Angiodysplasias Successfully Treated with A Combination of Endoscopic Band Ligation and Argon Plasma Coagulation: A Case Report

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A 74-year-old Japanese man was admitted to our hospital due to repeated episodes of upper gastrointestinal (GI) bleeding, anemia and melena, which he had suffered for the preceding two years. We performed several panendoscopic and angiographic examinations, but could not discover the cause of his anemia. In addition, we performed jejunectomy because arteriovenous malformation (AVM) was suspected to exist in the jejunum. However, we found no evidence of AVM in the resected portion of the jejunum. During an endoscopic GI study on his seventh admission, we found hemorrhaging gastric angiodysplasia (AGD) in the upper body of the stomach. Moreover, we found another small AGD in the lower body of the stomach. We treated these lesions endoscopically using a combination of hemoclip, endoscopic band ligation and argon plasma coagulation.

When diagnosing patients presenting with the symptoms described herein, the physician should consider small AGDs and check the GI tract accordingly, to prevent unnecessary resections. In the present subject, there has been no further bleeding and no other lesions have been detected in his upper GI on endoscopic examination during a 12-month follow up. (Kitakanto Med J 2007; 57: 247~250)

Key Words: angiodysplasia, endoscopic band ligation, argon plasma coagulation

Introduction

Vascular ectasia disorders comprise a broad range of conditions including angiodysplasia (AGD), gastric antral vascular ectasia (GAVE), and telangiectasia associated with multisystem disease.¹ Vascular ectasias are the cause of upper GI bleedings in 5 % to 7 % of patients.² In this category, AGD is defined endoscopically as either single or multiple 2- to 5-mm diameter bright red round spots with uniform or slightly irregular margins.³ The American Society For Gastrointestinal Endoscopy (ASGE) guidelines recommends endoscopic cauterezation and mechanical therapies for the treatment of acute non-variceal upper-GI hemorrhage.⁴ EBL is thought to be effective, simple and safe for AGDs.⁵ Argon plasma coagulation (APC) is a relatively new method that is primarily used for the treatment of superficial lesions, such as vascular abnormalities.² Keeping in mind their effectiveness for vascular abnormalities, we thought it would be useful to use them together accordingly.

Case Report

A 74-year-old Japanese man was admitted to our hospital suffering from melena, severe anemia and hypotension. He had undergone distal gastrectomy to treat gastric cancer when he was 53 years of age. During the two years prior to his present admission, he had suffered repeated episodes of melena and had been hospitalized several times. After receiving blood
transfusions and iron supplements, he recovered normal levels of hemoglobin every time. We performed jejunectomy because arteriovenous malformation (AVM) was suspected to exist in the jejunum. But AVM was not found in the resected portion of the jejunum. Detailed evaluation, including panendoscopic and technetium-labeled RBC scans, failed to disclose the cause of his repeated G1 bleeding. Bone marrow examinations were normal.

Two months after the patient underwent jejunectomy, he visited our hospital presenting with melena and hypotension. On arrival, he exhibited pale conjunctiva and a flat jugular vein. Initial examinations revealed the following: hemoglobin: 5.9 g/dl; heart rate: 108 beats/min; respiratory rate: 20 times/min; and blood pressure: 90/60 mmHg. Results of coagulation studies were normal and there was no evidence of hemolysis (Table 1). We then performed an emergent upper GI endoscopy, and discovered a tiny blood clot in the upper body of the stomach. During endoscopy, seeping hemorrhage was noted from the base of this blood clot. Based on this finding, we attempted to place hemoclips over the bleeding sites using endoscopy (Fig. 1). We diagnosed this lesion as an AGD about 5-mm in diameter.

Despite this treatment, four weeks later, he visited our hospital again complaining of tarry stool and anemia. EBL was performed on another AGD about 4-mm in size, which was discovered in the lower body of the stomach (Figs. 2A, 2B). We also performed APC on the AGD which we had previously treated in the upper body of the stomach (Figs. 3A, 3B). A standard upper endoscope (GIF-XQ 240, Olympus Optical Co., Ltd., Tokyo, Japan) were used for both EBL and APC. For EBL, a pneumatic-activate EVL device® (Sumitomo Bakelite, Tokyo, Japan) was used with no overtube. APC was performed with a high-frequency current generator (ICC200, ERBE Elektromedizin GmbH, Tübingen, Germany), and a 2.3 mm-diameter probe. Gas flow was set at 2 liters per minute, and power was set to 60 Watts with a pulse duration of 3 seconds. This series of therapies was successful and there has been no recurrence of bleeding and no new lesions were detected during the 12-month follow up period.

Discussion

Vascular ectasia disorders include AGD, GAVE, and telangiectasia associated with multisystemic disease.1 Vascular ectasias are the cause of upper GI

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WBC, white blood cell; RBC, red blood cell; Hb, hemoglobin; Ht, hematocrit; APTT, activated partial thromboplastin time; PT, prothrombin time; AST, aspartate aminotransferase; ALT, alanine aminotransferase; LDH, lactate dehydrogenase; ALP, alkaline phosphatase; γ-GTP, gamma-glutamyl transpeptidase; CHE, choline esterase; T.bil, total bilirubin; BUN, blood urea nitrogen.

![Fig 1](image_url) Endoscopic view of an AGD in the upper body of the stomach after attachment of a hemoclip. Hemorrhage was not detected.
bleedings in 5% to 7% of patients, and are commonly found in elderly patients, patients with diseases like aortic valve disease, and kidney patients undergoing long-term hemodialysis. AGD is defined endoscopically as either single or multiple 2- to 5-mm diameter bright red round spots with uniform or slightly irregular margins and AGD of the stomach or duodenum has been found in 1% to 2% of consecutive subjects undergoing upper GI endoscopy for a variety of conditions. However, AGD is detected and is considered the cause of hemorrhage in up to 4% of patients evaluated for upper GI bleeding. We diagnosed the lesions in the present case as AGD because they appeared as discrete, flat, red lesions about 5 mm in size.

Endoscopic techniques are currently considered the treatment of choice for patients with bleeding GI vascular lesions. Vascular malformations typically cause microscopic chronic blood loss and, occasionally, acute GI hemorrhage. EBL, laser, APC, contact cauterization, and sclerotherapy have been reported to be effective in treating these lesions. APC is primarily used for the treatment of superficial lesions, such as vascular abnormalities. APC is an effective and safe technique in the management of symptomatic bleeding from GI vascular lesions. EBL devices, commonly
used in variceal bleeding, have also been used to treat non-variceal causes of bleeding and involve the placement of elastic bands over tissue to produce mechanical compression and tamponade. Thus, EBL is thought to be efficient, simple, safe for AGD and it is now being used to treat many bleeding GI disorders as well. Furthermore, EBL is relatively inexpensive. However, lesions located inside fibrotic tissues, like ulcer scars, can be difficult or impossible to band. In such cases, APC can be used to stop bleeding. Moreover, APC is effective for prevention of recurrent bleeding from AGD.

Repeated episodes of GI bleeding of unknown etiology are a frequently encountered and perplexing clinical problem in AGD patients. Since small AGD lesions cannot be detected with panendoscopy, angiography or scintigraphic study, resection is sometimes performed. The physician should consider the possibility of small AGD lesions in mind when making a diagnosis of patients with GI bleeding in order to prevent unnecessary resections. In our case, mechanical therapy (EBL and endoscopic clips) could be used on the bleeding sites. But a small AGD remained near the scars from the patient’s previous treatment. Since scar tissue is difficult to ligate by EBL, we decided to use APC. This allowed us to successfully treat the patient’s AGDs.

There has been no further bleeding and no new lesions have been detected on endoscopic examination of the patient’s upper GI during the 12-month follow-up period. Thus, we conclude that EBL used together with APC is effective combination for the treatment of AGD.

Reference