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CASE REPORT

Case Report: A case of tuberculosis lymphadenitis mimicking a gastric tumor [version 1; peer review: 1 approved with reservations]

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Abstract

Solitary tuberculosis of the upper gastrointestinal tract is a rare pathology that usually mimics the clinical and radiological features of malignant tumors. A gastric subepithelial tumor is usually detected during diagnostic endoscopy. Stomach tuberculosis, in particular, can appear as a subepithelial tumor of the stomach wall. Several cases of gastric tuberculosis imitating subepithelial gastric tumors have been reported recently. We describe the case of a patient with tuberculous lymphadenitis that mimics a submucosal gastric tumor. A 52-year-old female was admitted to our surgical department for epigastric pain and weight loss. Endoscopy was inconclusive; it revealed either a submucosal compression or an anterior submucosal lesion with erosive anterior gastropathy and a fistulous orifice located in the bulb. The patient was diagnosed with a gastric tumor and an endoscopic ultrasound demonstrated a rounded hypoechoic antral lesion that was not vascularized and was distant from the gastric wall, whose five layers appeared of a normal aspect. The patient underwent an exploratory laparotomy. A biopsy was sent intraoperatively for frozen section examination, and concluded that the diagnosis was tuberculous intraperitoneal lymphadenitis. The patient received anti-tuberculosis treatment. This case demonstrates that gastric tuberculosis remains a challenging diagnosis.

Keywords

Gastric tuberculosis, abdominal tuberculosis, Subepithelial tumor, Tuberculous Lymphadenitis, case report

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Any reports and responses or comments on the article can be found at the end of the article.

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Introduction

Abdominal tuberculosis (TBC) can affect many organs in the peritoneal cavity such as the gastrointestinal tract, peritoneum, lymph nodes, spleen, and liver. It can affect one organ or many in combination.¹ Gastrointestinal TBC's presentation is varied, depending on the site that is involved.² Its diagnosis is especially difficult. This particularity is explained by differential diagnoses that can mimic the various manifestations of gastrointestinal TBC, including infectious and noninfectious causes.³ TBC of the stomach is the rarest form and is generally misdiagnosed because it may mimic a gastric tumor.⁴

Here, we report a case of mesenteric tuberculous lymphadenitis that had involved the gastric wall and mimicked a gastric submucosal tumor with no evidence of tuberculosis elsewhere.

Case report

A 52-year-old woman, with a history of hypertension, was hospitalized in our department of surgery following three months of epigastric pain and discomfort with weight loss. She had neither fever nor respiratory symptoms. Physical examination revealed mild tenderness in the upper abdomen associated with an palpable and painful epigastric mass measuring 4 cm. There was no cervical lymphadenopathy or hepatosplenomegaly, and laboratory data were normal. There were no abnormalities on the chest X-ray.

The upper endoscopy was inconclusive and showed either submucosal compression or an anterior submucosal lesion with erosive anterior gastropathy and a fistulous orifice located in the bulb (Figures 1 & 2). A biopsy was performed and concluded there was no malignancy and no evidence of tuberculosis. The endoscopic ultrasound revealed a rounded lesion approximately 30*26 mm located in the antrum. The lesion was hypoechogenic and discretely heterogeneous, not vascularized, and distant from the gastric wall whose five layers appeared of a normal aspect (Figure 3). By positioning the probe next to the bulbar fistulous orifice, it was found that there was a second lesion with a hypoechogenic center (Figure 4) with a hypoechoic fistulous path.

An abdominal computed tomography (CT) scan was performed and showed an exophytic, heterogenous gastric formation with an axial necrotic center measuring 44*24 mm. After injection of contrast agent evoking peritoneal carcinosis nodules, the formation was found to be 24 mm and associated with multiple tissue nodules of enhanced infra centimeter. There were hepatic hilum and coeliomesenteric lymph nodes, one of which had a necrotic center measuring 9 mm in diameter corresponding to the one described on the endoscopic ultrasound (Figures 5 & 6).

The patient underwent an exploratory laparotomy with a prediagnosis of suspected gastric cancer. The surgical findings indicated a bulky mass adjacent to the antrum with posterior development invading the transverse mesocolon (Figures 7A & 7B), associated with multiple adenopathies of the mesentery, the transverse mesocolon, and the greater omentum, and organized inflows. There was a second mass of 3 cm located in the small omentum in contact with the left gastric artery, probably corresponding to a voluminous adenopathy (Figure 7C). A biopsy was taken and sent for frozen

Figures 1 & 2. Esophagogastroduodenoscopy shows an extrinsic compression of the gastric wall and an anterior submucosal lesion, with a fistulous orifice located in the bulb (images were edited in Microsoft PowerPoint 2016 to remove patient's scan data).

Figure 3. Radial endoscopic ultrasound shows a round hypoechoic mass located in the gastric antrum.

Figure 4. Radial endoscopic ultrasound shows a lesion with a hypoechoic center hypoechoic fistulous path, indicated by the red arrow.

Figure 5. Abdominal CT scan demonstrates a 44*24 mm exophytic, heterogenous gastric formation with a necrotic center.

Figure 6. Abdominal CT scan demonstrates a lymph node measuring 22*28 mm.

section examination, which found numerous epithelioid and giganto-cellular granuloma and central caseous necrosis, confirming the diagnosis of tuberculous intraperitoneal lymphadenitis (Figure 8). Indeed, gastrotomy was not performed because of the benign nature of the pathology. The patient was administered anti-tuberculosis treatment and was closely monitored. A CT scan taken six months after surgery revealed a total regression of all the gastric lesions and nectrotic lymph nodes previously described, and the disease was fully controlled.

Figure 7A. Bulky mass adjacent to the antrum with posterior development.

Discussion

Abdominal TBC is always misdiagnosed because of its various clinical manifestations. It is known as a great mimicker, especially when it affects abdominal organs without pulmonary infection, and malignant tumors are the most incriminating as a preoperative diagnoses.^{2,5} Gastric TBC is an extremely rare form whether it is a primary or secondary infection.¹ Debi et al.⁶ explain the reasons for its rarity such as the bactericidal properties of gastric acid, the scarcity of lymphatic tissue in the gastric wall and the thick gastric mucosa in an intact stomach.

Moreover, mesenteric tuberculous lymphadenitis is an extremely rare cause of intestinal manifestations involving the gastric wall, such as in our case.¹ According to the literature, only a few cases have been reported showing tuberculosis lymphadenopathy mimicking submucosal gastric tumors.

Figure 7B. Bulky mass invading the transverse mesocolon.

Primary gastric TBC, that does not involve any other organ, is generally located on the antrum or prepyloric region involving the duodenum. This location is explained by the presence of lymphoid follicles.^{1,4} There are six types of gastric tuberculosis in pathological forms: tubercular ulcers; miliary tubercles; hypertrophic tuberculosis; tuberculous pyloric stenosis; solitary tuberculoma; and tubercular lymphadenitis.²

Clinically, patients generally present with nonspecific upper abdominal pain such as epigastric pain, associated with weight loss, anorexia, and weakness.⁴ The majority of patients with gastric tuberculosis are often diagnosed after surgery because of the lack of specific symptoms.¹

An endoscopy is helpful to diagnose this pathology, especially by biopsy results. Endoscopies can show ulcers, masses, or extrinsic compression.⁷ However, in our case, gastric cancer was suspected and the biopsy did not help to confirm the

Figure 7C. A second mass of 3 cm in the lesser omentum in contact with the left gastric artery, which may be a huge adenopathy.

diagnosis. The poor yield of the biopsy is explained by the submucosal lesion that may not reveal granulomas and is difficult to obtain tissues from.^{7,8} Endoscopic ultrasonography is also very helpful, especially in the case of submucosal lesions or related lymph node enlargement,⁷ as it can differentiate between an extrinsic compression and a subepithelial gastric tumor by identifying the relationship between the lesion and the gastric wall.⁹ Morphologically, no specific imaging findings can help diagnose tuberculosis rather than malignancy, because there are no pathognomonic characteristics that show radiological modalities.⁵

Using combined radiographic and endoscopic imaging can facilitate an early diagnosis without unnecessary surgical resection. However, it is always difficult to have a final diagnosis by endoscopic biopsy, so it becomes necessary to perform a surgical biopsy using frozen section examination.⁸

Figure 8. Patient's lymph node showing numerous necrotizing and non necrotizing epithelioid and giant-cellular granuloma. Giant cells of Langhan's type are multinucleated (white arrow). In the center of a granuloma, necrosis is eosinophilic and granular; this is the microscopic appearance of caseous necrosis (black arrow) (HE×10)

Conclusion

Abdominal lymphadenitis tuberculosis presents a diagnostic challenge and a dilemma for clinicians. It may mimic a long list of differential diagnoses, such as in our case of tuberculosis lymphadenitis eroding the gastric wall. In these cases, endoscopy biopsy is the best modality to identify the pathology. Nevertheless, it could sometimes not be made preoperatively and may require surgery for diagnosis by intraoperative frozen biopsy.

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Consent

The patient has provided both verbal and written informed consent for the publication of their clinical details and images. It was made sure that his identity will be kept a secret at all levels. A copy of a written request is available for review if requested.

Author contributions

All authors were involved in the researching, writing, and editing of the manuscript.

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The authors reported the rare case of mesenteric tuberculosis lymphadenitis, which mimicked gastric tumor. The authors should be commended on their work. There are a few areas where additional information would enhance the manuscript's clarity.

Questions/comments

1. Based on the text, Figure 1 demonstrates an endoscopic image of the gastric wall, and Figure 2 depicts an image of the duodenal bulb. However, figure 1 & 2 composite does not correspond to the text (Fig 1 is the fistula opening, and Fig 2 is the bulging gastric wall).
2. The red arrow in Figure 1 should be made more noticeable. Please consider changing the color or bold the arrow.
3. The site of tissue biopsies is critical for pathological diagnosis. Please clarify where the mucosal biopsies were performed (bulging gastric wall vs. the fistulous orifice in the duodenal bulb). If the biopsies were performed from the gastric wall, which technique was applied (conventional mucosal biopsies vs. tunnel biopsies)?
4. Does the presence of necrotic mesenteric lymphadenopathy on CT scan suggest tuberculosis lymphadenitis?
5. Why was EUS-guided tissue acquisition not performed? EUS-FNA/B might have helped make the diagnosis in this case before performing surgery.
6. The diagnosis of abdominal tuberculous lymphadenitis can be challenging despite combined radiologic and endoscopic findings. However, endoscopic guided tissue

acquisition for culture for tuberculosis can be helpful (Ref: Chang *et al.* 2020¹). This issue should be addressed in the discussion, and additional information related to bacteriological methods (e.g., AFB smear, culture TB, or PCR for TB) may be added if available.

7. The treatment regimen for mesenteric tuberculosis lymphadenitis is crucial. It would be helpful for the readers if the authors report the treatment regimen and duration.
8. It would be nice if the authors could demonstrate follow-up endoscopic images of the fistulous opening or CT scan after treatment completion.

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Is the background of the case's history and progression described in sufficient detail?

Yes

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Partly

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Gastroenterology and endoscopy.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

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