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CASE REPORT

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Refractory Gave Treated with Radiofrequency: Two Cases of Complete Response

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Abstract

Gastric antral vascular ectasia (GAVE) is an uncommon cause of upper gastrointestinal bleeding. Up to date, standard of care of GAVE is endoscopic treatment with argon plasma coagulation (APC) or endoscopic band ligation (EBL). Despite good technical efficacy of these techniques, approximately two third of patients remain dependent on blood transfusions after therapy. One of the emerging and more promising endoscopic treatments for GAVE is radiofrequency ablation (RFA) with focal catheters (e.g. HALO90 and HALOULTRA).

We present two cases of refractory GAVE treated with radiofrequency ablation with the smaller and easy handling through-the-scope catheter, with complete response.

Keywords: *GAVE, Endoscopic therapy, Radiofrequency ablation, RFA*

Introduction

Gastric antral vascular ectasia (GAVE) is a relatively uncommon disorder, which accounts for 4% of non-variceal upper GI bleeding.

It is characterized by the presence of longitudinal antral folds converging on the pylorus, containing visible columns of tortuous red ectatic vessels [1]. One, less frequent, variant of GAVE is a 'diffuse form', in which red stripes are not visible and vascular ectasia presents with many angiodysplastic lesions in the antrum. In additions to its pathognomonic appearance, GAVE presents histological features including ectasia of mucosal capillaries, intravascular fibrin thrombosis, fibromuscular hyperplasia of the lamina propria, and spindle cell proliferation [2].

Clinical presentation ranges form overt to occult gastrointestinal bleeding associated with acute or, more frequently, chronic iron-deficiency anemia. Most of patients are older age (>70 years old) and female [3]. Moreover, GAVE is often associated to systemic conditions such as liver cirrhosis, autoimmune connective tissue disorders, scleroderma, heart diseases, chronic renal failure and it is more frequent in patients undergoing bone marrow transplantation [4].

Over time several pharmacological, endoscopic and surgical treatments have been proposed without fully satisfactory results [5-8]. One of the emerging and more promising endoscopic treatments for GAVE is radiofrequency ablation (RFA), a technology that has been primarily developed for treatment of Barrett esophagus. Current studies testing RFA for treatment of GAVE with focal catheters (e.g. HALO^{90} and HALO^{ULTRA}) showed a good technical and clinical effectiveness, in absence of major adverse events [9-13].

Compared to RFA focal catheters, the channel RFA electrode has a smaller contact surface, needing a large number of applications. Despite this, it presents the advantage to deliver radiofrequency directly through the working channel of the endoscope, avoiding multiple endoscope introductions and providing a better control and maneuverability.

We present two cases of refractory GAVE treated with radiofrequency ablation by through-the-scope RFA catheter, with complete response.

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Case Report 1

A 81 year old caucasian woman was admitted to our unit in May 2016 for the diagnostic definition of a moderate iron-deficiency anemia of 6 months duration (Hb 7,8 g/dl, MCV 78 fL, MCHC 30 g/dl, Ferritin 3 ng/ml). A colonoscopy showed a normal endoscopic picture, while an upper esophagogastroduodenoscopy (EGD) found an antral gastric ectasia with longitudinal antral folds with columns of tortuous ectatic vessels converging on the pylorus. Multiple biopsy specimens from antrum were performed and histological examination confirmed the diagnosis of GAVE.

Due of persistence of symptoms and anemia, in February and March 2016 two sessions of endoscopic treatment with argon plasma coagulation were performed without clinical response and persistence of transfusion-dependent anemia in the followings months.

In view clinical failure of previous medical therapy and APC treatment, in May and June 2016 the patient was treated by two sessions of radiofrequency endoscopic ablation with the Barrx™ through-the-scope RFA catheter.

Every session was performed placing the device at 12 or 6 o'clock, starting at the pylorus and working proximally providing a maximum of 2 hits in the same area with an energy density of 12 J/cm2. The average duration of each session was 30 minutes, with a number of applications ranging form 60 to 80. Every session reached a full technical success without any complication during and after the procedure.

During the following 24 weeks of follow-up, Hb values raised from 9,8 g/dl to 12,5 g/dl, no further blood transfusions were necessary and the patient reported a significant improvement in overall clinical condition with resumption of normal daily activities.

EGD performed at the 12th, 24th and 48th week of follow up showed the endoscopic outcomes of mucosal thermal ablation, with disappearance of the vascular ectasia pattern in absence of other macroscopic findings. The patient is still asymptomatic with stable values of hemoglobin steadily above 12 mg/dl.

Case Report 2

A 68 year old caucasian man was admitted to our clinic in April 2015 for the therapeutic management of a chronic anemia (Hb 7 g/dl, MCV 75 fL, MCHC 28 g/dl and Ferritin 4 ng/ml). During hospital stay two blood transfusions intravenous iron supplement were performed. A colonscopy showed a normal endoscopic picture. An EGD found an antral gastritis with multiple angiodysplastic lesions in the antrum resembling the "diffuse" variant of GAVE (Figure 1a). Biopsy specimens collected from antrum, body and fundus confirmed endoscopic suspicious of gastric antral vascular ectasia. After discharge, periodic transfusions (about one every two months) were required for the following two years.

In August 2016 the patient was referred to our unit. In view clinical failure of previous medical therapy, he was treated by two sessions of radiofrequency endoscopic mucosal ablation with the Barrx™ through-the-scope RFA catheter. Every session was performed using the same protocol applied in case 1. Every session reached a full technical success without any complication during and after the procedure (Figure 1b).

EGD performed at the 12th week of follow up showed the endoscopic outcomes of mucosal thermal ablation, with considerable improvement of the gastric lesions in absence of other macroscopic findings. During the following weeks, Hb values raised from 9,7 g/dl to 10,5 g/dl and after a long period, no further transfusions have been required for the following months, showing a good clinical outcome. Currently, after 18 month of follow-up the patient presents good clinical conditions and he's still asymptomatic.

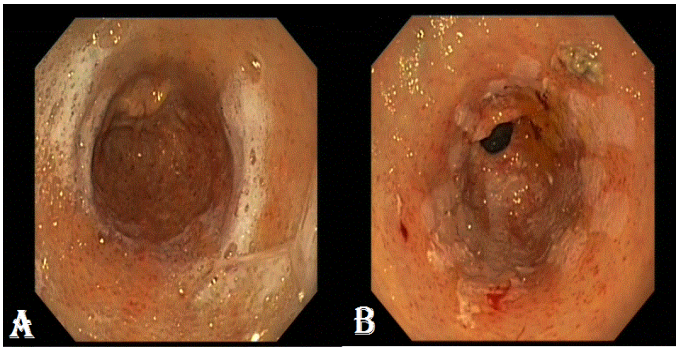

Figure 1. GAVE appearancebefore (A) and after (B) treatment with radio-frequencyablation.

Discussion

Radiofrequency ablation with the Barrx™ system is a new, promising technique for endoscopic treatment of GAVE. Current evidences support its technical and clinical effectiveness, in absence of major adverse events.

Our experience, although limited, seems to confirm this line of evidences. In contrast to other reports [14-15], we used through-the-scope RFA catheter as we believe that is more handy and confortable to since it can be inserted through the working channel, avoiding multiple endoscope introductions and providing a better maneuverability. In view of this, we suggest to consider the use of this smaller and easy handling channel device for an effective and more confortable radiofrequency ablation of non-extended refractory GAVE. In future, prospective controlled trials with adequate follow-up are needed to better define effectiveness and safety of this procedure.

Author Contributions

Maida M and Scarpulla G are guarantors of integrity of entire study and contributed to the manuscript drafting and manuscript revision for important intellectual content; Maida M, Morreale GC and Scarpulla G contributed to the manuscript editing; all authors contributed to writing the paper and had full control over preparation of manuscript; all authors approved the final draft manuscript.

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