Recurrent Upper Gastrointestinal Bleeding Caused by Gastric Angiodysplasias

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ABSTRACT

Gastric angiodysplasia, a typical discrete lesion with flat and bright-red color in gastric mucous and submucous, is one of the cause of recurrent upper gastrointestinal bleeding. Mostly, angiodysplasia found as multiple lesion in different location. Melena, hematemesis, and chronic anemia is a consequence of untreated gastric angiodysplasia. Sometimes, it is hard to diagnose, because of its similarities with another gastric mucosa lesion and an inadequate gastric distention during endoscopic procedure. Both pharmacological and non-pharmacological therapy were used to treat this condition in daily clinical practice, one of them is argon plasma coagulation as thermal modalities during endoscopy procedure. This therapy promise an effective angiodysplasia therapy to stop upper gastrointestinal bleeding and further complication.

Gastric angiodysplasias causing recurrent gastrointestinal bleeding were found in a 73-year old man. He had been hospitalized for several times in the last two years in various hospitals in his home country as well as abroad, because of hematemesis and/or melena. The previous repeated gastroscopic examination by experienced endoscopists revealed erosive gastritis. After receiving blood transfusions, gastroscopy was performed and showed multiple small, flat bright-red mucous lesions in different size in the stomach. The lesions were succesfully treated with argon plasma coagulation (APC). During a follow-up period of more than 18 months no further recurrent bleeding was observed.

Keywords: *gastric angiodysplasia, recurrent bleeding, argon plasma coagulation*

ABSTRAK

Angiodisplasia lambung, dengan lesi diskrit yang khas dengan warna merah cerah dan tipis di mukosa lambung dan submukosa, merupakan salah satu penyebab perdarahan saluran cerna bagian atas. Angiodisplasia sebagian besar ditemukan sebagai beberapa lesi di lokasi yang berbeda. Melena, hematemesis, dan anemia kronis merupakan konsekuensi dari angiodisplasia lambung yang tidak diobati. Terkadang sulit untuk mendiagnosisnya, karena kesamaan dengan lesi mukosa lambung lainnya dan distensi lambung yang tidak memadai selama prosedur endoskopi. Baik terapi farmakologis maupun non-farmakologis digunakan untuk mengobati kondisi ini dalam praktik klinis sehari-hari, salah satunya adalah koagulasi argon plasma sebagai modalitas termal selama prosedur endoskopi. Terapi ini menjanjikan terapi angiodisplasia yang efektif untuk menghentikan perdarahan saluran cerna bagian atas dan komplikasi lanjut.

Angiodisplasia lambung yang menyebabkan perdarahan gastrointestinal berulang, ditemukan pada seorang pria berusia 73 tahun. Dia telah dirawat di rumah sakit selama beberapa kali dalam dua tahun terakhir di berbagai

rumah sakit di negara asalnya maupun di luar negeri, karena hematemesis dan /atau melena. Sebelumnya, pemeriksaan gastroscopic berulang oleh endoscopists berpengalaman menunjukkan adanya gastritis erosif. Setelah menerima transfusi darah, gastroskopi dilakukan dan menunjukkan adanya beberapa lesi mukosa kecil merah cerah dan tipis dalam ukuran yang berbeda pada perut. Lesi berhasil diobati dengan koagulasi plasma argon. Selama masa tindak lanjut lebih dari 18 bulan tidak ada perdarahan lanjut berulang yang teramati.

Kata kunci: *angiodisplasia lambung, perdarahan berulang, koagulasi plasma argon*

INTRODUCTION

Gastric angiodysplasia is a typical discrete, flat, bright-red lesion in gastric mucous account for 2 to 10 mm in size.[1] Pathologically, angiodysplasia seen as accumulation of ectatic, thin-walle veins, venules, and capillaries in endothelium of gastrointestinal mucous and submucous.[2] Up to 60% of patients having multiple lesion which can be located in different locations. Some of predisposing factors are age more than 60 years, aortic stenosis, chronic renal failure, and von Willebrand disease.[2] It can be associated with overt or occult gastrointestinal hemorrhage, either acute or chronic for both upper (4%) and lower (3%) tract.[3] As a consequence of blood loss, angodysplasia in upper gastrointestinal tract cause melena or hematemesis with chronic anemia.[1] People with liver cirrhosis or uremia have a higher risk to this condition. The diagnosis is sometimes not easy because the lesion can be overlooked or can be misdiagnosed for another mucous lesions especially if the stomach is not adequatly distended during the gastroscopy procedure.

Both pharmacological and non-pharmacological treatment were used to treat angiodysplasia in upper gastrointestinal tract. Octreotide, a somatostatin analogue, administration has shown to be effective to treat gastrointestinal in a long-term daily parenteral administration, especially for those using anticoagulant therapy, but have not been studied widely.[4,5] Another promising treatment that have been used in daily practice are thermal modalities via endoscopic procedure. Various thermal modalities have been used to treat angiodysplasia, such as multipolar electrocoagulation, neodymiun: yttrium aluminium garnet (Nd: YAG), and argon plasma coagulation (APC). APC is believed to have the best efficacy in treating difficult-to-access anyiodysplasia area.[6] Risk factors of recurrent bleeding after APC treatment hospitalization are early history of bleeding, over anticoagulation use, and the presence of multiple lesion.[7] Thus, initial and accurate diagnosis of angiodysplasia in upper gastrointestinal bleeding could reduce the risk of further recurrent bleeding. This case report aimed to emphasize the importance of the accuracy of endoscopic diagnosis for further appropriate treatment.

CASE ILLUSTRATION

A 73 year old man was admitted to Medistra Hospital because of hematemesis and melena that had occured 3 days earlier. He has a history of chronic kidney disease and several hospitalization in the last two years in his home country as well as abroad because of hematemesis and or melena. He has no history of anti platelet, NSAIDs, or alcohol intake. Repeated gastroscopy examination by experienced endoscopists revealed erosive gastritis. On admission he looked moderately sick, his conjunctiva was pale, the blood pressure was 110/70 mmHg, heart rate was 84 beats/minute regular,respiration rate was 20 breaths/minute, and his body temperature was 36,7˚C. The lung and heart sound were within normal limits. The abdomen was soft, the liver and the spleen were not palpable on physical examination. The hemoglobin was 5,3 g/dL, leucocyte countwas 12320, hematocrit was 17%, urea was 118 mg/dL, creatinine was 2,55 mg/dL and the creatinine clearance was 22,91 mL/m. Electrolyte, biochemistry, and urine analysis were within normal

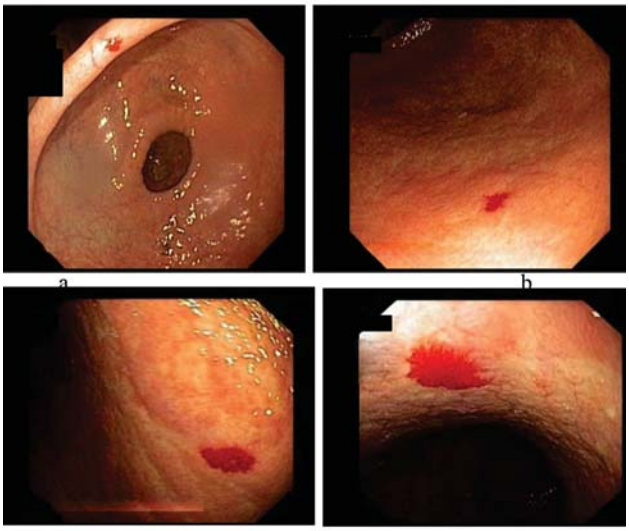

Figure 1. Endoscopic view of the angiodysplasias of the stomach

limits. After receiving blood transfusions, gastroscopy was performed and showed multiple small bright-red mucosal lesions in diffrent size, in the antrum (Figure 1) and the body of the stomach (Figure 1). There was no active bleeding seen during gastroscopic examination. The lesions were successfully treated with argon plasma coagulation (Figure 2) and he could be discharged with hemoglobin of 10,5 g/dL. During a follow-up period of more than 18 months there was no further recurrent bleeding observed.

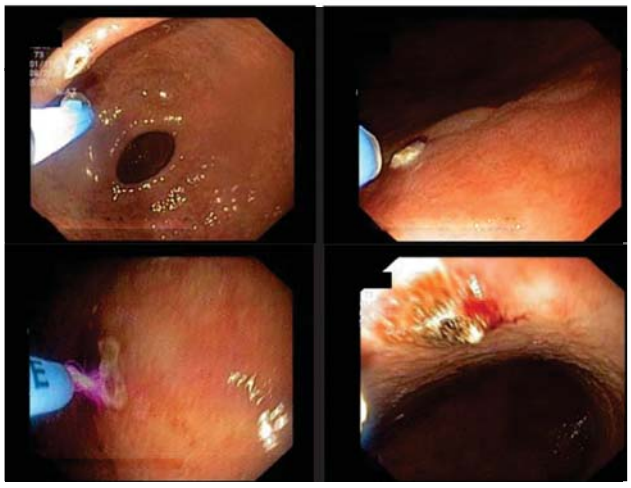

Figure 2. Endoscopic view of the same angiodysplasias during/ after APC treatment

DISCUSSION

Angiodysplasia can occur anywhere along the gastrointestinal tract and is usually multiple. The clinical manifestation can be asymptomatic or may cause overt or occult bleeding, and recurrent bleeding can occur over time. Overt bleeding may be presented as hematemesis, melena or hematochezia depends on the location of the lesion. Upper gastrointestinal angiodysplasia occurs most commonly in the stomach, sometimes in the duodenum and rarely in the esophagus.[8] Gastric angiodysplasia probably accounts for about 1,2-8.0% cases of acute upper gastrointestinaltract bleeding.[9] The etiology of angiodysplasia is unknown. Many hypotheses have been reported in the literature, but degenerative changes of small blood vessels associated with aging is a most widely accepted theory.[10] Angiodysplasia mostly occurs in patients older than 60 years, although younger patients have also been reported. Angiodysplasia reported as the most common cause of recurrent lower gastrointestinal bleeding in the elderly. Angiodysplasia has been suggested to be associated with other diseases such as chronic renal failure, aortic stenosis, and calcinosis, raynaud phenomenon, esophageal dysmotility, sclerodactily, teleangiectasia (CREST) syndrome, in this case report the patient has chronic renal failure with creatinine clearance of 22,9 mL/m.[11,12,13]

The diagnosis of gastric angiodysplasia is usually made by endoscopy, but it is sometimes not easy to detect because the lesion can be overlooked or often initially misdiagnosed as erosive or superficial gastritis even if the endoscopy is performed by experienced hands as reported in this case and previous case reports.[14,15] The typical endoscopic appearance has been described as small, bright red, flat or slightly raised lesions with fernlike margins or stellate configurations of 2-10 mm in diameter. Gastric angiodysplastic lesions have been treated most commonly with endoscopic therapy including monopolar coagulation, neodymium: yttrium-aluminium-garnet (Nd: YAG) laser, APC, heater probe coagulation and multipolar electrocoagulation probe. Monopolar coagulation was the first contact probe modality used to treat gastric angiodysplasia, although the risk of perforation increased because its greater depth of injury and tissue necrosis.[16] Transcatheter embolization is also useful to control severe active angiodysplastic bleeding or active bleeding from the small bowel, but it is seldom needed. Nd:YAG laser was the most commonly used treatment modality for gastrointestinal hemostasis before the APC era.[17]

Argon plasma coagulation is a non-contact electrocoagulation technique where a high-frequency monopolar current is delivered to the target tissue through ionized argon gas. Its first use in endoscopic therapy of gastrointestinal tract was in 1991.[18] Storek et al reported that APC appeared to be a promising procedure which could replace conventional high-frequency coagulation even Nd:Yag laser in most endoscopic treatment indications.[19] In the last two decades APC is increasingly being used in the endoscopic therapy world wide. Argon plasma coagulation has become the most commonly used treatment of angiodysplastic lesions of gastrointestinal tract and appears to be the best, effective, and safe treatment method with a low rate of side effects and complications.[19-22] Yi et al reported a 100 % complete hemostasis in 26 patients with gastric angiodysplasia with APC treatment, without complication.[23] Herrera et al reported that argon plasma coagulation therapy was successful in 86% of upper gastrointestinal bleeding and also reduce the need of blood transfusion for the bleeding. There were also significant rise of hematocrit from the baseline value after the procedure were done.[24] It also reported that upper gastrointestinal bleeding patient which is in anemic condition were

improved after undergo argon plasma coagulation for its gastric angodysplasia. Hemoglobin level were raised from 8,6 g/dL to 12 g/dL, with estimated free of recurrent bleeding for 1- and 2-years in follow up period up to 86% and 80% respectively.[25] Zambeli et al also reported a 100% effective outcome of angiodysplasia causing gastrointestinal bleeding which is treated with argon plasma coagulation, only one complication found (caecum microperforation) among the sample. Argon plasma coagulation were proved to be safe in both isolate and diffuse presentation of gastric angiodysplasia.[26] This shows that argon plasma coagulation promise a good therapeutic effect with less complication and recurrent bleeding in the next few years after the procedure were done. In this case report gastric angiodysplasias were succesfully treated with APC without further recurrent bleeding during a follow-up period of more than 18 months.

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