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ABOUT COVER

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Revisiting tuberculosis as a cause of gastric outlet obstruction: Insights from a case report

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Abstract

Gastroduodenal tuberculosis (GD-TB) is exceptionally rare. The clinical manifestations of gastrointestinal TB are diverse and non-specific, which makes diagnosis difficult, leading to delayed diagnosis and high mortality. As a peer-reviewer of *World Journal of Clinical Cases*, I would like to share my opinion on the article published by this journal. The patient had no family history of TB or contact with people with TB. Primary GD-TB presenting as gastric outlet obstruction and normal findings of thoracic computed tomography increased the difficulty of diagnosis and treatment in this patient. The diagnosis and treatment scheme of this typical case have reference value for the clinical treatment of GD-TB.

Key Words: Tuberculosis; Gastrointestinal tuberculosis; Gastric outlet obstruction; Gastroduodenal tuberculosis; X pert; Interferon- γ release assay

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Core Tip: We comment on the article Ali *et al* published in *World Journal of Clinical Cases*. In that report, the patient had no family history of tuberculosis (TB) or contact with people with TB. Primary gastroduodenal TB presenting as gastric outlet obstruction and normal findings of thoracic computed tomography increased the difficulty of diagnosis and treatment in this patient. This typical case is worthy of discussion and clinical study by clinicians.

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LETTER TO THE EDITOR

Tuberculosis (TB) is a chronic granulomatous disease and has high morbidity and mortality rates despite its status as a treatable disease. Gastroduodenal TB (GD-TB) is exceptionally rare[1] and the pathogenesis of the disease is not fully understood. It presents with various manifestations, including gastric outlet obstruction (GOO), gastric ulcer, upper gastrointestinal hemorrhage and gastric or periampullary tumors.

The occurrence of GOO is mainly due to invasion of the gastric wall or intestinal wall by *Mycobacterium tuberculosis*. Enlargement of the lymph nodes around the gastric wall and the duodenum may also cause external compression resulting in obstruction. The clinical manifestations of gastrointestinal TB are diverse and non-specific, which makes diagnosis difficult, leading to delayed diagnosis and high mortality.

Indications for surgery in patients with primary tuberculosis should be strictly controlled

Ali *et al*[2] reported a case of primary GD-TB presenting as GOO. The patient had no family history of TB or contact with people with TB. Normal findings of thoracic computed tomography (CT) increased the difficulty of diagnosis and treatment in this patient. This typical case is worthy of discussion and clinical study by clinicians.

Lesions can be detected by preoperative abdominal CT and upper endoscopy biopsy. However, due to the lack of specificity, it is difficult to provide confirming evidence for treatment. Endoscopy can directly observe the lesion and extract tissue for pathological examination. This is of great significance for the diagnosis and differential diagnosis of GD-TB. However, biopsy must be multi-site and deep sampling to obtain submucosal TB foci.

Notably, in this case, acid fast bacteria staining and Gene X pert testing were not performed due to the absence of peritoneal ascites detected during the operation. Guidelines recommend a positive Tuberculin Skin Test (TST) and interferon- γ release assay (IGRA) as important indicators for the diagnosis of primary GD-TB. However, in countries where the BCG vaccine is administered, TST testing is not specific[3]. The World Health Organization has recommended Gene X pert MTB/RIF for extrapulmonary TB detection, but its low sensitivity to gastrointestinal TB limits its use in the diagnosis of primary GD-TB. However, for patients with insufficient diagnostic evidence, TST, IGRA and X pert still have some complementary and auxiliary diagnostic roles.

Indications for surgery should be strictly controlled in patients with primary GD-TB. When patients have serious complications such as complete obstruction, acute perforation, massive bleeding, *etc.*, surgical treatment may be required. In that case report, the authors did not opt for intraoperative frozen section examination. According to our clinical experience, intraoperative frozen section diagnosis has its inherent limitations and risks. Due to its rapid preparation, there may be alterations in cellular morphology, and it does not permit auxiliary tests such as immunohistochemistry, resulting in a generally lower accuracy compared to paraffin sectioning. For gastrointestinal TB, the specimens may contain viable pathogens, and the process of intraoperative freezing could potentially increase the risk of pathogen exposure and transmission. Therefore, when considering intraoperative frozen section examination, physicians need to make decisions based on the specific conditions of the lesion, the surgical requirements, and the indications and limitations of intraoperative freezing. Gastrointestinal TB is more likely to be diagnosed preoperatively by other diagnostic methods (such as biopsy, imaging examinations, *etc.*) to avoid the risks and uncertainties that may be associated with intraoperative freezing.

The differential diagnosis of gastric TB includes conditions such as peptic ulcers, gastric cancer, *Helicobacter pylori* gastritis, lymphoma, and gastrointestinal stromal tumors. Given the inability to perform intraoperative frozen section pathology to ascertain the nature of the lesion, the Roux-en-Y procedure is suitable for treating GOO caused by various etiologies, including tumors, ulcers, and other factors. Therefore, the authors opted for Roux-en-Y anastomosis to address GOO in this patient. This procedure can prevent certain complications and improve digestive function, contributing to enhancement of the patient's quality of life. Postoperatively, the resected distal antral edge and enlarged mesenteric lymph nodes exhibited typical granulomatous inflammation on histopathological examination, further supporting the diagnosis of TB.

CONCLUSION

In conclusion, at present, no single detection method can effectively diagnose primary GD-TB. Comprehensive evaluation should be carried out in combination with patient history, physical examination and various auxiliary examinations. Although gastrointestinal TB often coexists with TB in other organs, such as pulmonary TB, isolated gastrointestinal TB, which affects only the gastrointestinal tract without apparent TB in other organs, can occur. Isolated gastrointestinal TB may be challenging to diagnose due to its atypical symptoms. Therefore, the authors contend that primary gastric TB, especially when it manifests as GOO, frequently poses a diagnostic challenge. In regions with a high prevalence of TB, there is a need to enhance vigilance for such conditions. Therefore, we assume that in the diagnosis and treatment of gastric TB, mere observation of the disease's superficial manifestations is insufficient. It is only through a comprehensive pre- and postoperative examination protocol that the accuracy of diagnosis can be significantly enhanced, thereby effectively preventing misdiagnosis and mistreatment. Ultimately, this approach aims to improve the quality of life and prognosis of patients.

FOOTNOTES

Author contributions: Yin ZT designed the letter; Meng J wrote the paper; Zhang LM, Wang ZG, Zhao X, Bai HX, Wang Y, Chen DY, Liu DL, Ji CC, Liu Y, Wang L, Li BY collected and collated the literature. All authors have read and approved the final manuscript.

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