International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2025: 7.089

Esophageal Ulcer-Unusual Presentation of Tuberculosis

Dr. Pratish Surwase[1], Dr. Bhaskar Sinare[2], Dr. S. L. Tungikar[3]

[1]Medicine Resident, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India.
Corresponding Author Email: *pratish.surwase[at]gmail.com*

[2] Professor, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India.

[3] Professor and Head, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India.

Abstract: ***Esophageal tuberculosis (TB) is an extremely rare manifestation of gastrointestinal TB, accounting for approximately 0.3% of all GIT TB cases. It most commonly occurs secondary to contiguous spread from mediastinal lymph nodes and typically involves the middle third of the esophagus. Due to its rarity and nonspecific presenting symptoms, diagnosis is frequently delayed or overlooked. We report a case of a 26-year-old immunocompetent male who presented with progressive retrosternal chest pain and dysphagia for both solids and liquids. Upper GI endoscopy revealed a large mid-esophageal ulcer. CT thorax demonstrated mediastinal lymphadenopathy with necrotic areas. Endoscopic ultrasound-guided fine needle aspiration cytology (EUS-FNAC) from the lymph nodes revealed epithelioid granulomas with acid-fast bacilli, confirming tuberculous lymphadenitis. The esophageal ulcer biopsy demonstrated granulomatous inflammation. The patient was started on standard anti-tubercular therapy (HRZE for 3 months followed by HRE for 9 months) with proton pump inhibitors, resulting in complete endoscopic healing of the ulcer. This case highlights that esophageal TB must be considered as a differential diagnosis in patients with dysphagia and mediastinal lymphadenopathy, even in immunocompetent individuals in TB-endemic regions.***

Keywords: Esophageal tuberculosis, dysphagia, mediastinal lymphadenopathy, anti-tubercular therapy, granulomatous esophagitis

1. Introduction

Tuberculosis (TB) remains a significant global public health challenge, particularly in developing countries such as India, which contributes the highest burden of TB cases worldwide. While pulmonary TB is the most common manifestation, extrapulmonary TB involving the gastrointestinal tract (GIT) is relatively infrequent, and esophageal TB is considered among the rarest forms of GIT involvement [1]. Esophageal TB constitutes approximately 0.3% of all GIT TB cases. It most frequently occurs as a secondary manifestation of mediastinal lymphadenopathy or primary pulmonary TB through either contiguous spread, ingestion of infected sputum, or hematogenous dissemination [2].

The middle third of the esophagus is the most commonly affected segment, given its anatomical proximity to the hilar and subcarinal lymph nodes surrounding the tracheal bifurcation [3]. The most frequent presenting symptom is dysphagia, reported in approximately 90% of cases, though chest pain and odynophagia may also occur [4]. Because esophageal TB can closely mimic malignancy or other inflammatory esophageal conditions, a high index of clinical suspicion combined with endoscopic evaluation, imaging, and tissue sampling is essential for accurate diagnosis. Early initiation of anti-tubercular therapy (ATT) leads to excellent clinical outcomes including complete ulcer healing [5].

We present this rare case of esophageal TB occurring in a young immunocompetent physician to underscore the importance of considering this diagnosis even in atypical presentations without classical pulmonary involvement.

2. Case Presentation

A 26-year-old male medical resident presented to the Department of General Medicine with a chief complaint of retrosternal chest pain during swallowing (odynophagia) for both solids and liquids. The symptoms were progressive in nature. There was no associated history of hematemesis, vomiting, fever, cough, significant weight loss, or night sweats. The patient denied any history of prior tuberculosis, known TB contact, or prolonged illness. Personal history was notable for the absence of alcohol use, smoking, or tobacco consumption.

On physical examination, vitals were stable: blood pressure 120/80 mmHg, pulse 90/min (regular), and respiratory rate within normal limits. There was no peripheral lymphadenopathy. Pallor, jaundice, clubbing, koilonychia, or platynychia were absent. No thyroid enlargement was detected. Oral cavity examination revealed no aphthous ulcers, oral thrush, tobacco stains, or dental caries. Systemic examination including cardiovascular, respiratory, and abdominal systems was unremarkable.

Informed Consent: Written informed consent was obtained from the patient prior to the preparation and publication of this case report. The patient was informed about the purpose of the case report, the nature of the information to be published, and his right to withdraw consent at any time without affecting his medical care. All patient identifiers have been anonymized in accordance with ethical standards to protect patient confidentiality.

3. Investigations

3.1 Laboratory Investigations

Routine hematological parameters revealed: Hemoglobin – 13.2 g/dL, WBC count – 9,850/mm³, Platelet count – 3.35 lakhs/mm³, ESR – 40 mm/hour. Liver function tests (LFT), kidney function tests (KFT), and ECG were within normal limits. HIV serology was negative.

3.2 Imaging

Chest X-ray did not reveal any pleuroparenchymal abnormality, consolidation, or pleural effusion. CT thorax (with contrast) demonstrated subcarinal, right paratracheal, and left hilar lymphadenopathy. The largest node measured approximately 3.5 × 2.0 cm (subcarinal) and another measured 3.8 × 2.0 cm in the aortopulmonary (AP) window, suggestive of an infective etiology. Several non-enhancing necrotic areas were noted within the lymph nodes, along with punctate foci of calcification- characteristic features of tuberculous lymphadenopathy.

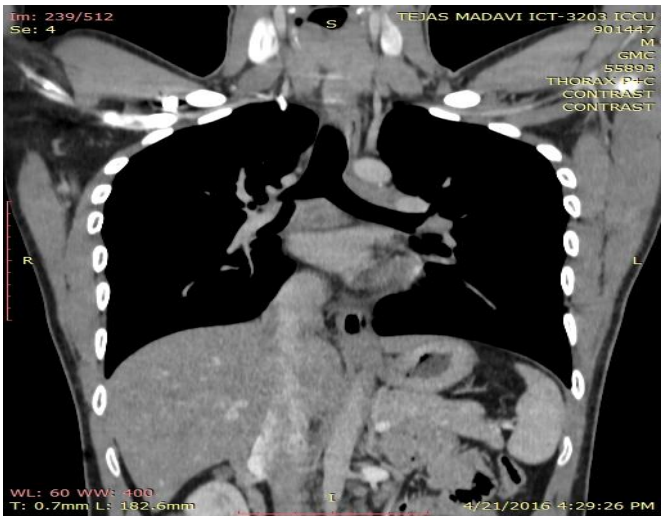

Figure 3: CT Thorax showing subcarinal lymphadenopathy with necrotic areas.

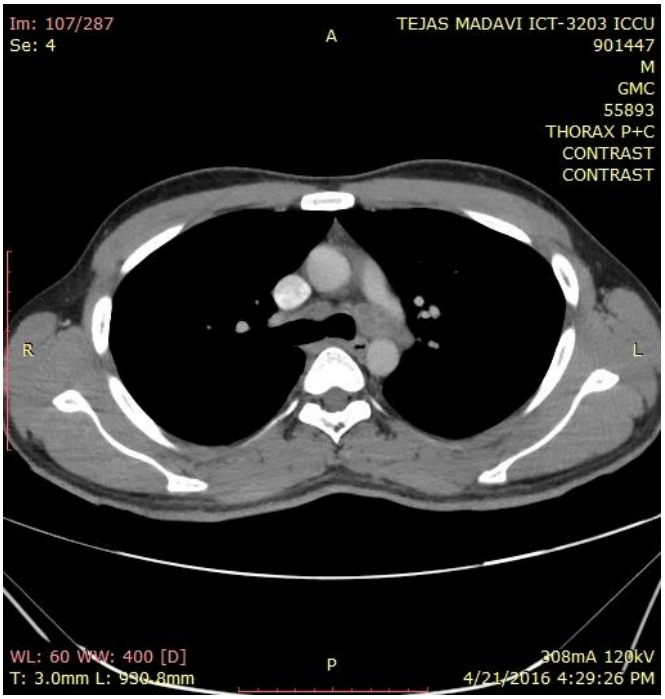

Figure 4: CT Thorax showing right paratracheal lymphadenopathy.

3.3 Endoscopy and Histopathology

Upper GI endoscopy revealed a large mid-esophageal ulcer extending from 26 to 31 cm from the incisors, measuring approximately 2 × 3 cm in size.

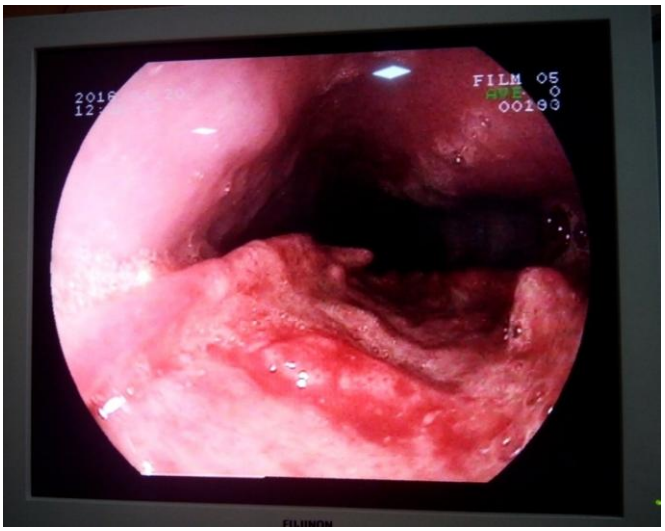

Figure 1: Upper GI endoscopy showing large mid-esophageal ulcer (26–31 cm).

Biopsy from the esophageal ulcer demonstrated extensive ulceration with an inflammatory lesion containing epithelioid granulomas. AFB staining of the biopsy was negative. However, endoscopic ultrasound (EUS)-guided fine needle aspiration cytology (FNAC) from the mediastinal lymph nodes revealed groups of epithelioid cells, histiocytes, and multinucleated giant cells against a hemorrhagic background, with focal areas of necrosis and normal squamous cells. AFB staining of the FNAC specimen was positive, confirming a diagnosis of tuberculous lymphadenitis.

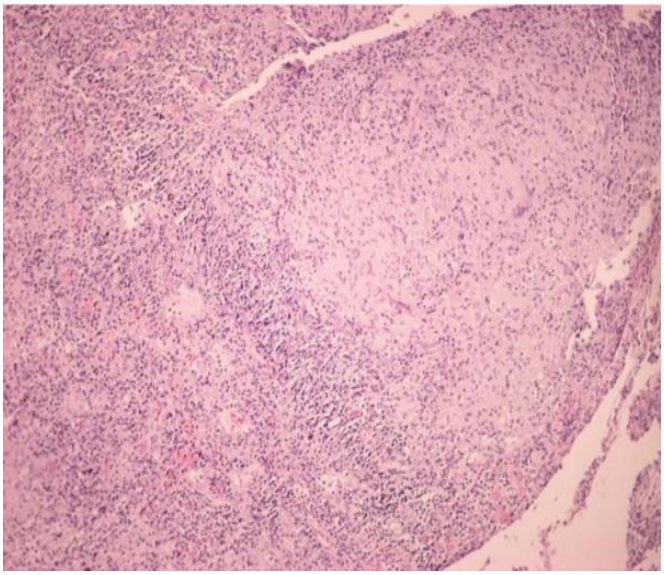

Figure 2: Histopathology of esophageal biopsy showing epithelioid granulomas with giant cells (H&E stain)

4. Diagnosis

Based on the clinicopathological correlation — mid-esophageal ulcer on endoscopy, necrotic mediastinal lymphadenopathy on CT thorax, granulomatous inflammation on esophageal biopsy, and AFB-positive EUS-FNAC from lymph nodes- a diagnosis of Esophageal Tuberculosis with Tuberculous Mediastinal Lymphadenopathy was established.

5. Treatment and Outcome

The patient was initiated on standard anti-tubercular therapy (ATT) in accordance with RNTCP/WHO guidelines. The intensive phase comprised HRZE (Isoniazid + Rifampicin + Pyrazinamide + Ethambutol) for 3 months on a daily basis, followed by the continuation phase of HRE (Isoniazid + Rifampicin + Ethambutol) for 9 months on a daily basis. Adjunctive therapy included proton pump inhibitors (PPIs) and ulcer-healing agents.

The patient was followed up with repeat upper GI endoscopy, which revealed complete healing of the mid-esophageal ulcer, confirming a satisfactory therapeutic response to anti-tubercular therapy.

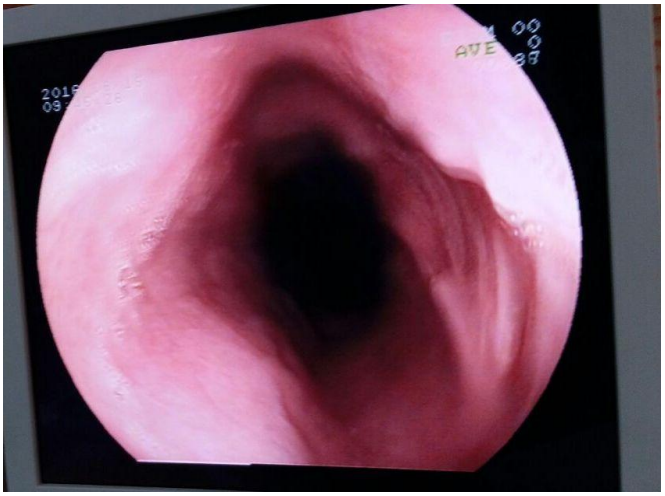

Figure 5: Repeat upper GI endoscopy after ATT showing complete healing of the esophageal ulcer

6. Discussion

Esophageal TB is a rare clinical entity even in countries with a high TB burden [1]. It constitutes only about 0.3% of all GIT TB cases, with the esophagus being the least commonly involved part of the gastrointestinal tract. This rarity can be attributed to several factors including the rapid transit of swallowed material, the resistance of the squamous epithelium to TB infection, and the bactericidal action of gastric acid [2].

The pathophysiology of esophageal TB involves contiguous spread from adjacent mediastinal or subcarinal lymph nodes- a mechanism well illustrated in this case where mediastinal lymphadenopathy was identified on CT thorax. Alternative routes include ingestion of infected sputum from pulmonary cavities and hematogenous spread [2]. In our case, the chest X-ray was normal and there was no sputum or history of pulmonary symptoms, making the diagnosis even more challenging.

The middle third of the esophagus at the level of the carina is the most commonly affected segment, as confirmed in our patient. This anatomical predisposition is explained by the proximity of the mid-esophagus to the tracheobronchial and subcarinal lymph nodes [3, 4]. The presenting symptom in our patient was retrosternal chest pain on deglutition- an uncommon but recognized presentation. Dysphagia is the cardinal symptom in approximately 90% of reported cases [4]. Other reported symptoms include odynophagia, chest pain, weight loss, fever, and rarely hematemesis or tracheoesophageal fistula.

The diagnostic workup included chest X-ray, CT thorax, upper GI endoscopy with biopsy, and EUS-guided FNAC from mediastinal lymph nodes — which was the definitive diagnostic modality in this case. Although the esophageal biopsy showed granulomatous inflammation, it was AFB-negative. This finding underscores an important diagnostic nuance: AFB staining from esophageal biopsies is frequently negative in esophageal TB, and a combined approach using imaging, endoscopy, and nodal FNAC is often required to confirm the diagnosis [5]. The EUS-FNAC in this patient was AFB-positive with classic histological features of

caseating granulomatous inflammation, supporting the diagnosis.

Differential diagnoses for mid-esophageal ulcers include esophageal carcinoma, Crohn's disease, CMV esophagitis, HIV-associated esophageal ulcers, and sarcoidosis. The lack of malignant cells, AFB positivity, and the immunocompetent HIV-negative status of the patient helped exclude these possibilities. The complete endoscopic healing following standard ATT further validated the diagnosis.

This case reinforces the literature recommendation that esophageal TB must be actively considered in the differential diagnosis of mid-esophageal ulcers with mediastinal lymphadenopathy, particularly in TB-endemic regions, even in young immunocompetent individuals without pulmonary involvement.

7. Conclusion

Esophageal tuberculosis, though uncommon, is an important and potentially underdiagnosed cause of dysphagia and retrosternal chest pain in TB-endemic regions. Clinicians must maintain a high index of suspicion for this condition, especially when mid-esophageal ulcers are found in association with mediastinal lymphadenopathy, even in immunocompetent patients. A multi-modal diagnostic approach- incorporating endoscopy with biopsy, CT thorax, and EUS-guided FNAC- is essential for timely and accurate diagnosis. Standard anti-tubercular therapy leads to excellent clinical outcomes including complete endoscopic healing of the esophageal ulcer, as demonstrated in this case.

8. Future Scope

Future research should focus on prospective multicenter registries of esophageal TB to better delineate the clinical spectrum, diagnostic sensitivity of various modalities (including CBNAAT on biopsy and FNAC specimens), and long-term outcomes post-ATT. The role of molecular diagnostic tools such as Xpert MTB/RIF on endoscopic biopsy specimens warrants systematic evaluation, particularly in resource-limited endemic settings, to reduce diagnostic delays.

References

[1] Marshall JB. Tuberculosis of the gastrointestinal tract and peritoneum. Am J Gastroenterol. 1993;88(7):989–999.
[2] Welzel TM, Kawan T, Bohle W, Richter GM, Bosse A, Zoller WG. An unusual cause of dysphagia: esophageal tuberculosis. J Gastrointest Liver Dis. 2010;19(3):321–324.
[3] Huang YK, Wu YC, Liu YH, Liu HP. Esophageal tuberculosis mimicking submucosal tumor. Interact Cardiovasc Thorac Surg. 2004;3(2):274–276.
[4] Jain SK, Jain S, Jain M, Yaduvanshi A. Esophageal tuberculosis: is it so rare? Report of 12 cases and review of the literature. Am J Gastroenterol. 2002;97(2):287–291.
[5] Grubbs BC, Baldwin DR, Trenkner SW, McCabe RP Jr, Maddaus MA. Distal oesophageal perforation caused by tuberculosis. J Thorac Cardiovasc Surg. 2001;121(5):1003–1004.
[6] Mokoena T, Shama DM, Ngakane H, Bryer JV. Oesophageal tuberculosis: a review of eleven cases. Postgrad Med J. 1992;68(796):110–115.
[7] World Health Organization. WHO consolidated guidelines on tuberculosis: tuberculosis preventive treatment. Geneva: WHO; 2020.
[8] Puri AS, Vij JC, Chaudhary A, Kumar M, Pandey R, Bhargava DK. Diagnosis and outcome of isolated esophageal tuberculosis: an Indian experience. Gastrointest Endosc. 1995;42(6):567–570.
[9] Devarbhavi H, Alvares JF, Radhikadevi M. Esophageal tuberculosis associated with esophagotracheal or esophagomediastinal fistula: report of 10 cases. Gastrointest Endosc. 2003;57(4):588–592.
[10] Central TB Division, Ministry of Health and Family Welfare, Government of India. National Tuberculosis Elimination Programme (NTEP): Technical and Operational Guidelines for Tuberculosis Control in India. New Delhi: MoHFW; 2021.

Author Profile

Dr. Pratish Surwase: Medicine Resident, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India. His academic interests include gastrointestinal medicine, infectious diseases, and rare presentations of tuberculosis.
Email: *pratish.surwase[at]gmail.com*

Dr. Bhaskar Sinare: Professor, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India. He has extensive clinical and research experience in internal medicine.

Dr. S.L. Tungikar: Professor and Head, Department of General Medicine, Pravara Institute of Medical Sciences (Rural Medical College), Loni, Ahilyanagar, Maharashtra, India. He has decades of expertise in clinical medicine and medical education.