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Case Report

A Rare Cause of Upper Gastrointestinal System Haemorrhage: Gastric Antral Vascular Ectasia

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Abstract

Gastric antral vascular ectasia (GAVE) is a rare cause of upper gastrointestinal bleeding and is also difficult to diagnose. This typical endoscopic view was described as watermelon stomach by Jabbari. In the pathogenesis of the disease; mechanical stress, humoral and autoimmune factors and autoantibodies caused by hemodynamic changes are thought to cross-react with specific proteins found in the vessels of the gastric mucosa and submucosa. When the patient, who was hospitalized with the diagnosis of gastrointestinal system hemorrhage, showed findings compatible with GAVE syndrome in the upper gastrointestinal system endoscopy, the patients were treated with argon plasma coagulation twice, but an operation was planned after bleeding did not stop. Laparoscopic antrectomy and gastroenterostomy were performed. Surgical intervention due to comorbidities of the patient has high morbidity and mortality in this patient group. However, in cases where endoscopic treatment methods do not respond, surgical intervention option should be considered.

Keywords: Endoscopy, gave syndrome, watermelon stomach

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Gastric antral vascular ectasia (GAVE) is a rare cause of chronic upper gastrointestinal system (GIS) haemorrhage and iron deficiency anemia with characteristic endoscopic and histological findings. Although it is responsible for 4% of the non-variceal upper gastrointestinal system hemorrhages, the incidence is not clear since it is clinically silent.[1]

GAVE was first described by Ryder as "Erosive gastritis accompanied by prominent venocapillary ectasia" in the pathological examination of the gastrectomy specimens of patients who underwent an antrcctomy in 1953.[2] It is characterized by an erythematous appearance showing a linear and/or diffuse diffusion through the radial extension from pilor towards the antrum. This typical endoscopic view was described as watermelon stomach by Jabbari.

GAVE is frequently seen in older female patients and 30% of patients have accompanying liver disease and 60% have accompanying autoimmune disease.[3] Although its pathogenesis is not clearly known today, it is thought that the cross-reaction of autoantibodies caused by mechanical stress, humoral and autoimmune factors and hemodynamic changes with specific proteins found in the vessels of the gastric mucosa and submucosa, cause the disease.[4] Another opinion is that it causes intermittent obstruction and vascular ectasia in submucosal vessels due to partial prolapse of antrum secondary to increased gastric peristalsis.[5]

Patients are usually asymptomatic. It is mostly detected in

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upper gastrointestinal endoscopy during the investigation of iron deficiency anemia because of occult bleeding. No biopsy is needed due to its typical endoscopic appearance. Patients rarely apply melena due to massive gastrointestinal bleeding.[6]

We aimed to present a case with massive gastrointestinal bleeding that could not be treated with endoscopic treatment methods and underwent laparoscopic antrectomy.

Case Report

A 56-year-old female patient with type 2 diabetes mellitus and type 1 Gaucher disease (body mass index: 48 kg/m), who was applied to the hospital's emergency service with complaints of dyspnea, malaise and melena with hemoglobin level of 5.6 gr/dL, was hospitalized and examined due to gastrointestinal system haemorrhage. Three units of erythrocyte suspension were given to the patient and following upper gastrointestinal endoscopy, GAVE findings were observed with active bleeding (Fig. 1). Simultaneous argon plasma coagulation was performed. Endoscopy was repeated on the second day after the procedure because of the decrease in Hgb level and bleeding from the same foci was observed again. Argon plasma coagulation was performed for the second time. The bleeding was controlled, but the patient was scheduled for an operation on the first day after the second procedure, as the patient had recurrent bleeding and Hgb decline (Hb: 6.7 gr/dl). After erythrocyte suspension transfusion, the patient was operated. The patient underwent laparoscopic antrectomy and gastroenterostomy (Fig. 2). During the operation, the liver was cirrhotic in the nodular type (Fig. 3). There were no need for transfusion in the postoperative follow-up and the patient was discharged on the 6th day without any problems. The pathology revealed erosive gastritis with dilatation of the mucosal vessels and disseminated intravascular thrombi (Fig. 4).

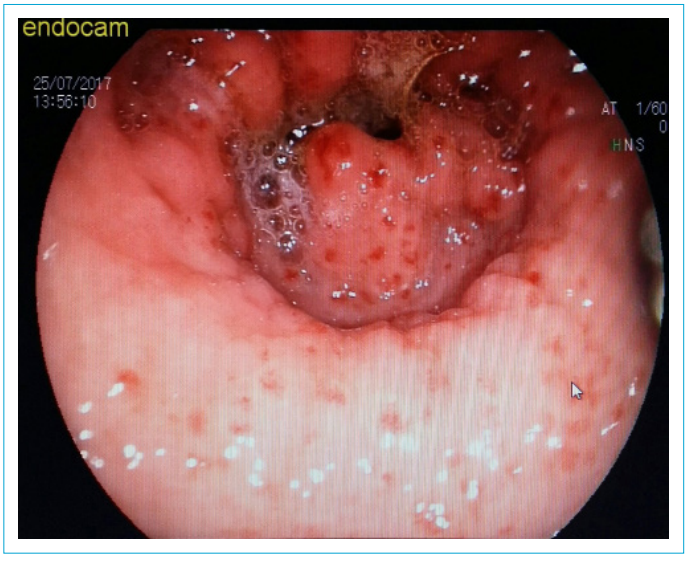

Figure 1. Endoscopic appearance of widespread petechial type bleeding foci and vascular ectasia in the antrum.

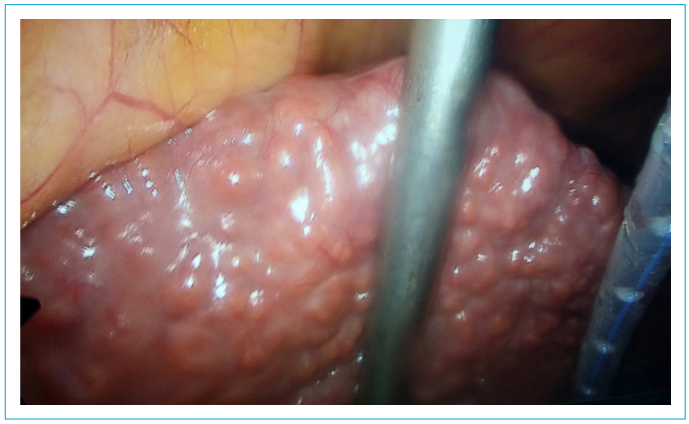

Figure 2. Aneurectomy material view of ectasic vessels in antrum.

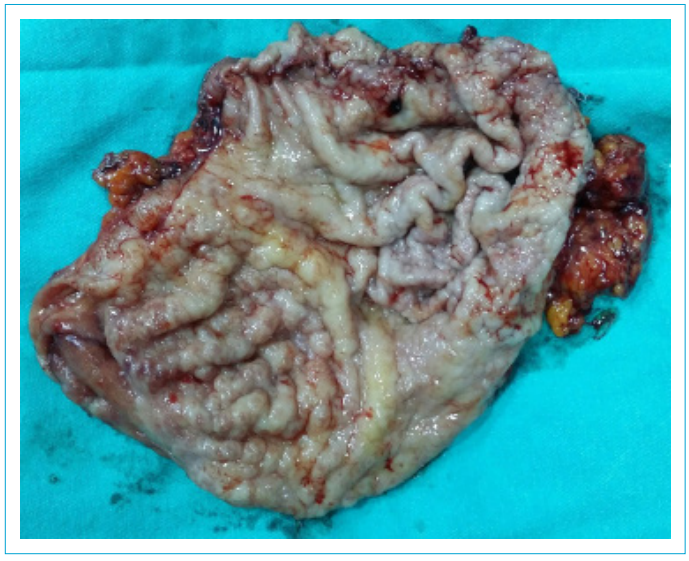

Figure 3. Micronodular appearance in liver.

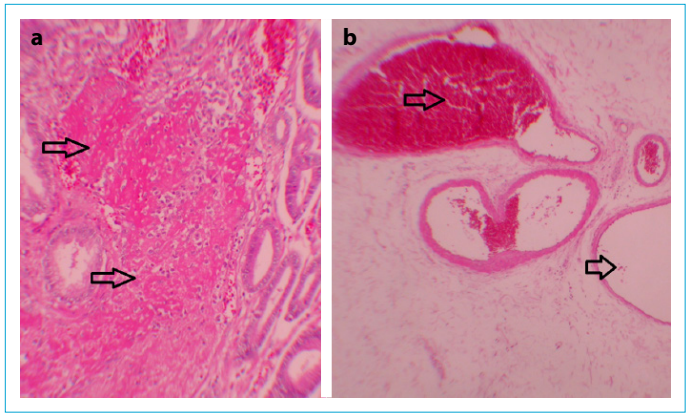

Figure 4. (a) Ectatic vascular structure in the mucosa including fibrin thrombus. (arrow) H&Ex100, **(b)** Hyperemic and highly dilated submucosal vein structures. (arrow) H&ex100.

Discussion

GAVE is a rare but serious cause of upper GIS haemorrhage. Although patients may present with occult bleeding, chronic iron deficiency anemia requiring frequent transfusion and severe upper GIS bleeding, a case with gastric outlet obstruction has been reported.[10] It is usually confused with Portal Hypertensive Gastropathy (PHG) because of the accompanying chronic liver disease. However, PHG is typically found in the corpus and antrum while GAVE is located in the antrum. Patients with GAVE do not respond to beta-blockers and nitrates, which are the standard treatment of PHG.[5]

Chawla et al. defined 3 macroscopic patterns in GAVE. The first and the most seen macroscopic pattern is the erythematous lines extending from the pylorus simulating a watermelon like a wheel bar, and is described as "watermelon stomach". The second appearance is characterized by the combination of honeycomb stomach and angiodysplastic lesions in the antrum. The third and least visible pattern is formed by clustering of mushroom-like ectopic blood vessels with a prominent demarcation line.[6]

Endoscopic techniques including sclerotherapy, multipolar electrocoagulation, argon and laser photocoagulations and argon plasma coagulation (APC) are applied in the treatment. High-dose or standard-dose proton pump inhibitor should be added to the treatment. In addition, blood transfusion is required when necessary.[7,8]

Argon plasma coagulation is a technique of simultaneous application of high frequency electric current while the non-combustible ionized argon gas is transferred to the target tissue in a pressurized manner and thus, forming coagulation necrosis in the tissues using the conductive property of argon gas. Succesful results were reported in the treatment of GAVE with a 80% success rate and in the treatment of angiodysplasia caused by upper gastrointestinal system with a 100% success rate.[9] Surgery can be considered in refractory GAVE cases not responding to argon plasma coagulation. However, no cases of surgery exist in the literature. Surgical resection (antrectomy) is associated with high morbidity and mortality. However, in the presence of other serious diseases and in refractory cases, surgery may be the last option.[8]

Conclusion

GAVE, which is usually diagnosed in upper gastrointestinal endoscopy due to chronic iron deficiency anemiaca, rarely cause massive gastrointestinal hemorrhage. Surgical intervention due to comorbidities of the patient are carried out with high morbidity and mortality in this patient group. However, in cases where endoscopic treatment methods do not respond, surgical intervention option should be considered.

Disclosures

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Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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