

## Case Report

# Isolated Gastro-Duodenal Tuberculosis Mimics Peptic Ulcer Disease in a Young Female

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### Abstract

*Intestinal tuberculosis (TB) most commonly affects ileo-caecal region. Isolated gastric and duodenal involvement without pulmonary infection is rare. The presentation of these patients varies. Patients may present with haematemesis, non-healing chronic ulcer, mimicking malignancy, gastric perforation and gastric outlet obstruction. High degree of suspicion is needed for early diagnosis of gastro-duodenal TB. A young female patient who was being treated as a case of non-healing chronic ulcer was referred for treatment. Histopathological examination of endoscopic biopsy specimen of the patient showed presence of granulomas composed of epithelioid cells and Langhan's giant cells with caseation with no evidence of tuberculosis at pulmonary or other body sites. After anti-tubercular chemotherapy there was resolution of symptoms and healing of ulcers. This case of isolated gastro-duodenal TB is reported for its rarity.*

**Key words:** Gastro-duodenal tuberculosis; Peptic ulcer; Anti-tubercular chemotherapy

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## Introduction

Extrapulmonary tuberculosis (TB) accounts for 10–15% of all cases of TB and the incidence reaches higher in patients with immunodeficiency.<sup>1</sup> Gastro-intestinal tract (GIT) is the sixth most frequent extrapulmonary site involved by tuberculosis (TB) and ileo-caecal region is the most common site of involvement in GIT-TB.<sup>2</sup> Stomach and duodenal TB comprises 1% each of abdominal TB.<sup>3</sup> The presentation of these patients varies. Patients may present with haematemesis,<sup>4</sup> non-healing chronic ulcer<sup>5</sup>, mimicking malignancy<sup>6</sup>, gastric perforation<sup>7</sup> and gastric outlet obstruction.<sup>8</sup> Primary isolated gastric TB in absence of pulmonary TB in immune competent host is rare.<sup>9</sup> This rare occurrence of isolated gastric TB presenting as peptic ulcer disease in a patient without evidence of

pulmonary TB or immunodeficient state is presented here.

## Case report

A 23-year-old female student presented with complaints of pain in the upper abdomen, loss of appetite and vomiting for last 5 months. The pain was constant, burning in nature and did not radiate to any site. Pain was aggravated by taking meals and was occasionally reduced by taking antacid. She also complained of occasional vomiting which occurred after taking meals. Vomitus contained food materials but no blood. Patient also complained of weakness, loss of appetite and weight loss about 7 kg in two months. There was no history of melaena, alteration of

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bowel habit, cough, haemoptysis and chest pain. The past history and family history were not contributory. On examination, the patient was of average built and there was mild pallor. There was no icterus, cyanosis, clubbing, pedal oedema or generalised lymphadenopathy. Abdominal examination failed to reveal any lump or organomegaly, visible peristalsis and ascites. A clinical diagnosis of peptic ulcer disease was made. Investigations are plotted in Table I. The haematological and biochemical investigations were normal except low haemoglobin (9.9 gm/dL). ESR was 47 mm in 1<sup>st</sup> hour. Chest radiography, MT test, USG of whole abdomen, barium follow-through and colonoscopy were normal. Upper GI endoscopy revealed erythematous and congested mucosa of the whole stomach. Ulceration with friable mucosa and contact bleeding were seen more marked in the body and part of the fundus of the stomach (Fig 1). Ulcers were also seen in the bulb and post-bulbar area (Fig 2).

A punch biopsy was taken from the body and fundus of the stomach. The histopathological examination of the biopsy specimen revealed presence of granulomas composed of epithelioid cells and Langhan’s giant cells with caseation. Moderately dense infiltrate of chronic inflammatory cells was also present (Fig 3). Patient was given four-drug anti-tubercular treatment with isoniazid, rifampicin, pyrazinamide, and ethambutol. After two months of treatment, pyrazinamide and ethambutol were stopped and patient was continued on two-drug treatment for four months. Supportive treatment in the form of antiemetics and proton pump inhibitors were also given. Within two weeks of starting the treatment patient reported symptomatic improvement. Follow-up endoscopy was done two months after starting treatment. There was resolution of endoscopic lesion (Fig 4 and 5). The patient was disease-free six months after treatment of primary gastric tuberculosis.

Table I: Results of investigations

Investigations	Results
Haematology	Hb 9.9 gm/dL, ESR 47 mm (1 <sup>st</sup> hr), WBC 4980/cu mm, MCV 64.8 fl
ALT	16 U/L
Mantoux test	04 mm
Chest x-ray	Normal
USG of abdomen	Normal
Barium follow-through	Normal
Endoscopy of upper GIT	Mucosa of the whole stomach is erythematous and congested. Ulceration with friable mucosa and contact bleeding seen more marked in the body and part of the fundus. Ulcer is also seen in the bulb and post-bulbar area.
Histopathological examination of the biopsy specimen	Presence of granulomas composed of epithelioid cells and Langhan’s giant cells with caseation. Moderately dense infiltrate of chronic inflammatory cells is also present.



Fig 1. Ulcer seen at the body of the stomach



Fig 2. Ulcer seen at the bulb (duodenum)

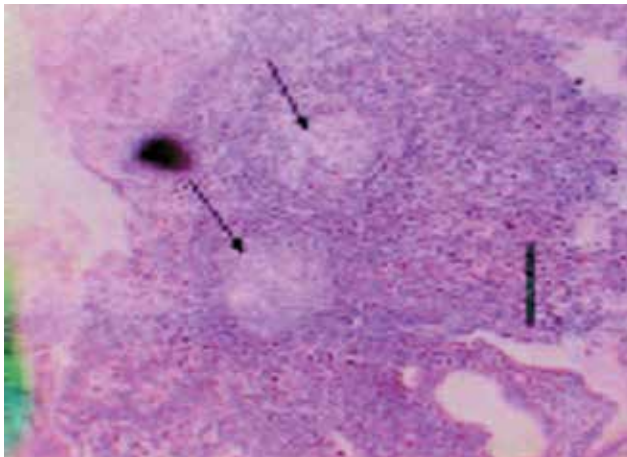


Fig 3. HPE slide showing caseating granulomas (black arrows) in the gastric mucosa



Fig 4. Improvement of endoscopic lesion after treatment (body of the stomach)



Fig 5. Improvement of endoscopic lesion after treatment (duodenum)

## Discussion

Isolated tuberculosis of upper gastrointestinal tract (GI) is a rarely seen entity even in regions where tuberculosis is endemic.<sup>9</sup> Bactericidal property of gastric acid, less lymphoid tissue in the gastric wall, integrity of gastric mucosa of the stomach and active gastric motility are proposed as mechanisms for scarcity of this condition.<sup>3</sup> Possible routes of infection are by direct infection of mucosa, haematogenous spread and extension from neighbouring TB lesion.<sup>10</sup>

The lesser curvature of antrum and prepyloric regions of stomach are the most common sites involved. Presenting symptoms of gastric TB are highly nonspecific. Epigastric pain and vomiting are the most common presentation and symptoms like weight loss, upper GI bleeding, and fever with variable duration may be present.<sup>9</sup> The patients may present with complications such as gastric outlet obstruction, haematemesis and perforation.<sup>9,11</sup> There is lack of pathognomonic findings on imaging studies in cases of gastric TB. Barium contrast study shows narrowing of gastric antrum and filling defects. Computed tomography scan may show gastric wall thickening. Upper GI endoscopy in gastric TB reveals single or multiple ulcers or hypertrophic nodular lesions.<sup>4</sup> Four peculiarities of gastric TB described on endoscopy are — serpiginous nature of the ulcer with undermined edges, multiple fistulous openings through the mucosa and presence of superficial tubercles near the lesion.<sup>9,11</sup> However, endoscopic biopsies are not usually diagnostic because tubercular granulomas are mostly located submucosally.<sup>12</sup> Granulomatous gastritis is a rare morphological diagnosis and a variety of infectious and non-infectious causes have to be considered in differential diagnoses. Diagnosis of gastric tuberculosis requires demonstration of caseating epithelioid granuloma and presence of acid fast bacilli in tissue. Histopathological examination of either an endoscopic biopsy or gastrectomy specimen for characteristic morphological features and special stain (Ziehl-Neelsen or Fite Faraco) thus becomes most important. But gastro-duodenal TB is a paucibacillary disease and demonstration of acid fast bacilli may not be possible.<sup>1</sup> PCR test of the biopsy specimen is essential if culture study is not able to yield acid fast bacilli<sup>12</sup> and provides a faster alternative for the diagnosis. Anti-tubercular chemotherapy is the main modality for management of gastric tuberculosis when

the diagnosis is established. Surgical intervention becomes necessary when the patient presents with complications such as gastric outlet obstruction, perforation or fistula formation.<sup>3,12</sup> In this case as well as published literature, all patients showed remarkable improvement with anti-tuberculosis chemotherapy both clinically and in follow-up of upper GI endoscopy.

### Conclusion

Though gastric tuberculosis is rare, in patient presenting with features of peptic ulcer disease and endoscopic evidence of diffuse chronic inflammatory activity, the possibility of gastric tuberculosis should be kept in mind especially in areas endemic for tuberculosis.

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