Pyloric obstruction due to gastric tuberculosis – an endoscopic diagnosis

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Summary: A 22 year old male presented with symptoms of gastric outlet obstruction. Endoscopy showed a hypertrophic nodular lesion around the pyloric opening with pyloric stenosis. The endoscopic biopsy and histopathological examination revealed tuberculosis involving the stomach, an extremely rare lesion.

Introduction

Gastric tuberculosis is rare. Almost all reported cases are either autopsies or post-gastrectomy specimens.^{1,2} We report a patient who presented with gastric outlet obstruction and was found to have tuberculosis of the stomach as diagnosed by endoscopic biopsies. The special features in this patient are discussed in relation to previously reported cases.

Case report

A 22 year old Indian male presented with a history of peptic ulcer-like pain for 3 months duration. He also had vomiting and had lost weight over the last 3 months. There was no history of cough, haemoptysis, fever or chest pain. He had left lower lobe pneumonia a year previously and during the hospital stay he had had a massive upper gastrointestinal bleed. There was a history of aspirin ingestion preceding the bleed. Upper gastrointestinal endoscopy done then showed multiple gastric erosions and an adherent clot in the first part of the duodenum but no nodularity of the surrounding mucosa was noted. He was given oral cimetidine for 6 weeks. A repeat endoscopy after 6 weeks had shown a normal appearance of the duodenum bulb. There was no scar or deformity of the duodenum. On examination on this occasion he had poor nutrition with a weight of 50 kg. There was no pallor, lymphadenopathy or jaundice. The systemic examination did not reveal any significant findings. Abdominal examination revealed a succussion splash indicating evidence of gastric

retention. There was no visible peristalsis or a palpable mass.

Investigations revealed a haemoglobin of 11.3 g/dl and a total leucocyte count of $11.4 \times 10^9/l$ (polymorphs 87%). The erythrocyte sedimentation rate was 50 mm in 1st hour. The Mantoux test was strongly positive (20×30 mm) using $1 \times 10,000$ tuberculin units.

Chest X-ray showed a prominent left hilum but a subsequent tomogram of the chest did not reveal any lymph node enlargement. The gastric aspirate, for acid-fast bacilli and malignant cells, was negative.

A provisional diagnosis of gastric outlet obstruction due to duodenal ulcer was considered. The patient underwent a further endoscopy with an Olympus GIFQ endoscope which showed a pin hole pylorus. There was a hypertrophic nodular area (Figure 1) around the pylorus which was friable. The scope could not be negotiated into the first part of the duodenum. Brush cytology and biopsies were taken from this area. Paraffin section from the gastric biopsy showed diffuse inflammatory infiltrate consisting of lymphocytes, plasma cells and neutrophils. There was a moderate degree of gastric atrophy. A well defined granuloma consisting of epithelioid cells and Langhans' giant cell (Figure 2) was seen in the mucosa; however, there was no caseation necrosis. A Ziehl Nelson stain done did not reveal any acid-fast bacilli. Computed tomographic scan of the abdomen showed enlarged para-aortic nodes. The above findings supported a diagnosis of gastric outlet obstruction secondary to granulomatous disease of the stomach. The possibility of tuberculosis was considered in view of the patient being in an area with high prevalence of tuberculosis, positive Mantoux test and the endoscopic biopsy.

He was put on anti-tuberculous treatment for 9

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Figure 1 Endoscopic view showing hypertrophic nodular area around pylorus with pyloric stenosis.

Figure 2 Low power view of the gastric biopsy showing chronic active gastritis with gastric atrophy and a granuloma (arrow) with epithelioid cells and Langhans' giant cells.

months following which he showed marked symptomatic improvements. He gained weight and symptoms of pain and vomiting disappeared over a period of 8–12 weeks on the above treatment. A repeat endoscopy done at 6 weeks showed nodularity around the pylorus. However, the scope then could not be passed into the duodenum. Repeat endoscopy done at 18 months still shows nodularity around the pylorus but the scope could be easily passed into the first and second part of the duodenum which shows normal mucosal appearances. He has been followed regularly, and has no further symptoms.

Discussion

Gastric tuberculosis is rare. Barkhausen (1824) was the first to describe the possibility of gastric tuberculosis.³ Most of the cases were described prior to 1970. The incidence of tuberculosis in post-gastrectomy specimens is in the range of 0.004 to 0.93%.^{1,2} The incidence of gastric tuberculosis is 0.03 to 0.21% of all the routine autopsies and 0.34 to 2.3% in the autopsies of patients with pulmonary tuberculosis.^{2,4,5} Most of these patients have primary pulmonary tuberculosis. There are anecdotal case reports^{5,6,7} on primary gastric tuberculosis. The rarity of gastric tuberculosis has been attributed to the presence of gastric acid, scarcity of lymphatic follicles in the gastric wall, motor activity of the stomach and intactness of the gastric mucosa.³

Broders described the various pathological types of gastric tuberculosis of which ulcerative lesions are most common.¹ Others are hypertrophic lesions, miliary tubercles and tuberculomas. Clinically the diagnosis of gastric tuberculosis cannot be easily established. Most of the diagnosis has been made in post-gastrectomy specimens. Upper gastrointestinal endoscopy has played an important role in the diagnosis of tuberculosis in this patient to the extent that we could avoid surgery. A year earlier he had bled but since there was a history of aspirin ingestion and multiple gastric erosions, a clot in the duodenum could be related to a single flat ulcer which was probably peptic in origin or an erosion due to drug ingestion. Repeat endoscopy established a normal duodenum after 6 weeks.

A similar clinical and endoscopic appearance can occur when Crohn's disease involves the duodenal bulb, but it usually occurs in conjunction with involvement of prepyloric antrum.⁷ The biopsies from these areas show microscopically skip areas, a common finding and granulomas are found only in a minority of cases, in one series, in less than 10% of cases.⁸ Sarcoidosis involves the stomach when symptoms suggest gastric outlet obstruction and biopsy shows non-caseating granulomas. However, the gastric changes are usually found along with lung, liver, bone-marrow and parotid gland involvement.⁹ Primary granulomatous gastritis is a rare condition which usually affects patients between 60 to 80 years of age and X-ray reveals an infiltrative process in the upper two thirds of the stomach with a normal antrum in 40% of cases.¹⁰

The diagnostic value of endoscopic biopsy in Crohn's and other granulomatous disorders has not been clearly established. There are reports¹ of diagnostic endoscopic biopsy in patients with Crohn's disease but none could be found in gastroduodenal tuberculosis. Surgery has been the main modality for diagnosis and treatment of such

patients. The anti-tuberculous treatment following the biopsy report controlled the inflammatory

component of the disease and thus surgery was avoided in our patient.

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