Double-Balloon Endoscopy in the Diagnosis and Treatment of Hemorrhage from Retrovalvular Angiodysplasias

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Abstract

Acute rectal blood loss is a common problem that occurs most often in the elderly. The majority of the cases are caused by diverticular bleeding, while angiodysplasias account for about 8% of cases with gross rectal blood loss. Angiodysplasias in the colon are most often located in the caecum. They can cause severe colonic bleeding, sometimes even requiring multiple transfusions. Treatment of bleeding colonic angiodysplasias is usually done with argon plasma coagulation (APC). We describe two cases of elderly patients who presented with rectal blood loss, in whom gastroduodenoscopy and colonoscopy had not revealed a bleeding focus. Both patients were referred to our hospital for retrograde double balloon endoscopy as it was suspected that the bleeding focus was located in the distal small bowel. The flexible double-balloon endoscope allowed a better and easier inspection of the caecum and the ileocaecal valve (ICV). In both cases a large angiodysplasia was found on the back of the ICV. After treatment with APC the bleeding stopped and the haemoglobin levels remained within the normal range.

Keywords


Introduction

Acute severe lower gastrointestinal (GI) tract bleeding is a common problem and most often occurs in the elderly [1]. A review including 1333 cases with acute lower gastrointestinal bleeding (LGIB) identified the following bleeding sources: diverticulosis 33 %, cancers/polyps 19%, colitis/ulcers 18 %, unknown 16%, angiodysplasia 8%, miscellaneous (postpolypectomy, aortocolonic fistula, stercoral ulcer, anastomotic bleeding) 8% and anorectal 4% (hemorrhoids, fissures, and idiopathic rectal ulcers) [2].

The most common site for angiodysplasias in the GI tract is the colon. In the colon these lesions are most often found in the caecum (37%) and ascending colon (17%)[3].

If performed accurately, colonoscopy often leads to diagnosis and therapy in these cases [4, 5], but lesions located behind the ileocaecal valve (ICV) are often difficult to visualise. Nowadays, the flexible tip of the double-balloon endoscope allows us to visualize these lesions. We describe two cases of females with overt lower gastro-intestinal bleeding, who were sent to our hospital for retrograde double-balloon endoscopy (DBE) following gastroduodenoscopy and colonoscopy which did not reveal a possible bleeding focus. On close inspection of the ICV during DBE, both patients were found to have a large angiodysplasia that was located on the back of the ICV. One of them was bleeding actively. Angiodysplasias were treated successfully using argon-plasma coagulation (APC) and in 1 year follow up no further bleeding occurred.

Case reports

Patient 1

A 67-year old woman presented in the hospital of her hometown with complaints of paleness, fatigue and black tarry stools for three weeks. She was known to have atrial fibrillation for which she was using acenocoumarol. The patient had no valvular disease. Gastroduodenoscopy revealed no lesions. During colonoscopy, blood was found through all parts of the colon including the caecum. However, no bleeding source was detected in the colon and therefore it seemed to be located in the small intestine. It was thought to be caused by an angiodysplasia in the ileum along with the intake of acenocoumarol for atrial fibrillation. Laboratory data included a haemoglobin level of 5.0 mmol/l. Blood transfusion was performed twice. Due to the fact that anaemia was worsening, she was transferred to our hospital for DBE. During the DBE, blood and clots were seen in the...
colon, especially in the caecum, while the terminal ileum was lacking any sign of blood. After careful inspection, bending the enteroscope in U-turn, an angiodysplasia was seen on the back of the ICV which was bleeding actively (Fig. 1). The lesion was treated with APC. Subsequently the anaemia improved, achieving a stable and normal haemoglobin level. She did not require any blood transfusion.

**Patient 2**

A 55-year old woman known with episodic blood loss from the lower GI for two years, was referred to our clinic for DBE. She was also known to have coronary artery disease, hypertension, renal insufficiency and atrial fibrillation for which she was using acenocoumarol. Her past history revealed a small angiodysplasia in the duodenum which had been treated with APC. Gastroscopy, colonoscopy, small bowel x-ray series and video capsule endoscopy (VCE) did not reveal any lesion. The patient was referred to our hospital for DBE as she continually required blood transfusions. A bleeding focus in the distal ileum was suspected. During the endoscopy no signs of blood were seen in the colon. On close inspection of the ICV with the double-balloon endoscope in U-turn, a large angiodysplasia was seen on the back of the valve (Fig. 2). Inspection of the ileum for up to 4 meters from the ICV revealed a normal appearing mucosa and no other lesions or blood at all. We decided to treat the large angiodysplasia on the ICV with APC, which was done successfully. After 6 months follow-up, no blood transfusion has been required, as she has maintained a stable haemoglobin level within the normal range.

**Discussion**

Double-balloon endoscopy was performed in both patients using the retrograde approach to evaluate the colon and especially distal ileum. This approach was chosen because in both patients the focus of bleeding was suspected to be located in the ileum and there was gross blood loss without finding a focus during initial colonoscopy. For bowel preparation, the patients were given Clean Prep. As sedoanalgetic medication, both patients received 7.5 mg midazolam and 0.05 mg phentanyl.

In both cases the ileum showed a normal mucosa without any sign of blood. After rinsing the caecum, in patient 1, the caecum kept filling with blood. There seemed to be an active source of bleeding located in the caecum, since the terminal ileum did not contain any blood.

Using the DBE, the focus of bleeding was identified to be located on the back of the ICV in both cases. In order to visualize the back of the ICV, the endoscope was bent in U-turn. The DBE is more flexible than a regular colonoscope. This makes moving the tip of the scope easier.

Blood leaking from the back of the ICV can give the impression that it is leaking out of the terminal ileum. In view of the fact that retrovalvular angiodysplasias occur, it is important to look behind the ICV when one is inspecting the caecum, since these can easily be missed. If this cannot be achieved with a regular colonoscope, the use of the more flexible double-balloon endoscope is advisable.

**References**