamide (25 mg/kg once daily) in the initial 2 months, followed by isoniazid and rifampicin at the same dosages for 4 additional months. The patient's liver and kidney functions were closely monitored one week after treatment and then monthly. No remarkable side effects were observed. The enlarged cervical lymph nodes shrank in size and the pain was relieved. The treatment appeared effective.

3. Discussion and conclusion

Gastric tuberculosis is rare, which occurs mostly secondary to lung tuberculosis, intestinal tuberculosis, urinary tuberculosis, bone tuberculosis, or pelvic tuberculosis.^[2] It often occurs in people with underdeveloped economy and poor living conditions. The disease is more common in young and middle-aged people, especially women.^[1,2] The pathogenesis of gastric tuberculosis is not very clear. Several potential mechanisms have been proposed:

1. It develops secondary to any primary tuberculosis loci, such as the lungs and kidneys from which mycobacteria reach to and

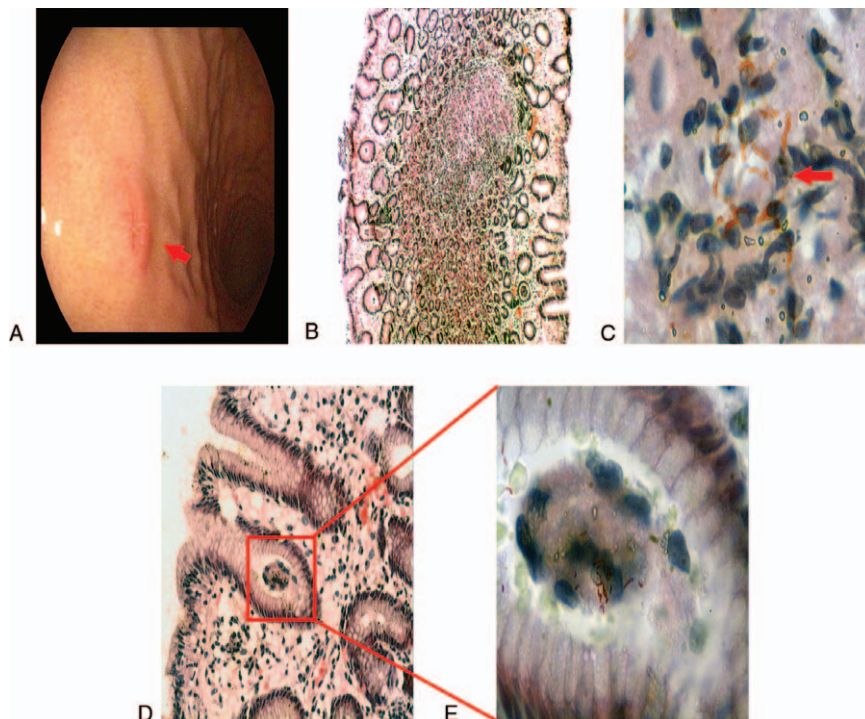


Figure 2. Gastroscopy and pathological manifestations. A. Gastroscopy (white light) shows about 0.5 cm \times 0.5 cm superficial elevation of the upper gastric bend. B and D. Gastric biopsy with hematoxylin and eosin staining shows mild chronic gastric mucosa erosion with edema and focal granulomatitis (magnification, 40 \times). C and E. Gastric biopsy stained positive for acid-fast bacilli (magnification, 1000 \times).

- colonize in the stomach through blood and/or lymphatic circulations.
- It occurs when mycobacteria colonize the stomach through oropharyngeal route in a patient with any mucosal barrier damage after gastric mucosa injury and reduced gastric secretion, thus the germicidal self-purification effect of the gastric juice is weakened; or, the patient has any disorders of gastric motility and decelerated evacuation, leading to prolonged time of mycobacteria staying in the stomach and forming an infection locus.
 - A tuberculosis locus in an adjacent organ spreads to and infiltrate through the gastric wall, thus forming a gastric tuberculosis locus.^[7,8]

In this case, the patient had cervical lymph node tuberculosis, without any tuberculosis in the lungs or adjacent organs. Therefore, we speculate that her gastric tuberculosis was likely due to blood and/or lymphatic circulation of mycobacteria to the stomach. The clinical symptoms of gastric tuberculosis are non-specific. Small tuberculosis lesions in the stomach are often asymptomatic. Large lesions may show early symptoms similar to chronic gastritis, gastric ulcer, and gastric cancer, such as abdominal pain and abdominal distension. The patient may vomit if complicated with pyloric obstruction, while a few patients may have upper gastrointestinal bleeding. Gastric tuberculosis shows in a variety of forms that are non-specific under gastroscopy. Literature reports describe as irregular erosions, ulcers, or submucosal bulge lesions.^[9–12] In many cases, it is often misdiagnosed as gastric malignant tumors.^[4,6,9] Severe gastric tuberculosis can lead to gastric sinus deformation^[5] and pyloric obstruction.^[12] The antrum and prepyloric regions (especially the posterior wall) are the most common sites of gastric tuberculosis, which is presumably related to the fact that the gastric sinus area has mucosal pyloric glands in which mycobacteria tend to colonize.^[13–14] This case presented no clinical symptoms of the gastrointestinal tract and was found by routine gastroscopy screening. What unusual is that the small lesion may often be missed if not carefully examined. The diagnosis was made possible only after microscopic examination of the biopsied tissue with staining for acid fast bacilli. To the best of our knowledge, gastric tuberculosis of such a small lesion has not been reported in the literature.^[14] In conclusion, this case suggests that gastroscopy should be performed to look for gastric tuberculosis if the patient presents primary tuberculosis in other

organs/tissues such as cervical lymph nodes. If any small erosion is found, a biopsy is justified for checking the possibility of gastric tuberculosis.

Author contributions

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