A Case Report of Eosinophilic Granuloma of the Stomach

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Summary: A rare case of eosinophilic granuloma with an ulcer in the antrum portion of the stomach belonging to the localized type due to some parasite was reported. In spite of numerous examinations before the operation, a confirmed diagnosis was not obtained.

Key words: Eosinophilic granuloma — Parasite — Ulcer — Stomach — Submucosal tumor

Introduction

Eosinophilic granuloma of the stomach is a non-epithelial benign tumor. Its incidence is low. This disease is often misdiagnosed as a gastric polyp or cancer, and confirmation of the diagnosis of eosinophilic granuloma can be difficult. A 58-year-old woman with this disease was treated, but the patient was diagnosed as having a submucosal tumor of the stomach before laparotomy. The patient was found to have eosinophilic granuloma of the stomach during the operation.

Since the formation of an ulcer in such a case is quite rare, a report is presented in this paper with a review of the current literature.

Case Report

A 58 year-old woman was admitted to our surgical ward after suffering from gastric discomfort for one year. There was no accompanying nausea or vomiting. The

discomfort was intermittent and was relieved by ingesting food. There was no history of hematemesis, melena or weight loss. No history suggestive of bronchial asthma or an allergic disorder was elicited.

Laboratory Datas

The laboratory results were hemoglobin 12.5 gr/dl, hematocrit 42 %, total protein 6.8 gr/dl, albumin 4.4 gr/dl, globulin 2.5 gr/dl, serum amylase 155 S. Unit, and serum electrolyte within the normal range. The leukocyte count was 6600/mm³ with a differential count of 65 % neutrophils, 24 % lymphocytes, 6 % monocytes and 5 % eosinophils. The cardiovascular and respiratory systems were within clinically normal limits. Her abdomen was soft with a slight tenderness in the epigastric region. No tumor was observed and her liver, kidneys and spleen were not palpable. Her family and personal history were normal.

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Upper GI series

An upper GI series revealed a slightly elevated oval area with a filling defect in the pyloric antrum. This was considered to be a submucosal tumor with ulceration. There were no findings of malignancies during the upper GI examination (Fig. 1).

Endoscopic Findings

From the endoscopic evaluation, an elevated lesion with an ulcer was noted on the antrum of the posterior wall of the stomach (Fig. 2). No lesion suggestive of a malignancy was found.

An ulcerated lesion on the antrum of the posterior wall of the stomach was clearly distinguishable from the surrounding tissue. The size of the tips of the converse folds was normal, and there was no fusion, clubbing, or thinning of the folds.

From the upper GI series and gastroscopic findings, the diagnosis was a submucosal tumor with an ulcer of the stomach. Although a gastric mucosal biopsy was performed twice, no indication of a malignancy was obtained.

Operative Findings

When a laparotomy was performed with an upper median incision, no lesions were discovered on the outside of the stomach, nor was there any swelling of the regional lymph nodes.

A small incision was made in the antrum to examine the inside of the stomach. An elevated and ulcerous lesion, 2.5 cm × 2.5 cm, was detected on the posterior wall of the stomach, as expected from the upper GI series and gastroscopic findings.

A local excision of the lesion for pathological examination by frozen section led to the diagnosis of an eosinophilic granuloma. Gastrectomy was not performed and the excised region was sutured.

Pathological Findings

According to the pathological findings,

the lesion was localized from the antrum area to the tunica mucosa and tela submucosa. The boundary in the tunica mucosa was somewhat unclear, while the boundary in the tela submucosa was very clear (Fig. 3). In a part of the mucosal layers, a thin ulcer formation and disruption of the lamina mucosalis were noted (Fig. 4).

Part of the tunica mucosa was edematous. The lesion was marked by the appearance of fibroblasts with a marked eosinophilic infiltration and slight infiltrations by lymphocytes, plasma cells, and vascular granulation tissue (Fig. 5).

Eosinophilic infiltration was not observed in the tunica muscularis propria and the surface of the serosa, therefore a diagnosis of eosinophilic granuloma of the stomach was made.

Discussion

Kaijser (1937) described the first case of eosinophilic granuloma of the gastrointestinal tract and Hardy et al. (1968) reviewed 136 cases of eosinophilic granuloma of the stomach. The granuloma fall into two main classifications, morphologically (Everett, 1960; Brostaff, 1970; O'Neil, 1970).

The first is a localized form, where the lesion is seen in the prepyloric region as localized polyps and nodules (Helwing, 1953) or mimicking benign gastric ulcer. The symptoms produced are either due to local ulceration or obstruction.

The second type is a diffuse form (Domich et al. 1951). The lesions are scattered over the entire gastrointestinal tract, most of them ulcerating into the lumen. Tanaka (1975) classified the lesions into three groups; 1) localized polypoid, 2) diffuse thickening, and 3) parasitic granuloma.

The etiology of eosinophilic granuloma of the stomach may be a parasitic gran-

uloma due to anisakis or other parasites, or a non-parasitic granuloma connected with inflammatory granulation due to various causes. Differentiation between these two possibilities is based on obtaining evidence of a parasite. Enjohji (1967) stated that the differentiation is easily made by examining the histological characteristics.

In parasitic granuloma, 1) the lesion exists mainly in the tela submucosa, but often extends to the tunica muscularis propria; 2) the central portion is necrotic, and there is a granular tissue layer surrounding it; and 3) an extensive eosinophilic infiltration exists, and the boundary is unclear.

In non-parasitic granuloma, 1) the lesion exists in the mucosa and tela submucosa, and there is no infiltration of the tunica muscularis propria; 2) the boundary of the superficial layer of the mucosa is irregular, and the tunica muscularis propria is disrupted; and 3) the central portion is composed of comparatively rough connective tissue, and the fibroblasts and many capillaries are evenly distributed, with characteristic infiltration of eosinophils.

The symptoms are usually present for a number of years and consist of recurrent episodes of abdominal pain, nausea and vomiting. Bleeding may occur if the mucosa becomes eroded.

The abdominal pain was seen in 31 % of the patients and abdominal discomfort in 12 %. There were no symptoms in 29 % of the patients.

The site of the granuloma was the pyloric antrum in 63 %, the corpus in 25 %, and the angulus in 12 % of the cases (Imamura et al. 1981). 22 % of the granulomas were of the polyp type and 76 % were of the elevated type with erosion.

The type forming ulcers was very rare. 18.3 % were multiple types, and 13.3 % were complicated with gastric cancer (Imamura et al. 1981). About 50 % of these

patients suffer from bronchial asthma or other allergic manifestation, and the majority of the patients have a high eosinophil count of more than 80 % in a peripheral smear of blood (O'neil. 1970).

According to the statistics compiled by Imamura et al. (1981), 60 reports of this disease in Japan have been made in the past ten years, with a sex ratio of 2:1 in favor of male patients and a mean age of 51.5 years old.

The case which we treated was an eosinophilic granuloma with an ulcer localized in the pyloric region of the stomach. The patient complained of abdominal discomfort, but a preoperative confirmed diagnosis could not be made, even after several examinations. The patient was finally diagnosed, histopathologically, as having eosinophilic granuloma of the stomach due to a parasite.

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Fig. 1. A barium examination demonstrated an oval-shaped slightly elevated lesion with an ulcer.

Fig. 2. Endoscopy demonstrated a slightly elevated lesion in the antrum of the posterior wall of the stomach. The mucosa was clear and smooth.

Fig. 3. The tela submucosa and the boundary in the tunica mucosa could not be clearly delineated. (H.E. ×100)

Fig. 4. A thin ulcer formation and a disruption of the lamina mucosalis were seen in the mucosal layer. (H.E. ×100)

Fig. 5. A marked infiltration of eosinophils and other inflammatory cells with granulation tissue occurred. (H.E. ×400)