Vomiting and weight loss

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A 25-year-old woman presented with a history of burning in the epigastrium, delayed post-prandial vomiting and a weight loss of 5 kg over six months. There was no history of any gastrointestinal bleeding, altered bowel habits, fever, anorexia, respiratory symptoms, or treatment for tuberculosis. Examination of the abdomen revealed mild epigastric tenderness but no palpable lump. Respiratory and cardiovascular examination was normal. Laboratory investigations revealed a haemoglobin of 13.6 g/dl, white blood cell count of $4.2 \times 10^9/l$ with a normal differential count. The erythrocyte sedimentation rate was 64 mm/h. The liver profile, renal profile, urine and stool analysis were within normal limits and chest X-ray and electrocardiogram were also normal. A barium meal study was performed (figure).

Questions

- 1 What two radiological features does the barium meal examination show?
- 2 Suggest three differential diagnoses.

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Figure Barium meal study

Answers

QUESTION 1

The barium meal study revealed multiple rounded filling defects in the antrum extending into the first part of the duodenum. Mild gastric dilation was also noted.

QUESTION 2

The differential diagnosis is that of gastric outlet syndrome (box 1).¹

Clinical course

Gastroscopic examination revealed diffuse disease of the antrum in the form of nodules of 2–5 mm in diameter and few erosions. Distensibility of the antrum was reduced and the pyloric channel was stenosed. The nodular lesions were seen to extend into the duodenal

Causes of outlet obstruction other than peptic ulcer disease

Tumours

- benign (adenomatous polyp)
- malignant (gastric carcinoma, lymphoma)

Inflammation

- Crohn's disease
- eosinophilic gastritis
- *Helicobacter pylori* gastritis
- gastric tuberculosis
- gastric syphilis
- sarcoidosis
- idiopathic granulomatous gastritis

Box 1

Conditions associated with gastric granulomas

Infectious

- tuberculous
- late syphilis
- histoplasmosis and other deep fungal infections
- parasitic

Non-infectious

- Crohn's disease
- sarcoidosis
- chronic granulomatous disease (childhood)
- allergic granulomatosis

Isolated idiopathic granulomas

- foreign body type
- as mass, ulcer, or in normal appearing mucosa

Box 2

- 1 Graham DY. Ulcer complications and their non operative treatment. In: Sleisenger MH, Fordtran JS, eds. *Gastrointestinal disease*. Philadelphia: WB Saunders, 1993; p 564.
- 2 Kadival GV, Kameswaran M, Ashtekar MD, Samuel AM. Immunodiagnosis of tuberculosis using polyclonal and monoclonal antibodies. *Trop Med Parasitol* 1990; 41: 363–5.
- 3 Zukerman MJ, Al-Samman M, Boman DA. Granulomatous gastritis: a case report with comparison to idiopathic isolated granulomatous gastritis. *Dig Dis Sci* 1994; 39: 1649–54.
- 4 Weinstein WM. Gastritis and gastropathies. In: Sleisenger MH, Fordtran JS, eds. *Gastrointestinal disease*. Philadelphia: WB Saunders, 1993; p 705.

bulb. The oesophagus, fundus, body of the stomach, and the second part of the duodenum were normal. Biopsies from the antrum showed the presence of *Helicobacter pylori* and she was treated with triple drug therapy. However, as her symptoms did not subside, she underwent a repeat gastroscopy which revealed the presence of epithelioid granulomas with giant cells. There was no caseation necrosis and no evidence of any malignancy. Neither Ziehl–Nelsen stain nor culture of the biopsy samples indicated any acid-fast bacilli. A computed tomogram of the abdomen showed the presence of a 3-cm hypodense lesion with peripheral enhancement in the mesentery with increased thickness of the gastric wall in the antral region. The tuberculosis antibody serological test done using radio-immunoassay was positive.² The tuberculin test (Mantoux test) was strongly positive (20 mm by 20 mm induration) at 48 hours. Serological tests for the human immunodeficiency virus and syphilis were negative. Due to the possibility of a lymphoma a minilaprotomy was performed which showed enlarged mesenteric lymph nodes, the biopsy of which revealed caseating granulomas. After four weeks of therapy with isoniazid 300 mg once daily (od), rifampicin 600 mg od, pyrazinamide 750 mg bid and ethambutol 800 mg od, she had good symptomatic relief. A gastroscopy repeated after two months showed good resolution of the lesions.

Discussion

Primary gastric tuberculosis is a rare cause of granulomatous gastritis.^{3,4} Most case reports describe either autopsy or post-gastrectomy findings. The prevalence of gastric tuberculosis varies from 0.03% to 0.21% in autopsies of patients with pulmonary tuberculosis, and 0.001% to 0.93% in gastric resections.⁵ The antrum and the prepyloric region are the most common locations of tuberculosis lesions in the stomach, with the most frequent lesions being of the ulcerative type.^{5–7} Gastric tuberculosis may mimic several other conditions (box 2). A pre-operative diagnosis is now possible with the help of gastroscopy and biopsy.⁷

Final diagnosis

Primary gastric tuberculosis.

Keywords: tuberculosis, endoscopy, gastritis, granulomatous disease

- 5 Broders AC. Tuberculosis of the stomach with a report of a case of multiple tuberculosis ulcers. *Surg Gynecol Obstet* 1917; 25: 490–504.
- 6 Subei I, Attar B, Schmitt G, Levendoglu H. Primary gastric tuberculosis a case report and literature review. *Am J Gastroenterol* 1987; 82: 769–72.
- 7 Gupta B, Mathew S, Bhalla S. Pyloric obstruction due to gastric tuberculosis: an endoscopic diagnosis. *Postgrad Med J* 1990; 66: 62–5.