CASE REPORT

Gastric Tuberculosis Simulating Gastric Malignancy: Case Report and Review of Literature.

Ahmadu MS[1], Luntsi G[2], Umar UH[1], Farate A[1]

ABSTRACT

Background: Gastric tuberculosis (TB), occurring as primary or secondary infection, is a rare manifestation of extrapulmonary tuberculosis infection and the signs and symptoms of this infection are nonspecific and can simulate gastric neoplasms. This case report aimed to draw attention to the possibility of gastric TB simulating a gastric malignancy and to remind clinicians to consider gastric TB as a differential diagnosis in a patient presenting with features simulating gastric tumour, especially when there is past history of PTB. We, therefore, present a rare case of secondary gastric TB simulating gastric malignancy in a 45-year-old man with past history of pulmonary tuberculosis.

Keywords: Gastric tuberculosis, Gastric malignancy, Pulmonary tuberculosis, Diagnostic dilemma.

[1]Radiology, University of Maiduguri Teaching Hospital, Maiduguri, Nigeria
[2]Medical Radiography, College of Medical Sciences, University of Maiduguri, Maiduguri, Nigeria

Corresponding Author:
Dr. Ahmadu Muhammad Sani
Department of Radiology, University of Maiduguri Teaching Hospital, PMB 1414, Maiduguri, Borno State, Nigeria.
Email: drahmadums@unimaid.edu.ng
Phone: +234 705 588 2425

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Introduction

Tuberculosis may affect any part of the gastrointestinal tract with the ileo-caecal region as the commonest site of involvement in about 90% of cases.[1-3] Gastric tuberculosis (TB) is rare and usually associated with pulmonary tuberculosis or an immune-deficient state.[4-6] Gastric and duodenal tuberculosis each constitute about 1% of cases of gastrointestinal tuberculosis in the tropics.[7] Gastric TB is more common in adults, and males are more frequently affected than females.[4-7]

Four major pathophysiologic mechanisms are proposed for gastrointestinal tuberculosis, namely; haematogenous spread, swallowing of infected sputum, ingestion of contaminated milk or food, and contiguous spread from adjacent intra-abdominal organs.[8]

However, it has been postulated that the reasons for the rarity of gastric TB are due to the presence of acidic medium and scarcity of lymphoid tissue in the stomach, integrity of gastric mucosa and active gastric motility. [9, 10]

Because of chronic and nonspecific clinical and radiological findings mimicking several diseases, such as peptic ulcer, gastric malignancy, gastric outlet obstruction, gastrointestinal histoplasmosis, sarcoidosis, or even pyrexia of unknown origin (PUO), the diagnosis of the gastric TB may sometimes be confusing and, therefore, requires a high index of suspicion.[4-6] The patients' subjective complaints on admission should guide the diagnostic procedures.[6]

This report presents a rare case of secondary gastric TB simulating gastric malignancy in a 45-year-old man with past history of pulmonary tuberculosis.

Case Presentation: We report the case of a 45-year-old business man who resides in Pompomari area of Maiduguri and presented to the general outpatient department (GOPD) of the University of Maiduguri Teaching Hospital (UMTH), Maiduguri, Nigeria with seven months history of weight loss, low grade fever, loss of appetite, general body weakness, and four months history of epigastric pain, feeling of gastric fullness, nausea, occasional haematemesis and passage of bloody stools. He had visited several hospitals and was given many medications including anti-ulcer drugs without much improvement.

Three years prior to presentation, he was admitted in a peripheral hospital on account of about two months history of chronic cough, weight loss and fever to which he admitted to been diagnosed as pulmonary tuberculosis (PTB).

He was given a six-month course of anti-TB drugs at that time to which he remarkably improved after the completion of the drugs. Patient was a known case of peptic ulcer diagnosed ten years ago not complying with medication.

On general physical examination, he was found to be chronically ill-looking, wasted (weight = 43.5kg), febrile to touch, pale, anicteric. Axillary and cervical lymph nodes were enlarged. No pitting pedal oedema. Abdominal examination revealed scaphoid abdomen with mild-moderate tenderness at the epigastric region. Examination of other systems was essentially normal.

Previous chest radiograph (Fig. 1) taken three years prior to presentation revealed fibrocavitatory lesions involving the right upper lobe bounded inferiorly by the transverse fissure. A homogenous opacity blunting the right costophrenic sulcus and tracking along the right lateral chest wall indicating pleural fluid was noted. A repeat chest radiograph done on admission (Fig. 2) showed less severe changes in the right upper zone with some resolution of the previous radiographic features when compared with the first chest radiograph. The left lung field showed pleural calcifications especially in the left upper and mid zones.

Barium meal (Fig. 3) was done which showed multiple irregular filling defects involving most of the greater curvature and the antrum. The duodenum and follow-through projections were normal. Abdominal ultrasonography (Fig. 4) showed multiple matted para-aortic lymph nodes. However, the liver, pancreas, spleen and both kidneys were normal. There was no evidence of ascites seen.

Laboratory investigations showed PCV of 28%, lymphocytosis (48%), erythrocytes sedimentation rate (ESR) was 18mm/hr and Mantoux test was negative. Serial sputum and gastric washout examination did not yield mycobacterium or any other microorganism. Serum electrolytes, urea, and creatinine were also normal. Patient was negative for the retroviral antibodies.

Based on the clinical history of chronic weight loss, epigastric pain, feeling of gastric fullness, haematemesis, melena stools, previous diagnosis of peptic ulcer, lymphadenopathy (axillary and cervical nodes) and the findings of the barium meal, a tentative diagnosis of gastric neoplasm was made. However, the possibility of secondary gastric TB was still entertained as differential diagnosis based on the past history of PTB, fever, and the findings of para-aortic lymph nodes on abdominal ultrasonography. CT scan was not done because of unavailability at the time the patient presented.

Endoscopy revealed an extensive polypoidal growth in the region of the greater curvature and antrum with associated ulceration and scarring of the surrounding gastric mucosa. Biopsy taken at endoscopy was positive for Acid Fast Bacilli (AFB) on Ziehl-Neelsen (ZN) stain, and histology showed gastric mucosa composed of caseation necrosis with Langerhans giant cells confirming the diagnosis of gastric TB.

Patient was then placed on a six-month regimen of anti-TB drugs consisting of an intensive phase of two months of isoniazid (INH), rifampicin (RIF), pyrazinamide (PZA), and ethambutol (EMB) followed by a continuation phase of four months of INH and RIF. His anti-ulcer medication was also reinstituted. After one month and with signs of remarkable improvement in his symptoms, the patient was discharged home on medication and monthly follow-up. Two months into follow-up, the patient showed good response to the treatment; he regained weight and the abdominal symptoms had disappeared.

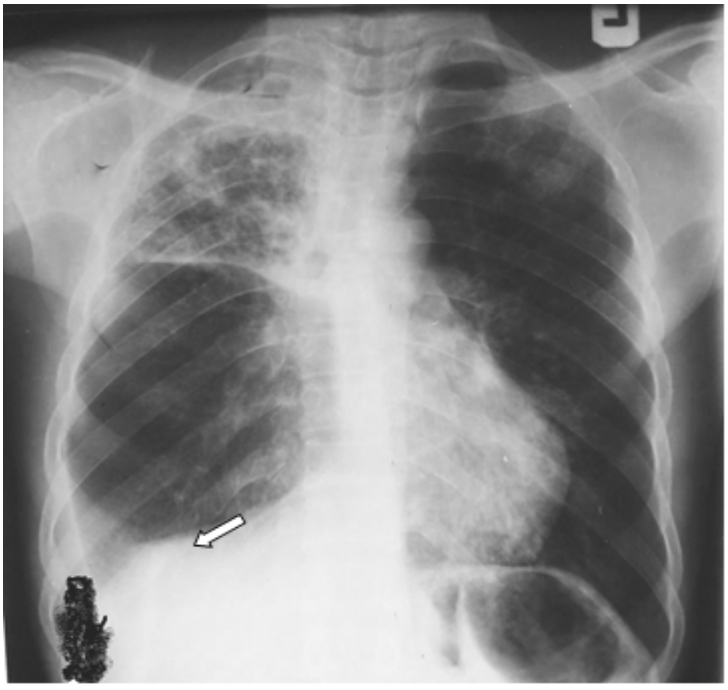

Figure 1: A posteroanterior chest radiograph taken three years prior to presentation showing fibrocavitatory lesions involving the right upper lobe bounded inferiorly by the transverse fissure. A homogenous opacity blunting the right costophrenic sulcus and tracking along the right lateral chest wall indicating pleural fluid was noted (white arrow).

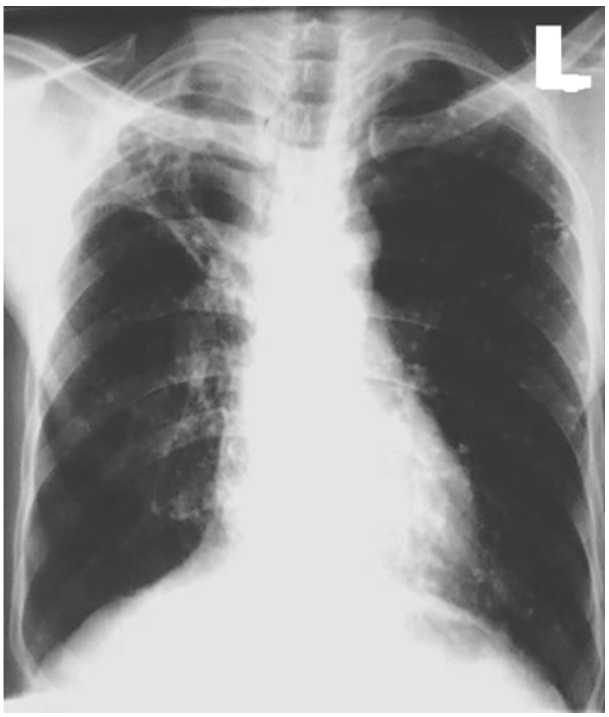

Figure 2: Repeat PA chest radiograph, taken on admission, showing less severe changes in the right upper zone with some resolution of the radiographic features when compared with the previous chest radiograph (Fig. 1). The left lung field showed pleural calcifications especially in the left upper and mid zones.

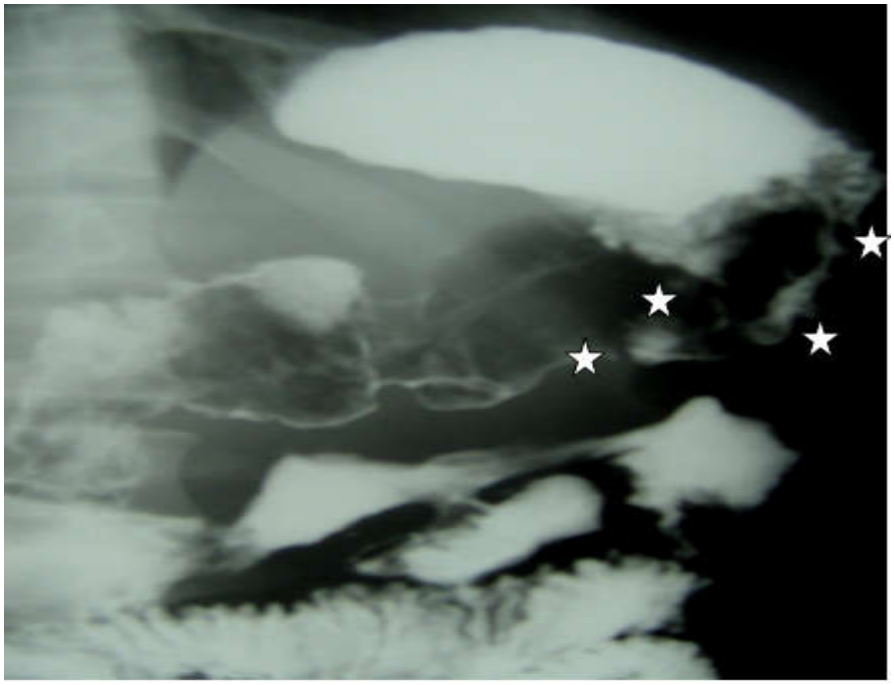

Figure 3: Barium meal showing multiple irregular filling defects and scarring involving the greater curvature of the stomach and antrum (white stars) with associated narrowing of the antrum.

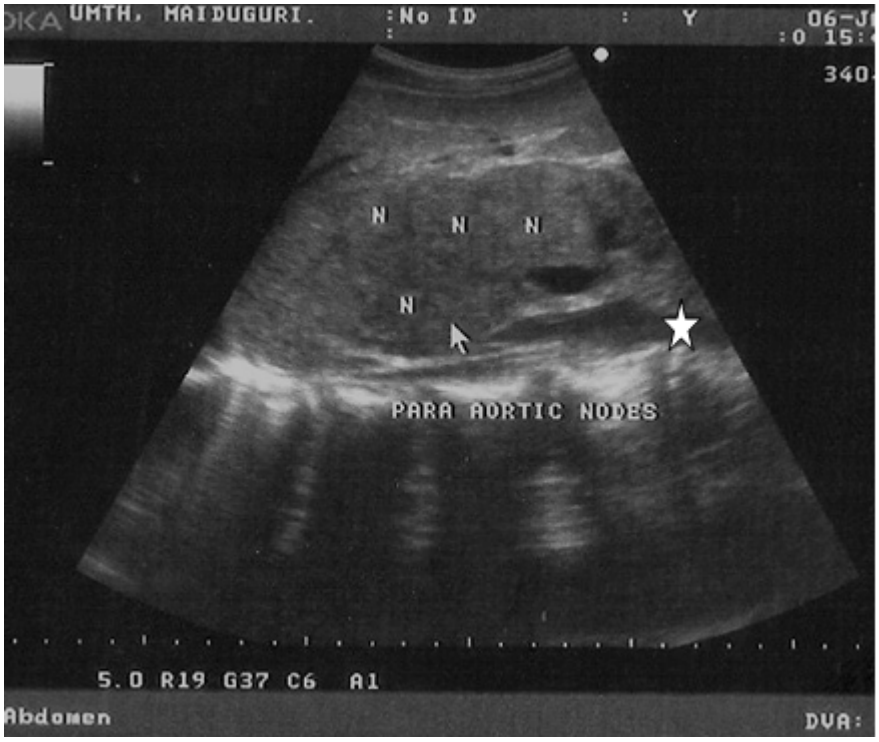

Figure 4: Abdominal ultrasonography (longitudinal view) showing multiple matted para-aortic lymph nodes (N). Aorta was depicted by the white star.

Discussion:

TB is a worldwide leading cause of infectious morbidity and mortality.[11] Disseminated TB is defined as tuberculous infection involving the blood stream, bone marrow, liver, or two or more non-contiguous sites, or miliary TB.[12] Gastric TB is a rare extrapulmonary variety of tuberculosis, with an increasing incidence in the last decades. The diagnosis of gastric TB is always a challenge, and it is difficult to make the correct diagnosis.[13-15] Gastric tuberculosis is a rare presentation of extrapulmonary tuberculosis infection with a reported incidence of less than 0.2-1% on routine gastric biopsies.[4-7] However, the frequency of gastric tuberculosis increases dramatically to 4.5% in individuals with moderate pulmonary tuberculosis and 25% in those with severe disease.[2] It was reported to be more common in males than females (3:1) and in those aged 20–40 years.[4-7] The case presented is in conformity with the findings of secondary gastric TB occurring in patients with past history of pulmonary tuberculosis. The patient was also a male, though he was 45 years at the time of presentation.

Gastric TB can have varied and non-specific clinical presentation, frequently mimicking other common and rare gastric diseases.[4-7] Commonly, it may mimic peptic ulcer disease, gastric malignancy, gastric lymphoma, gastric outlet obstruction, gastrointestinal histoplasmosis, sarcoidosis, or even pyrexia of unknown origin (PUO); sometimes making its diagnosis difficult on clinical presentation alone. Okoro and Komolafe4 reported two patients of gastric tuberculosis with unusual presentations. One of their patients was an elderly man initially suspected to have gastric malignancy but was subsequently found to be extensive, complicated gastric tuberculosis coexisting with chronic peptic ulcer disease. The second patient was a female who presented with gastro-bronchial fistula of tuberculous origin. Kim et al[10] have also

reported a case of gastric TB mimicking advance gastric carcinoma. The case reported also presented with clinical features suggestive of gastric malignancy as in the cases of Okoro and Komolafe, and Kim et al but was later confirmed to be gastric TB by endoscopy, microbiological and histological investigations. In addition, the case presented in this report is a known peptic ulcer patient with a history of pulmonary TB. However, he did not have gastro-bronchial fistula as reported by Okoro and Komolafe in the report of their second patient.

Although, the barium meal done in the case presented did not specifically indicate the diagnosis of gastric TB, previous and recent chest radiographs of the patient were in support of PTB which may have been the source of the mycobacterium tuberculosis for the patient's gastric TB. This may have also followed prolonged swallowing of bacilli laden sputum by the patient over time. Gastric TB may also develop from other GI sites due to haematogenous spread or spread from adjacent coeliac lymph nodes, with the most common location for gastrointestinal TB being the ileocecal region.[2] This was, however, not ascertained in the case reported.

Gastric tuberculosis has also been reported to be associated with an immuno-deficient state, and many cases reported in developed countries are in immuno-depressed patients, particularly those with HIV infection.[7] The case presented in report was HIV negative and had no history of use of immuno-suppressing medication. The antrum and pre-pyloric regions are the most common sites of tuberculous lesions in the stomach.[9] In the case presented the greater curvature was involved in addition to the gastric antrum.

The clinical features of gastric TB are variable but may include weight loss, epigastric pain and/or mass, fever, anorexia, constipation, haematemesis, melena stools, and ascites.[4-7] The patient presented in this case report had all the above symptoms and signs except for the constipation and ascites. He also had generalized body weakness, feeling of gastric fullness, and lymphadenopathy (axillary and cervical).

Radiological evaluation of patients with gastric TB involves the use of plain radiographs (usually chest and abdomen), barium meal, computed tomography, abdominal ultrasonography, and radionuclide scans in cases of massive GI bleeding.[5-10] Plain chest radiograph may show PTB while abdominal radiographs may show features of gastric outlet obstruction.[5, 6] Barium studies remain superior for demonstrating mucosal lesions in gastric TB.[8] Ultrasonography may reveal ascites, hepatosplenomegaly, and para-aortic lymphadenopathy.[7] CT demonstrates only slight, symmetric mural thickening and a few small regional nodes.[1] Although, plain abdominal radiograph was not done in this patient, the chest radiograph was helpful in the diagnosis of PTB in the case presented. The barium meal done had shown features of irregular filling defects within the stomach. Abdominal ultrasonography of the patient presented showed multiple matted para-aortic lymph nodes.

Anaemia and an elevated ESR are haematological findings in a patient with gastric TB. However, these are nonspecific findings and may not aid much in diagnosis. Tuberculin test may be positive but is of not much value as it does not differentiate between an active and inactive disease. Confirmation of the diagnosis of tuberculosis at any site is ideally established by biopsy taken at endoscopy or laparotomy which demonstrates AFB on smear or mycobacterial culture from the tissue or by demonstrating caseating granulomas at histopathology.[4-6]

Although laparotomy may be a treatment option for gastric TB, anti-TB chemotherapy forms the mainstay of treatment when diagnosis of gastric tuberculosis is made.[4] The patient presented in this case report benefitted remarkably from anti-tuberculous

chemotherapy as evidenced by the weight gain and resolution of the admitting abdominal presenting complaints.

Conclusion: Although gastric tuberculosis is rare, it is imperative for clinicians to have a high index of suspicion for gastric TB in a patient presenting with clinical features of gastric tumour, especially when there is past history of PTB.

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