

Gastric Tuberculosis Accompanied by Cutaneous Fistula: A Case Report

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ABSTRACT

Gastric Tuberculosis (TB) is a rare presentation. Posterior gastric perforation with tuberculosis complications is extremely unusual. The authors herewith present a case of a 32-year-old male, with complaints of fever for two months and discharge from the left-side of the back for 15 days, through which ingested food particles were drained. The patient was a known case of Type 2 Diabetes Mellitus (T2DM) and was recently diagnosed with pulmonary TB. He was evaluated with an upper Gastrointestinal (GI) endoscopic biopsy, Contrast-enhanced Computed Tomography (CECT), and Gastrografen (GGF) studies to confirm the diagnosis. He presumably developed gastric ulceration with posterior perforation, tracking through the retroperitoneum and presenting as a subcostal abscess that was inadvertently incised and converted into a fistula. He was treated both medically and surgically. He recovered completely and discharged with full course of Antitubercular Treatment (ATT) drugs and didactic medications. The presence of a cutaneous fistula in association with gastric TB underscores the diverse clinical presentations of this infectious disease, emphasising the importance of early detection and tailored management approaches.

Keywords: Gastrografen study, Laparotomy, Posterior perforation, Subcostal abscess, Tuberculous granuloma

CASE REPORT

A 32-year-old male driver presented to the outpatient clinic with a two-month history of persistent fever and a 15-day history of discharge from the left side of the lower back. The fever was low-grade, occurring mostly in the evening, without associated chills and rigour but accompanied by sweating. The patient has a history of chronic alcoholism and smoking, with a daily alcohol intake of approximately 500 mL and smoking 2-3 cigarettes per day.

Additionally, the patient is a known case of diabetes mellitus for two years and on irregular treatment. The initial treatment for fever was evaluated outside hospital around two months ago, where the Mantoux test and chest X-ray revealed strongly positive results for pulmonary Tuberculosis (TB). Human Immunodeficiency Virus (HIV) testing returned negative and routine blood investigations showed normal results. Pulmonary TB was suspected, leading to the initiation of antitubercular medication for which the patient was on irregular treatment. Despite maintaining a normal diet, the patient reported a significant weight loss of 10-12 kg over the past six months. About a month ago, the patient noticed a swelling that gradually increased in size and suddenly became painful. Seeking medical attention, the individual consulted a private physician who performed an incision and drainage. However, the patient subsequently developed fistulas at the site, which now discharge pus along with ingested food particles. The discharge is characterised by a foul smell, and it includes both solid and liquid diet components over the ulcer site [Table/Fig-1].



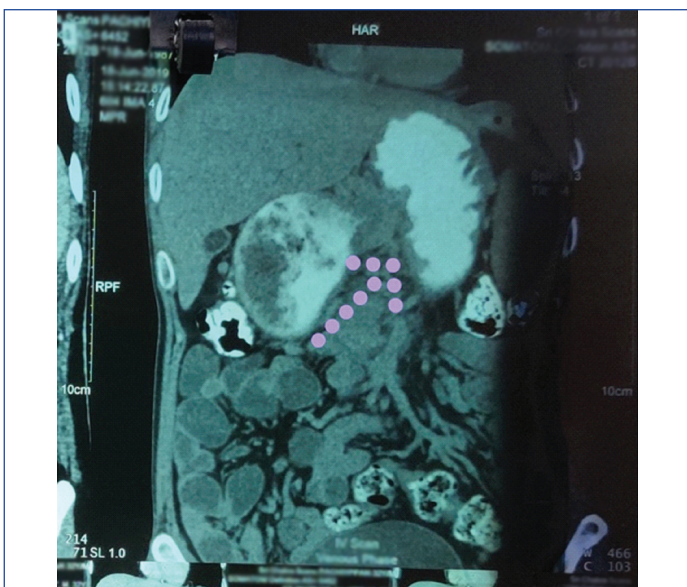
[Table/Fig-1]: Clinical picture of fistula site.



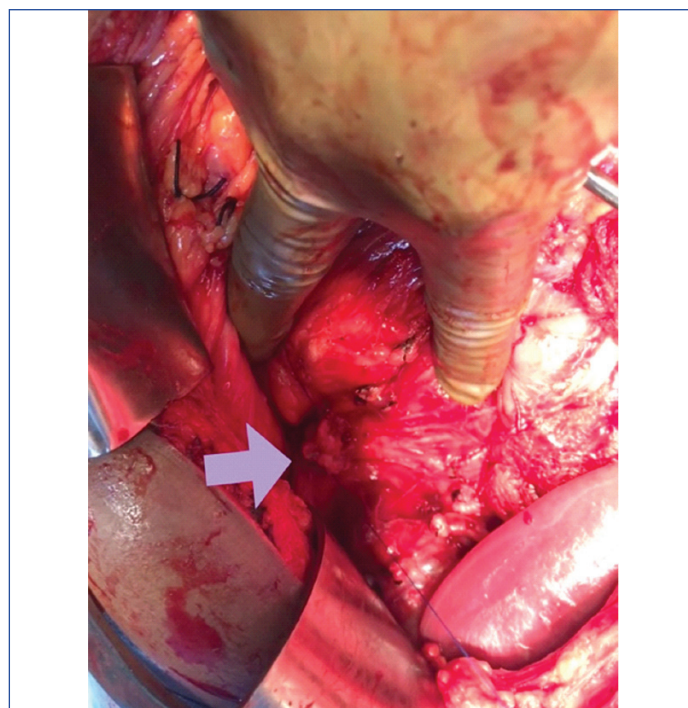
[Table/Fig-2]: Gastrografen study, X-ray oblique view- shows the presence of a gastrocutaneous fistula.

The Gastrografen (GGF) study indicated the presence of a gastrocutaneous fistula [Table/Fig-2]. Contrast-enhanced Computed Tomography (CECT) revealed an ill-defined fluid collection containing

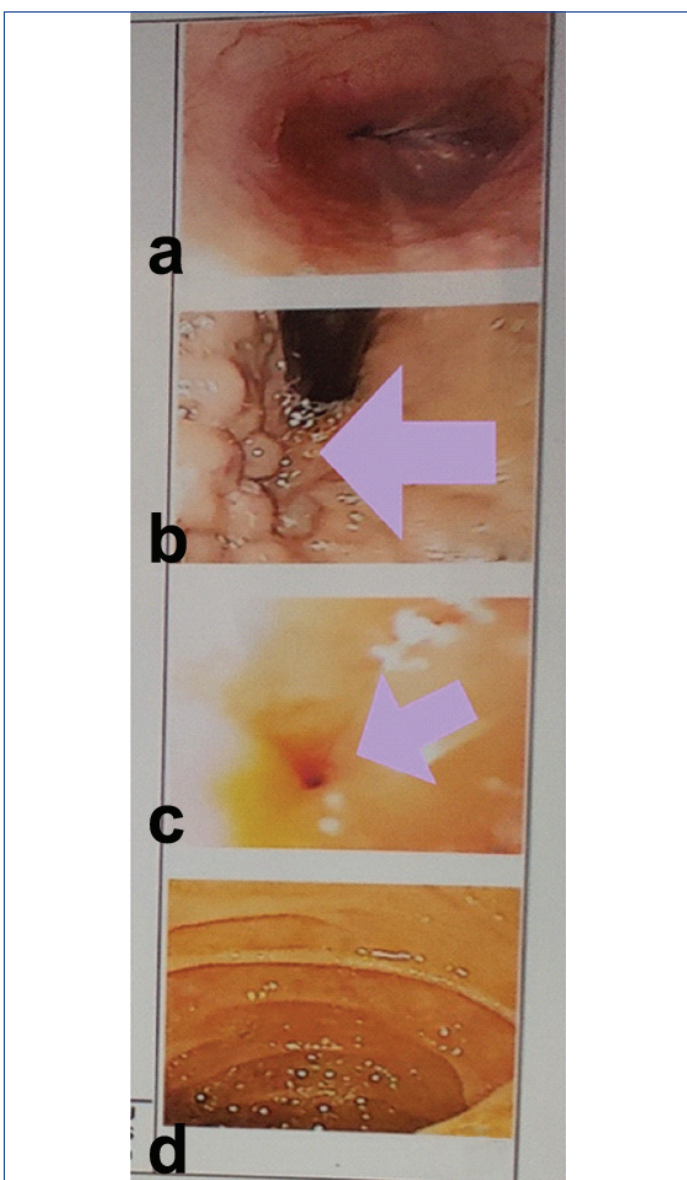
air in the lesser sac, communicating with the posterior wall of the body of the stomach along the lesser curvature. This collection coursed through the retroperitoneum into the splenic recess, the lienorenal ligament, and the posterolateral abdominal wall subcutaneous plane, consistent with a likely gastrocutaneous fistula [Table/Fig-3]. Multiple collaterals were observed in the port, peripancreatic region, and gastrohepatic ligament, along with a dilated left gastric vein and significant extrahepatic portal venous obstruction. Upper endoscopy indicated oesophageal and fundal varices with a fistulous opening in the first part of the duodenum [Table/Fig-4]. The patient subsequently underwent laparotomy, and intraoperative findings were suggestive of portal hypertension with a posterior fistula opening at the pylorus region [Table/Fig-5]. A subtotal gastrectomy with gastrojejunal anastomosis and jejunojejunal anastomosis was



[Table/Fig-3]: CECT abdomen coronal view– arrow showing in the lesser sac communicating with the posterior wall of the body of the stomach along the lesser curvature and coursing through the retroperitoneum into the splenic recess.



[Table/Fig-5]: Posterior fistulas opening at the pylorus region (arrow).



[Table/Fig-4]: Upper endoscopy images: a) Normal oesophagus; b) Multiple fundal varices; c) Fistulas opening at 1st part of duodenum; d) Normal D2 segment of duodenum.

performed, and the postoperative period was uneventful. The peritoneal end of the fistula tract was closed intraperitoneally. The histopathology report revealed gastric mucosa showing features of

a tuberculous granuloma, with no evidence of malignancy in the material studied. The patient recovered without incident and was started on four-drug Antitubercular Treatment (ATT). One year after surgery, he is doing well.

DISCUSSION

Abdominal TB is an increasingly common disease that poses a diagnostic challenge due to the nonspecific features of the disease, which may lead to diagnostic delays and the development of complications [1-3]. Perforation from gastric TB is an uncommon occurrence; very few cases are described in the literature [Table/Fig-6] [2,4-6]. Gastric TB is a rare presentation, developed secondary to pulmonary TB [7]. However, the frequency of gastric TB increases vividly to 4.5% in individuals with moderate pulmonary disease and 25% in those with severe disease [8]. Gastric TB is challenging to treat due to its difficulty in diagnosis. Usually, abdominal pain, vomiting, fever, and weight loss are the most common symptoms, regardless of whether gastric TB is primary or secondary. The most common site of Gastrointestinal (GI) TB is the ileocecal region, followed by the jejunum and colon. The oesophagus, stomach, and duodenum are rarely involved [9]. The most common cause of GI primary TB (unpasteurised milk) is food that is consumed orally. Secondary TB occurs when patients with active pulmonary TB swallow sputum containing live tubercle bacilli. The involvement of TB in the gastric region is usually associated with pulmonary TB or an immunodeficient state [10].

Primary stomach involvement is uncommon (0.4%-2%), owing to the bactericidal properties of gastric acid, the lack of lymphoid tissue in the gastrointestinal wall, and the thick intact gastric mucosa [1,3]. There are many morphological types of gastric involvement. The most common type is an ulcerative lesion along the lesser curvature and the pylorus [11]. In the present case, there is no association with tubercular lymphadenitis. Since the patient is a chronic alcoholic, he should have sealed the posterior pyloric perforation, which later formed into the fistula tract through the retroperitoneum to the posterior lower cutaneous opening. In the late stages, features of pyloric stenosis with a distorted antropyloric region can be present. The differential diagnosis of gastric TB can be carcinoma, lymphoma, or other infections like syphilis [1]. It is more challenging to preoperatively suspect the diagnosis of TB. Weight loss with nocturnal sweats and adenopathy in the abdominal CT scan contributes to the diagnosis

Author	Age/sex	Investigation	Findings	Histopathology
Lv M et al., [2]	60/M	Endoscopy revealed a smooth protruding lesion in the gastric cardia CECT revealed a 2 cm relatively well-defined soft-tissue mass on the small curved side of the cardia	Lesion was filled with a milky, white liquid and white granulation tissue	Haematoxylin and eosin staining showed patches of caseating necrosis and granulomatous inflammation
Singh B et al., [4]	32/M	Endoscopy revealed a persistent gastric ulcer in the greater curve X-ray contrast- ulcer with gastrocolic fistula	Enlarged perigastric lymph node	Endoscopic biopsy ulcer: nonspecific chronic inflammation; AFB and tuberculous granuloma in excised specimen and lymph node
Sharma D et al., [5]	21/F	CECT stomach perforation lesser curvature endoscopy- stomach perforation	Perforation in the lesser curvature with indurated margins, perigastric lymphadenopathy	AFB, epithelioid cell granuloma with necrosis; tuberculous granulation tissue and necrosis from the ulcer edge
Moghadam AG et al., [6]	43/M	Gastric endoscopy revealed severe thickening of the antrum and distal body of the stomach, which was suggestive of malignancy Abdominal CT scan showed thickening of the gastric antral wall, suggestive of a gastric antral mass indicative of an infiltrative process		Gastrectomy specimen: chronic caseating granulomatous inflammation
Current case	32/M	GGF study showed gastrocutaneous fistula CECT revealed a gastrocutaneous fistula with perforation of the posterior wall of the stomach along the lesser curvature interacting with the posterolateral abdominal wall subcutaneous plane Endoscopy indicated oesophageal and fundal varices with a fistulous opening in the first part of the duodenum	Portal hypertension with a posterior fistula opening at the pyloric region	Tuberculous granuloma with nonspecific chronic inflammation

[Table/Fig-6]: Case studies of tuberculous gastric perforation [2,4-6].

[12]. Suspecting perforated gastric TB makes it possible to limit the gesture of excision of the ulcer (for pathological examination) and suture. Treatment of the bacilli infection should be done with antitubercular drugs. For the cases described in the literature, total or partial gastrectomy was performed in most of the cases (four cases) [2,4-6]. The intraoperative data may be helpful to direct the anatomopathologist towards the search for granulomas and caseous necrosis [7]. Perforation in the gastric ulcer due to TB is very rare.

CONCLUSION(S)

In conclusion, the case of gastric TB with a cutaneous fistula highlights the rarity and severity of this condition. The low incidence is attributed to the stomach's acidic environment. The absence of lymphadenopathy and the presence of a discharging fistula underscore a sealed perforation complication. Notably, high mortality rates, as reported in the literature, emphasise the gravity of perforated gastric TB. Mimicking other conditions, gastric TB poses diagnostic challenges. The present case contributes to understanding its diverse presentations, emphasising the need for early recognition and intervention. Heightened awareness among healthcare professionals is essential for effective management of this rare yet potentially devastating complication.

REFERENCES

- [1] Debi U, Ravisankar V, Prasad KK, Sinha SK, Sharma AK. Abdominal tuberculosis of the gastrointestinal tract: Revisited. *World J Gastroenterol.* 2014;20(40):14831-40.
- [2] Lv M, Tang K, Meng Y, Tian C, Wang M. Primary isolated asymptomatic gastric tuberculosis of the cardia mimicking gastric stromal tumor: A rare case report and literature review. *BMC Gastroenterol.* 2020;20:108.
- [3] Page RE, Williams RE, Benson EA. Primary gastric tuberculosis: A case report. *Br J Surg.* 1975;62(8):618-20.
- [4] Singh B, Moodley J, Ramdial P, Haffeejee AA, Royeppen E, Maharaj J. Primary gastric tuberculosis. A report of 3 cases. *S Afr J Surg.* 1996;34(1):29-32.
- [5] Sharma D, Gupta A, Jain BK, Agrawal V, Dargan P, Upreti L, et al. Tuberculous gastric perforation: Report of a case. *Surg Today.* 2004;34:537-41.
- [6] Moghadam AG, Alborzi A, Pouladfar G, Monabati A. Primary gastric tuberculosis mimicking gastric cancer: A case report. *J Infect Dev Ctries.* 2013;7(04):355-57.
- [7] De Backer AI, Mortelé KJ, Deeren D, Vanschoubroeck IJ, De Keulenaer BL. Abdominal tuberculous lymphadenopathy: MRI features. *Eur Radiol.* 2005;15(10):2104-09.
- [8] Mitchell RS, Bristol LJ. Intestinal tuberculosis: An analysis of 346 cases diagnosed by routine intestinal radiography on 5,529 admissions for pulmonary tuberculosis, 1924-29. *Trans Am Clin Climatol Assoc.* 1954;65:32.
- [9] Amarapurkar DN, Patel ND, Amarapurkar AD. Primary gastric tuberculosis – report of 5 cases. *BMC Gastroenterol.* 2003;3:01-04.
- [10] Padma V, Anand NN, Rajendran SM, Gurukul S. Primary tuberculosis of stomach. *J Indian Med Assoc.* 2012;110(3):187-88.
- [11] Chetri K, Prasad KK, Jain M, Choudhuri G. Gastric tuberculosis presenting as non-healing ulcer: Case report. *Trop Gastroenterol.* 2000;21(4):180-81.
- [12] Gill RS, Gill SS, Mangat H, Logsetty S. Gastric perforation associated with tuberculosis: A case report. *Case Rep Med.* 2011;2011:392769.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Sep 22, 2023
- Manual Googling: Nov 23, 2023
- iThenticate Software: Feb 13, 2024 (12%)

ETYMOLOGY: Author Origin

EMENDATIONS: 8

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Sep 19, 2023**

Date of Peer Review: **Nov 21, 2023**

Date of Acceptance: **Feb 15, 2024**

Date of Publishing: **Apr 01, 2024**