

## Gastric Antral Vascular Ectasia Successfully Controlled by Argon Plasma Coagulation

### Dear Editor,

Gastric antral vascular ectasia (GAVE) is an uncommon but important cause of chronic gastrointestinal blood loss and iron deficiency anaemia. The syndrome was first described in 1953 by Ryder et al in the gastrectomy specimen of an elderly woman. It was not until 1984 when Jabbari et al described the unique endoscopic appearance as “prominent erythematous stripes radiating in a spoke-like fashion from the pylorus to the antrum”. This led Jabbari et al to coin the term “watermelon stomach” for this condition. Biopsies usually show fibromuscular hyperplasia of lamina propria, intravenous fibrin thrombi and an increase in the mean cross-sectional area of the lumen in mucosal vessels. However, histology is not necessary for diagnosis of GAVE.<sup>1</sup> We describe a patient with GAVE who was successfully treated with argon plasma coagulation (APC).

A 51-year-old man was admitted in July 1995 for symptomatic anaemia. Physical examination was unremarkable and investigations showed iron deficiency anaemia. The haemoglobin level on admission was 5.7 g/dL. Serum iron and total iron binding capacity were 4 µmol/L and 75 µmol/L respectively. The patient was given blood transfusion and oesophagogastroduodenoscopy showed linear antral gastritis. He was subsequently discharged with oral ranitidine and ferrous fumarate. The haemoglobin level on discharge was 10.4 g/dL.

The medications were continued and the patient’s haemoglobin level subsequently normalised. However, the stool occult blood was persistently positive. Oesophagogastroduodenoscopy in November 1996 showed linear antral gastritis and colonoscopy then was normal. The patient developed an episode of melaena in December 1997. Oesophagogastroduodenoscopy performed then revealed linear erythematous stripes and the diagnosis of GAVE was made.

The melaena became more frequent in 2001 and the patient underwent 3 sessions of APC in that year. Oral omeprazole was commenced. Iron supplements were no longer required after the third APC. The fourth and fifth sessions of APC were performed in May 2002 and August 2003 respectively. The vascular ectasia had largely disappeared after the fifth APC. The patient remained well until August 2005 when melaena recurred. Oesophagogastroduodenoscopy then showed recurrence of GAVE (Fig. 1) and APC was performed. There were no further episodes of melaena thereafter.

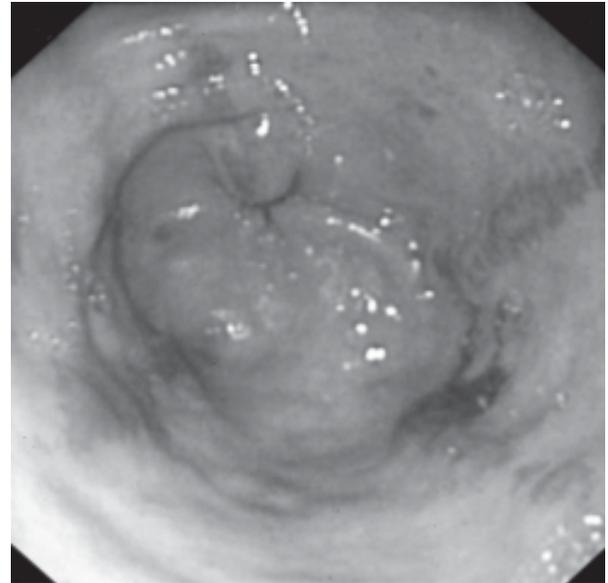


Fig. 1. Endoscopic appearance of the gastric antral area showing the erythematous stripes consistent with gastric antral vascular ectasia.

It is widely believed that GAVE is under-recognised and is often misinterpreted as antral gastritis.<sup>1</sup> Four distinct endoscopic patterns have been described. The majority of patients have antral disease with classic raised ridges covered by ectatic vascular tissue radiating out from the pylorus. Other patterns include lesions arranged in radiating flat stripes, scattered multiple mucosal lesions, or a mixture of the above patterns.<sup>2</sup> Although predominantly an antral disease, vascular ectasia have been noted in other areas of the stomach and duodenum.<sup>1</sup>

Most of the patients diagnosed to have GAVE are elderly, with a preponderance of women. The majority of patients present with iron deficiency anaemia secondary to occult blood loss. The aetiology of GAVE remains unknown and it is often associated with other conditions. The most commonly reported association is autoimmune disorders. Cirrhosis is found in 30% of patients. However, studies have shown that portal hypertensive gastropathy and GAVE are 2 distinct entities. Other reported associations include ischaemic heart disease, hypertension, chronic renal failure, pernicious anaemia and bone marrow transplant recipients.<sup>1</sup>

We report a male patient with GAVE and there was no association with other conditions. This patient was younger than most of the reported cases. This case clearly

demonstrates the problem of recognising GAVE as the initial diagnosis was antral gastritis. Tsai et al<sup>3</sup> reported an average diagnostic latency of 5 years before antral vascular ectasias were recognised as the site of gastrointestinal blood loss. GAVE should be kept in mind as a potential cause of gastrointestinal bleeding, especially in patients with “antral gastritis”. A repeat oesophagogastroduodenoscopy will be helpful in such cases when there is recurrent anaemia despite adequate treatment.

The treatment options for GAVE include pharmacologic, surgical and endoscopic therapies. Some of the pharmacologic treatments which have been reported are corticosteroid, hormonal therapy, octreotide and tranexamic acid. However, these were mainly case reports or small case series. Surgical resection provides the most definitive therapy for GAVE and antrectomy is by far the most used procedure. However, surgery has significant morbidity and mortality as most of the patients are elderly patients with significant co-morbid illnesses.<sup>1</sup>

Endoscopic therapy is the mainstay of conservative therapy. The endoscopic techniques that have been described for treatment of GAVE are neodymium:yttrium-aluminium-garnet (Nd:YAG) laser, APC, heater probe and argon laser. Good results with Nd:YAG laser have been reported but its use is limited by high cost and inconvenience. Furthermore, complications such as secondary bleeding from ulcers, gastric perforations and antral stenosis had been reported.<sup>4</sup>

APC is a no-touch electrocoagulation technique. Its advantages lie in the limited depth of penetration (which reduces the risk of perforation) and the symmetrical spread of coagulation effect in the surrounding mucosa.<sup>1</sup> The number of sessions needed to eradicate GAVE depend on the pattern, the extent and the number of lesions. Typically, 2 to 4 sessions are needed to achieve complete eradication of GAVE.<sup>4</sup> Yusoff et al<sup>5</sup> reported a 40% recurrence rate of GAVE after a mean follow-up of 20 months. The patients responded to further APC. Our patient had recurrence 2 years after an initial successful course of APC. It has also been noted that APC was a safe and effective short-term treatment for GAVE.<sup>5</sup> Our patient underwent a total of 6 sessions of APC without any complications. Furthermore, he did not require iron supplements after the third session

of APC. This clearly demonstrates the safety and efficacy of APC.

In summary, GAVE is an uncommon cause of gastrointestinal blood loss and may be misdiagnosed as antral gastritis. This could be because some cases of GAVE may not have the distinct erythematous stripes during its early stage. APC is a safe and effective form of treatment of GAVE but repeated sessions may be required due to recurrence. The patient should continue to be followed-up after the initial successful treatment with APC. It is hoped that an increasing awareness of GAVE will facilitate the early identification of this treatable cause of gastrointestinal blood loss.

#### REFERENCES

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