

A rare case of watermelon stomach in woman with continuous ambulatory peritoneal dialysis and systemic lupus erythematosus

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Abstract

We report a case of a 42-year-old woman with systemic lupus erythematosus and chronic kidney disease stage 5 undergoing continuous ambulatory peritoneal dialysis, presenting asthenia, dizziness, abdominal pain and small efforts dyspnea. After a complete physical and clinical examination, including laboratory tests, esophagogastroduodenal endoscopy and gastric lesions biopsy, she was diagnosed with gastric antral vascular ectasia. We are facing a rare case of antral vascular ectasia in a patient associating both chronic kidney disease and autoimmune disease.

Keywords: systemic lupus erythematosus, watermelon stomach, continuous ambulatory peritoneal dialysis, anemia.

Introduction

Gastric antral vascular ectasia (GAVE), also known as "watermelon stomach", may be involved in non-variceal upper gastrointestinal (GI) bleeding development [1]. In 1953, Rider JA *et al.* presented the first documented case, describing "an erosive type of gastritis with marked veno-capillary ectasia" [2, 3].

GAVE may cause severe GI bleeding, being associated with autoimmune disorders (a prevalence of 60%) and liver cirrhosis (30%) [4, 5]. Additionally, comparing with the male gender, elderly-female patients are most affected (in 80% of cases with a median age of 74 years) [1, 6]. Endoscopic pattern represents the main criteria for the positive diagnosis: longitudinal flat rows, reddish stripes diverging from the pylorus into the antrum (resembling the stripes of a watermelon) or a diffuse pattern of small spots observed in the antrum [1, 7, 8]. The differential diagnosis includes several pathologies: moderate to severe gastritis [9] or portal hypertensive gastropathy [1, 10], diseases excluded after performing endoscopic biopsy [2].

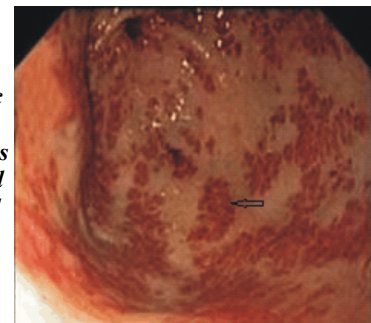
We report the case of a female patient with chronic kidney disease (CKD) stage 5 with systemic lupus erythematosus (SLE) who presented blood loss anemia and further on diagnosed with vascular ectasia involving the antrum.

Patient, Methods and Results

A 42-year-old woman with history of SLE and end-stage renal disease on continuous ambulatory peritoneal dialysis (CAPD) for 40 months, in treatment with Prednisone 20 mg/day, referred to our Nephrology Clinic

for asthenia, dizziness, abdominal pain, small efforts dyspnea, symptomatology initiated one month ago. At physical exam, she was hemodynamically balanced, and the following features were noticed: pallor of skin and extremities, swelling of the small joints of both hands, heart rate of 115 beats per minute and respiratory rate of 22 breaths per minute. Digital rectal examination revealed normal stool on the glove exam. Laboratory tests showed hypochromic, microcytic anemia (Hb=6.7 g/dL, MCV=66.8 fL, MCH=22.6 pg – patient being under treatment with Darbepoetin Alpha 50 µg/two weeks), decreased serum iron concentration (16 µg/dL), elevated values of BUN=97 mg/dL and serum creatinine level (7.27 mg/dL); CRP, serum potassium, blood sodium levels, hepatic assays and glycemia were in normal range. Fecal occult blood test was positive. Esophagogastroduodenal endoscopy showed the presence of visible columns of red tortuous ectatic vessels along the longitudinal folds of the antrum (Figure 1).

Figure 1 – Endoscopic aspects of GAVE: columns of red tortuous ectatic vessels disposed along the longitudinal folds of the antrum.



The lesions biopsy revealed gastric antral mucosa with fibromuscular hyperplasia, foveolar hyperplasia, reactive changes of the foveolar epithelium and dilated

superficial capillaries containing microthrombi (Figure 2). We diagnosed gastric antral vascular ectasia (“watermelon stomach”) in a CAPD patient associating SLE.

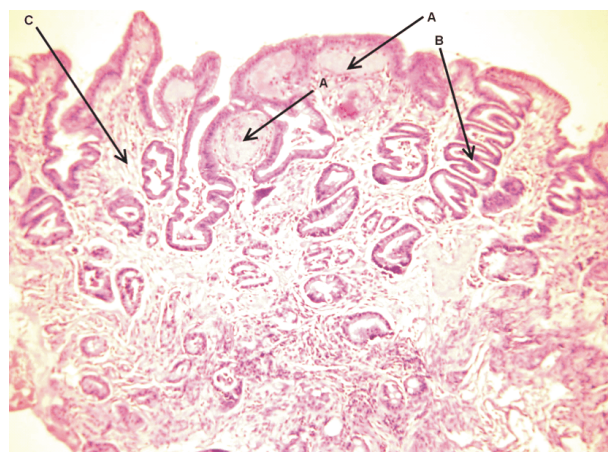


Figure 2 – Microscopic aspects of GAVE, 4- μ m histological section (HE staining, $\times 200$): foveolar hyperplasia with regenerative changes of foveolar epithelium, dilated superficial mucosal capillaries with fibrin thrombi and fibromuscular hyperplasia in the lamina propria; no pathological inflammation is seen. (A) Dilated superficial mucosal capillaries with fibrin thrombi; (B) Foveolar hyperplasia with regenerative changes of foveolar epithelium; (C) Fibromuscular hyperplasia in the lamina propria.

Immediately after the diagnosis was confirmed, separate sessions of endoscopic ablation with argon plasma coagulation (APC) were performed for the vascular malformations located in the antrum. After endoscopic treatment, a proton pump inhibitor was given orally and iron supplementation intravenously, with food intake started six hours thereafter. The patient tolerated well the procedure and there were no further complications associated with the endoscopic therapy.

After two months, the upper digestive endoscopy revealed multiple cherry-red spots in the antrum. Due to endoscopic ablation, GAVE was significantly diminished (Figure 3). Her anemia responded favorable to iron supplementation and her hemoglobin concentration was maintained at around 10 g/dL, after endoscopic ablation.



Figure 3 – Endoscopic aspect from the last session of APC: note the lesions improvement.

Discussion

In some cases, GAVE causes severe upper GI bleeding, representing about 4% of non-variceal upper GI hemorrhage [1, 6]. Occasionally, endoscopic diagnosis can be misleading but the biopsy findings [2] can rapidly exclude the possibility of a severe gastritis [9] or portal hypertensive gastropathy [1, 10].

The evolution of many diseases can be significantly

altered by GAVE syndrome (autoimmune disease, chronic liver disease, chronic kidney disease). Most frequently autoimmune diseases associated with GAVE, are Raynaud’s phenomenon and sclerodactily, present in 60% of the cases [2, 11]. SLE and connective tissue disorders rarely occur in GAVE [12]. GAVE incidence in CKD is unknown, scarcely mentioned by medical literature [13].

We reported the case of a patient presenting CKD and autoimmune disease, both associated with GAVE. What is even more interesting is that GAVE is rare in patients with SLE or those undergoing peritoneal dialysis. Additionally, whether the autoimmune disease, CKD or the association of both diseases were the main causes of GAVE development remained unclear.

GAVE’s pathogenesis is still undetermined but there are some theories, such as mechanical stress, hemodynamic alterations, humoral and autoimmune factors that could be incriminated [2]. The presence of autoantibodies and autoimmune associated disease has been determined in up to 60% of patients with GAVE, which led to an autoimmune pathogenesis approach [2, 11]. Several autoantibodies have been detected in patients with GAVE: antinuclear antibodies and anti-centromere antibodies (implicated in cell growth process), especially in patients diagnosed with systemic sclerosis and GAVE [5, 14, 15].

Some studies emphasized the presence of an anti-nucleolar antibody that specifically recognized a RNA helicase II by cross-reacting with specific proteins (present in gastric mucosa vessels) and inducing the typical alterations [5].

Pharmacological, surgical, and endoscopic therapies are recommended for GAVE resolution [2]. Tranexamic Acid, Estrogen–Progesterone therapy and Octreotide injections were proved and considered the most effective pharmacological treatments [2].

The surgical and endoscopic approach is most commonly used, due to the controversial results proven by drug therapies. The definitive therapy for GAVE is surgical antrectomy but it increases the mortality rate [2, 15].

In GAVE-related bleeding patients, initially endoscopic therapy should be considered, especially APC [16]. APC represents a non-contact thermal procedure that distributes high-frequency current with a controllable depth of coagulation (0.5–3 mm) to the selected tissue where the argon gas is ionized [5, 16, 17]. There were rarely encountered complications, predominantly mild, such as intestinal gas distension that was most frequently reported [17, 18]. As reversible conditions, wall emphysema and intestinal pneumatosis were mentioned [17, 18].

In our patient, separate sessions of endoscopic ablation with APC were performed for the vascular malformations located in the antrum, and the procedure was well tolerated without further complications associated with the therapy. After the endoscopic approach, GAVE lesions were significantly diminished and the patient’s hemoglobin concentration was maintained at around 10 g/dL.

Conclusions

This diagnosis should be considered especially in patients presenting more than one risk factors for developing GAVE and showing signs of refractory anemia to treatment. Further clinical and experimental

trials should be conducted to determine the incriminated pathophysiological mechanisms.

Contribution note

All the authors contributed equally to this paper.

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