

Case Report

A rare cause of anemia due to upper gastrointestinal bleeding: Cameron lesion

İsmet Özaydın^{1*}, Sami Doğan², Arif Aslaner³, Mehmet Yaşar¹, Metin Aydın¹

¹Department of General Surgery, Duzce University Medical Faculty, Duzce, Turkey

²Department of General Surgery, Van Training and Research Hospital, Van, Turkey

³Department of General Surgery, Antalya Training and Research Hospital, Antalya, Turkey

Abstract. Asymptomatic large hiatal hernias may lead to iron deficiency anemia due to occult and massive bleeding from linear gastric erosions or ulcers on the mucosal folds at the level of the diaphragm called the Cameron lesions. The diagnosis is usually made during upper gastrointestinal system endoscopies. Current therapy includes the medication with proton pump inhibitors in combination with oral iron supplements and in some cases surgical reconstruction of hiatal hernia with fundoplication. We present a case of a 78-year-old woman who was admitted to the outpatient clinic with the diagnosis of iron deficiency anemia without signs of acute gastrointestinal bleeding. She was treated with medication and her follow-up gastroscopy showed a total cure. She is asymptomatic for two years after treatment with proton pump inhibitors and iron supplements. Cameron lesions should be kept in mind as an unusual cause of iron deficiency anemia due to gastrointestinal bleeding.

Keywords: Cameron lesion, anemia, hiatal hernia

Introduction

Hiatal hernias are usually asymptomatic, if symptomatic symptoms are associated with gastroesophageal reflux disease. The prevalence rates of hiatal hernia range from 0.8 to 2.9 in patients undergoing upper gastrointestinal endoscopy [1]. Cameron and Higgins first described the Cameron lesions in 1986 [2]. Cameron lesions representing linear gastric erosions and ulcers on the crests of mucosal folds at the diaphragmatic impression are seen in 5.2% of patients with hiatal hernia identified on upper gastrointestinal system endoscopies [2, 3]. Those lesions can result in iron deficiency anemia [2-4, 5].

Case Report

A 78-year-old woman was admitted to the outpatient clinic from the internal medicine clinic because of iron deficiency anemia. She complained about body weakness and coldness. On physical examination, she was found to be hypotensive with 100/70mmHg blood pressure and had tachycardia (120/min). On presentation, her complete blood count tests showed subnormal hemoglobin level (5.0 g/dL). She was admitted to the hospital. After transfusion of three units of packed red blood cells and fresh frozen plasma, the patient's hemoglobin increased to 9.2g/dL. She had a history of same episode five years ago. She also suffered from hypertension and congestive heart failure.

She underwent both upper and lower gastrointestinal system endoscopies. A large hiatal hernia and longitudinal linear erosions on the gastric mucosal folds at the impression of the diaphragm consistent with Cameron lesions were seen (Fig. 1) Gastric biopsies were obtained, which later was reported with *Helicobacter pylori* positivity. Colonoscopy was normal. Abdominal ultrasonography was normal. Fecal occult blood test was mildly positive. A proton pump inhibitor (pantoprazol 20 mg four times daily) and iron supplement (ferrum III hydroxyde polymaltose 100 mg daily) tablets were started and she was discharged. Two months later she returned for control endoscopy and the lesions were totally disappeared and now she is asymptomatic for two years.

Discussion

The relation between hiatal hernias and anemia has been known at least since the 1930s [6]. In 1976, Cameron [4] confirmed the relation between large hiatal hernias and anemia. The pathogenesis of the Cameron lesions is not understood. Mechanical trauma to the esophagus caused by respiration related diaphragmatic contractions [2], acid reflux, ischemia, *Helicobacter pylori* infection [7], gastric stasis or vascular stasis [8] may be the main etiologic factors. The prevalence is also likely dependent on the size of the hiatal hernia with a 10%-20% risk for Cameron ulcers in hernias 5cm in size or greater [9] Cameron showed that of 259 patients with radiographic evidence of

*Corresponding author: İsmet Özaydın, MD (ismetozaydin@hotmail.com).

hiatal hernia, 18 were anemic compared to 1 in the control group [4].



Figure 1 Gastrosopic appearance of hiatal hernia and linear Cameron lesions

Medical treatment of Cameron lesions are proton pump inhibitors and oral iron supplements. Persistent anemia and re-bleeding is seen up to 20% of patients [10]. Moskovitz et al. [8] observed healing of lesions in patients treated with H₂-receptor blockers and iron supplement in contrast to those who only received iron. Surgical treatment consists of reconstruction of hiatal hernia and fundoplication. In two studies with large hiatal hernias associated with anemia, anemia resolved after surgery [11, 12]. In another randomized study, there was no significant difference in prevention of recurrent anemia between treatment with proton pump inhibitor alone and the same treatment as combined with surgical correction [7].

In patients with a large hiatal hernia, Cameron lesions should be kept in mind as a rare cause of iron deficiency anemia. The Cameron lesions can be disappeared after treatment of the patient with proton pump inhibitors and iron supplements.

Conflict of Interest

The authors declare no conflicts of interest.

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