

## Gastric Lymphoma and Gastric Tuberculosis: A Diagnostic Dilemma

### Abstract

Gastric outlet obstruction may be caused by a heterogeneous group of diseases that include both benign and malignant conditions. Primary gastric lymphoma (3%–5% of all gastrointestinal malignancies) and primary gastric tuberculosis (TB) (0.4%–2%) are very rare and resemble each other in clinical presentation with diagnostic dilemma between them. Do the two entities exist concomitantly or precede each other is still a topic of debate in the literature. Here, we present a case of primary gastric TB and gastric lymphoma in the same patient.

**Keywords:** Gastric lymphoma, gastric tuberculosis, immune deficiency

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### Introduction

Gastric outlet obstruction implies complete or incomplete obstruction of the distal stomach, pylorus, or proximal duodenum and may be caused by a heterogeneous group of diseases that include both benign and malignant conditions.<sup>[1]</sup>

Gastric lymphoma accounts for 3%–5% of all malignant tumors of the stomach. Although the incidence of gastric carcinoma has reduced, the incidence of primary gastric lymphoma is increasing.<sup>[2]</sup>

Gastric tuberculosis (TB) is extremely rare, usually developing secondary to pulmonary TB or in association with an immunodeficient condition.<sup>[3]</sup> However, primary gastric TB in immunocompetent individuals has also been reported. Here, we present a case of primary gastric lymphoma and primary gastric TB in the same patient.

### Case Report

A 38-year-old thin-built, malnourished, anemic female presented to the surgery outpatient department with a complaint of recurrent vomiting for the past 2 months. Abdomen was soft, nondistended, and nontender, and no lump was palpable with no organomegaly. There was no peripheral lymphadenopathy.

She had similar complaint 1½ years back, for which she was investigated and

treated as a case of gastric lymphoma at a private hospital. Investigations done included contrast-enhanced computerized tomography of the abdomen showing marked diffuse circumferential mural thickness seen involving distal body of the stomach and antropyloric region with luminal compromise, suggestive of mitotic etiology [Figure 1a].

Her upper gastrointestinal tract (UGI) endoscopy [Figure 1b] with antral biopsy showed poorly differentiated neoplasm suggestive of lymphoma. Immunohistochemistry was diagnostic of large B-cell lymphoma with markers positive (CD20, CD43, CD79, Ki67, and LLA positive). Bone marrow biopsy did not show involvement by lymphoma.

She underwent chemotherapy (15 cycles of R-CHOP “cyclophosphamide, doxorubicin, vincristine, and prednisone” regimen) over 1 year followed by 25 cycles of radiotherapy (over 40 days).

She remained asymptomatic for about 3 months after completion of therapy for lymphoma. After that, she started having similar complaints of recurrent vomiting. It was then that she presented to us. The routine laboratory investigations including hematology, biochemistry, and serology including HIV status were unremarkable.

Ultrasonography of the abdomen showed a 7-mm thickened pylorus. UGI endoscopy (UGIE) revealed a large friable fungating gastric mass in the pylorus and antrum, leading to severe gastric outlet obstruction.

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Biopsy from the gastric mass showed necrotic and inflammatory tissue only and was inconclusive. Subsequent positron emission tomography (PET) scan done for the evaluation of recurrence of lymphoma showed a metabolically active lesion involving distal body of the stomach and pyloric antrum with metabolic activity in perigastric nodes.

The patient was planned for surgery in view of gastric outlet obstruction and metabolically active lesion confined to the stomach only. She underwent subtotal gastrectomy [Figure 2a] with Roux-en-Y gastrojejunostomy. Histopathological examination (HPE) of the resected distal stomach revealed granulomatous inflammation with caseous necrosis, compatible with TB [Figure 2b]. Postoperative period was uneventful. She was discharged on postoperative day 15 on Category 1 antitubercular therapy (ATT). She has completed her ATT. The patient is under follow-up for the past 1½ years and asymptomatic till date [Figure 3a and b].

## Discussion

Gastrointestinal (GI) tract is the most common extranodal site involved by lymphoma accounting for 5%–20% of all cases.<sup>[4]</sup> Primary GI lymphoma, however, is very rare, constituting only about 3%–5% of all GI malignancies.

Histopathologically, almost 90% of the primary GI lymphomas are of B-cell lineage with very few T-cell lymphomas and Hodgkin's lymphoma. Certain histological subtypes have been noted to have a relative predilection site as mucosa-associated lymphoid tissue lymphoma in the stomach; mantle cell lymphoma in the terminal ileum, jejunum, and colon; enteropathy-associated T-cell lymphoma in the jejunum; and follicular lymphoma in the duodenum with a geographic variation in its distribution.

Ann Arbor staging with Musshoff modification is commonly employed to stage GI lymphoma, and the International Prognostic Index has been used to define the prognostic subgroups.

According to the World Health Organization, 3–4 million new cases of TB occur in India every year. Abdominal TB comprises 2%–5% of all cases of TB. GI TB is seen commonly in the Indian setting due to its endemicity. GI TB can involve any part of the intestinal tract.<sup>[5]</sup> The most common site for abdominal TB is ileocecal region, and gastroduodenal involvement is uncommon with a reported incidence of 0.003%–0.21% of all routine autopsies.<sup>[6]</sup>

Primary involvement of the stomach in TB is rare (0.4%–2%) because of the bactericidal property of the gastric acid, scarcity of lymphoid tissue in the gastric wall, and thick intact gastric mucosa. If stomach is involved by TB then it can present as obstruction, UGI bleeding and on endoscopy the mass may mimic or suggest malignancy.<sup>[7]</sup>

Use of chemotherapy for malignant lesions and gastrectomy for benign lesions has been proposed as a risk

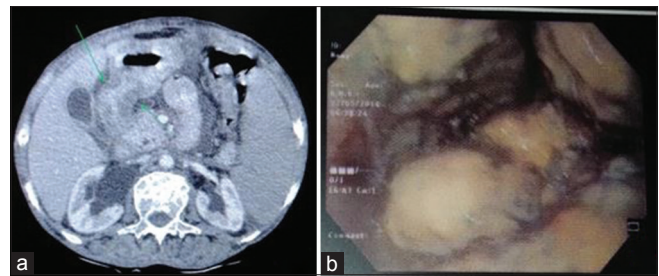


Figure 1: (a) Computed tomography showing growth in the stomach, (b) endoscopic view of growth in distal stomach

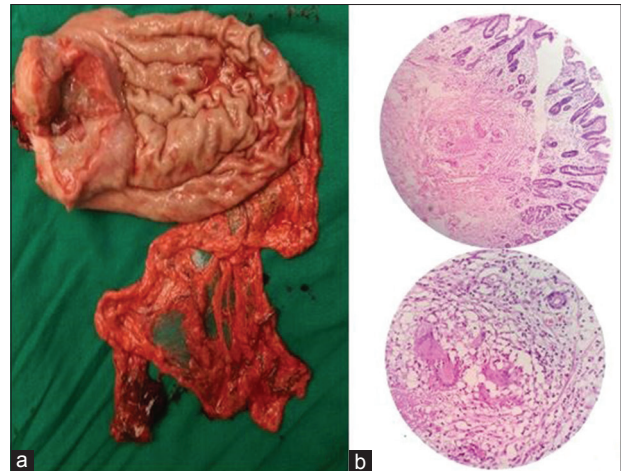


Figure 2: (a) Resected distal stomach with stenotic pylorus, (b) granulomatous inflammation with caseous necrosis

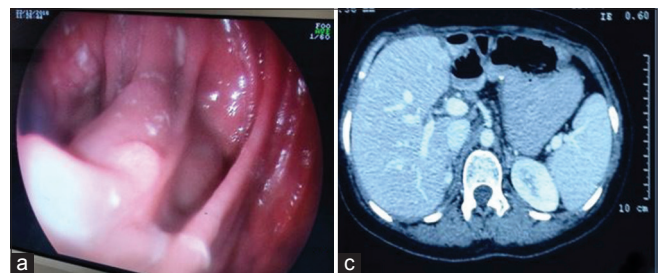


Figure 3: (a) Endoscopy and (b) contrast-enhanced computerized tomography of the abdomen showing normal anastomosis with no evidence of recurrence in follow-up

factor for gastric TB. Immune deficiency in non-Hodgkin's lymphoma (NHL) may also result in infection.

The patients may present with nonspecific symptoms or features of gastric outlet obstruction. Symptoms such as weight loss, night sweats, anorexia, anemia, hepatosplenomegaly, and an elevated lactate dehydrogenase can be present in both entities. TB and lymphoma may also share radiologic features. Our patient had weight loss, anemia, and features of gastric outlet obstruction which may present in both entities.

Endoscopy plays an important role in the diagnosis of gastric TB. Single and multiple ulcers have been associated with this disease, as have hypertrophic nodular lesions

surrounding a stenotic pyloric channel. Biopsy, though invasive, remains the most sensitive and specific diagnostic procedure. However, caseating or necrotizing granulomatous lesions typical for TB may also be found in NHL.<sup>[8]</sup>

The use of fluorodeoxyglucose (FDG) whole-body PET scanning has also been described for monitoring disseminated TB. FDG uptake in a patient with TB and Hodgkin's lymphoma has been reported earlier.<sup>[9]</sup>

The role of resection in gastric lymphoma remains controversial, and many patients are now being treated with chemoradiation therapy alone. The most common chemotherapeutic combination is CHOP.

Coexistence of NHL and TB in a patient has been reported earlier in few cases.<sup>[10]</sup> However, the exact mechanism or pathogenesis is still a questionable point.

Our patient was diagnosed with gastric lymphoma and responded well to chemoradiation. The recurrence of symptoms and subsequent investigations lead to the doubt of residual or recurrence of lymphoma. UGIE showed a fungating mass, but features were not distinguishable between benign and malignant. Although the biopsy was not conclusive, the doubt of recurrence of lymphoma was not negated or ruled out and surgery was done with the intent for relieving obstruction and have a final HPE diagnosis which came out to be gastric tuberculosis and it leads us to the other aspect of chemoradiation-associated effects, i.e., immunosuppression and TB of the stomach harbored in there. However, it was concomitant or superinfection is debatable.

#### **Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that

her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

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