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CASE REPORT

# A Rare Cause of Massive Lower Gastrointestinal Hemorrhage in a Young Patient: Colonic Angiodysplasia

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## ABSTRACT

Angiodysplasia (AD), also called colonic arteriovenous malformation or colonic angioma, is the most common vascular anomaly of the gastrointestinal tract. It is the second most common cause of lower gastrointestinal (GI) bleeding after diverticulosis in the elderly population (usually over 60 years). In this study, we present a young patient with colonic AD, which caused massive lower GI bleeding. A 46-year-old male patient was referred to our hospital, which was a full-fledged hospital, due to lower GI bleeding. There was no abnormality on physical examination or blood tests, with the exception of hemoglobin, which was only 8 mg/dL. The patient underwent selective visceral angiography due to sub-optimal colonoscopic examination because of bleeding within the lumen. In super-selective ileo-colic arteriogram, bleeding was detected in the ileocecal artery tract and an "arterial embolization + microcoil" procedure was performed. However, the patient underwent emergency operation due to continuing hemorrhage and deterioration of his general medical condition. "Laparoscopic right hemicolectomy + end-to-side ileotransversostomy" was performed in the operation. Histopathological examination of the excised specimen revealed colonic AD. Selective angiography is a very important diagnostic method to identify the location of the lesion, especially in massive GI bleeding in young patients, and it should not be forgotten that AD maybe the etiology. Superselective angiography and embolization are feasible methods for treatment, but it should be kept in mind that surgery may also be necessary in cases of repeated or unstoppable bleeding.

**Keywords:** Angiodysplasia, colon, massive bleeding, lower gastrointestinal tract

## Introduction

Angiodysplasia (AD), also called colonic arteriovenous malformation or colonic angioma, is the most common vascular anomaly of the gastrointestinal tract (GIT).[1,2] The term "angiodysplasia" was first used by Galdabini in 1974. It is the second most common cause of lower gastrointestinal (GI) bleeding in the elderly (usually over 60 years of age) after diverticulosis. It is rare in young people.[2,3] Small bowel ADs constitute 30-40% of GI bleeds of unknown origin. ADs in the large intestine are most commonly located in the cecum and right colon.[3] Bleeding due to AD can lead to massive lower GI bleeding at a rate of 15%. The diagnosis of AD can be made by colonoscopy, capsule endoscopy, angiography, computed tomography and endoscopic biopsy[4-6]. Angiography plays an important role in both the diagnosis and treatment of GI bleeding. Enlarged, distorted and thin-walled vessels are characteristic histopathological findings.[5] Conservative follow-up is the first choice treatment for AD. If bleeding continues, endoscopic methods, such as sclerotherapy, thermal coagulation and band ligation, can be used. Surgical treatment may be used in patients who do not respond to medical and endoscopic treatment.[3-5]

In this study, we present a young 46-year-old patient with colonic AD causing massive lower GI bleeding.

## Case Report

A 46-year-old male patient was referred to our hospital due to lower GI bleeding. The patient stated that he had seen

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blood in his stool intermittently (1-2 times/month) for the previous six months and that he had been treated for hemorrhoids and anemia in the health institutions he had gone to. There was no change in the patient's bowel habit. He had no complaints, such as nausea, vomiting or fever. There was no history of bleeding disorder or malignancy in the patient's history and family history. The patient's physical examination was unremarkable.

There was copious amount of fresh blood mixed with stool on rectal examination. Colonoscopy could not be evaluated optimally because there was bleeding in the lumen, but pathologies including mass, hemorrhoids or fissures were not evident in the anal canal. At the time of admission, the patient's hemoglobin level was 8 mg/dL and upper GI endoscopy was normal. While the patient was being examined, massive lower GI bleeding developed. The patient's hemoglobin level was 4 mg/dL and a total of 15 units of fresh whole blood was given. The interventional radiology team in our hospital was alerted and emergency selective visceral angiography was planned for the patient. In the super-selective ileo-colic arteriogram, "bleeding was detected in the ileocecal artery trace (Figure 1)" and "arterial embolization + microcoil" procedure was performed (Figure 2). Selective vasopressin infusion was used for embolization. However, as the bleeding did not stop and the general condition of the patient deteriorated, the patient was taken to emergency surgery. The patient underwent a laparoscopic right hemicolectomy and end-to-side ileotrasversostomy. On histopathological examination of the excised specimen, enlarged vein clusters and proliferating venous vessels in the mucosa and submucosa, of approximately 2.5 cm, were seen in the ascending colon, and the patient was diagnosed as having "AD in the ascending colon" (Figure 3). The patient did not develop any complications in the postoperative period and was discharged on the eighth day. There was no evidence of bleeding in the patient who was followed up for about eight months after the procedure. The patient underwent screening colonoscopy at six months post-procedure, and the entire colon was evaluated as normal. Informed consent was obtained.

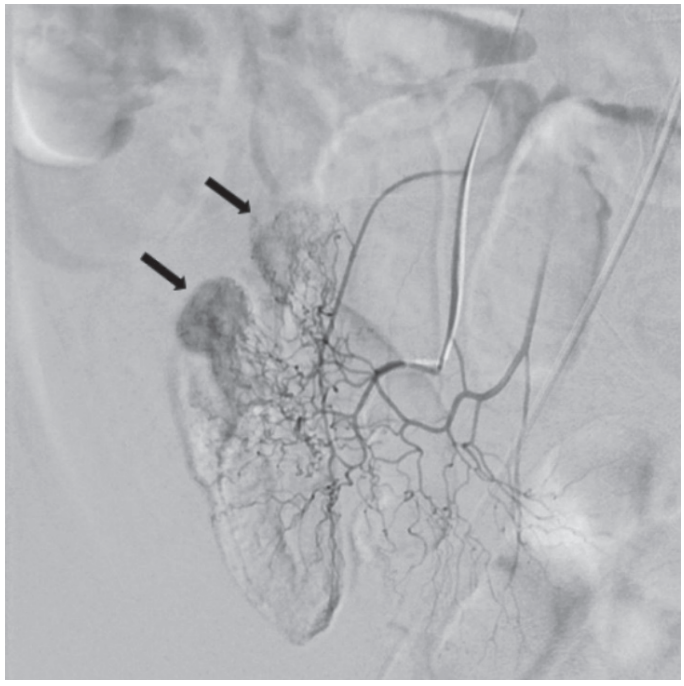

**Figure 1.** Active bleeding from the ileo-colic artery (superselective right ileo-colic arteriogram)

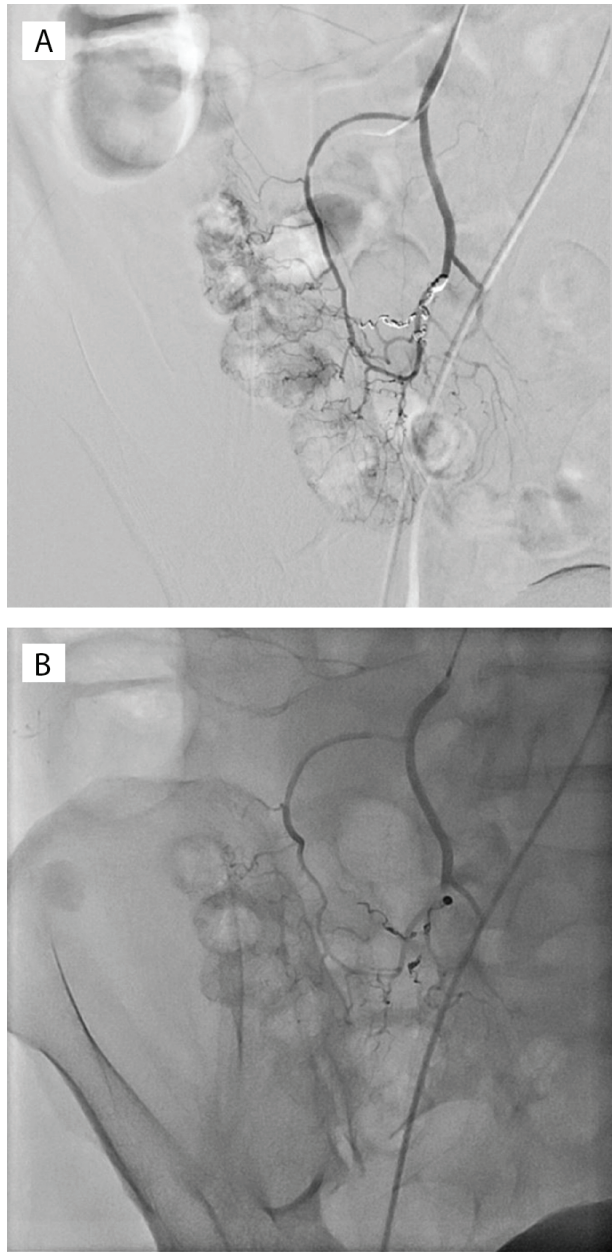


**Figure 2.** Embolization and microcoil occlusion of the bleeding artery in the superselective angiogram

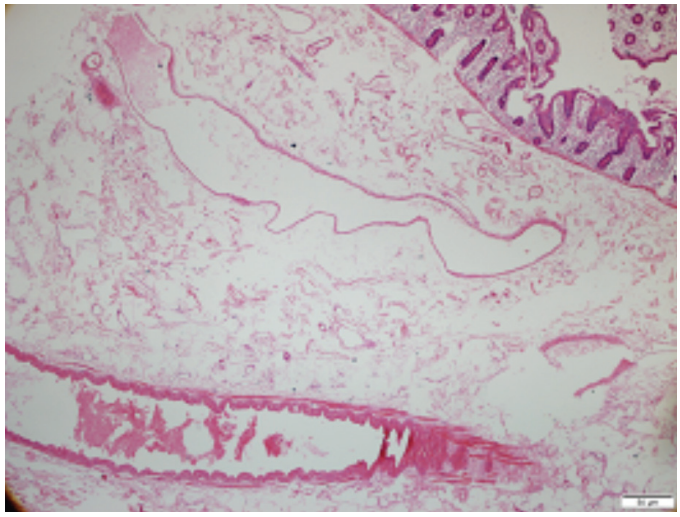

**Figure 3.** Angiodysplastic lesion in the submucosa of colon

## Discussion

AD, which is one of the causes of lower GI bleeding, is a localized vascular anomaly in the cecum and right colon (77%),[1,2] and is especially seen in the elderly. In colonoscopic examination performed in healthy individuals over 50 years of age in the United States, the frequency of AD was found to be 0.8%.[3] In another study, AD was found incidentally at a rate of 2% with colonoscopy performed in people over the age of 65 without bleeding.[7] In the study of Tan et al.[8], AD was reported as the cause of GI bleeding in 19% of the patients. AD is most common between the ages of 60 and 80. It is seen equally in men and women[4]. Our patient was a 46-year-old male patient. Although most of the patients are asymptomatic, iron deficiency anemia may progress in the form of chronic or massive bleeding. The pathophysiology of AD is unknown.[3] Lesions are usually small (2-5 cm in diameter) and may be single or multiple. In our patient, the lesion was 2.5 cm in diameter and single. AD can be ubiquitous in the GIT, but it is most commonly located in the ascending colon and cecum (77%).[9] In our patient, AD was localized in the ascending colon.

The most important complication of AD is bleeding. Bleeding due to AD usually stops spontaneously, but the possibility of repeated bleeding is high.[9] In our patient, intermittent bleeding episodes were observed for about six months, and massive bleeding occurred during the last hospitalization.

The diagnosis of AD is made by colonoscopy. In hemorrhagic AD, bleeding can usually be controlled with sclerotherapy, electrocauterization or argon plasma coagulation during colonoscopy.[10] However, in cases where the bleeding site cannot be detected or the bleeding cannot be stopped during colonoscopy, selective angiography is a method that can be used to identify the bleeding site and to stop the bleeding. When the bleeding rate is more than 0.5 mL/min, the probability of detecting the bleeding area in angiography increases. After the location of the bleeding lesion is determined by angiography, bleeding may be stopped by embolization or microclip applications.[8,9] Tan et al.[8] reported that embolization and microclip combination was used in 9% of patients in their study. Othman et al.[9] reported that bleeding was stopped in all patients with superselective angiography and embolization. However, in our patient, although superselective angiography, embolization and microclip application were performed, the bleeding did not stop and the flow rate decreased. Due to the general condition of the patient, the procedure was not repeated.

The definitive treatment for ADs of the colon is surgical resection. Surgical intervention is accepted as the last option in the treatment of patients.[7-10] Tan et al.[8] reported that bleeding recurred after embolization in 22% of patients in their study and surgery was applied to these patients. Meyer et al.[11] reported that recurrent bleeding was not observed in 63% of the patients who underwent right hemicolectomy for AD during their mean follow-up of 3.6 years, while 37% had recurrent intestinal bleeding of varying degrees. We followed our patient for eight months and we did not detect any more signs of bleeding.

In conclusion, selective angiography is a very important diagnostic method for identifying the location of the lesion, especially in massive GI bleeding in young patients, and it should not be forgotten that AD may be the etiology. Superselective angiography and embolization are applicable methods for treatment, but it should be kept in mind that surgery may be necessary in recurrent or unstoppable bleeding.

### Ethics

**Informed Consent:** It was obtained.

**Peer-review:** Externally peer-reviewed.

### Authorship Contributions

Surgical and Medical Practices: E.K., V.Ç., Ö.B., Concept: E.K., Design: E.K., Data Collection or Processing: E.K., V.Ç., Analysis or Interpretation: E.K., F.C., N.E., Literature Search: E.K., F.C., S.K., Writing: E.K., N.E.

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