

Case Report
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## Idiopathic hemorrhage from appendix

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We present an unusual case of appendiceal hemorrhage which was diagnosed at emergency colonoscopy and successfully treated surgically. A 44-year-old man presented with repeated hematochezia. Emergency colonoscopy revealed continuous bleeding from the orifice of the appendix. The origin of the hemorrhage was the appendix. Emergency appendectomy was performed. Histopathological examination revealed a hematoma in the tip of the appendix and mesoappendix. Appendiceal hemorrhage is extremely rare. For the diagnosis of appendiceal hemorrhage, meticulous colonoscopic examination of the appendiceal orifice, including repeated irrigation and careful observation of the orifice, is essential. Emergency appendectomy is thought to be the treatment of choice.

(Key words : appendiceal hemorrhage, colonoscopy, hematochezia)

### Introduction

Massive gastrointestinal hemorrhage is a medical and surgical emergency in which precise diagnosis as well as appropriate decision making, including that of surgical treatment, is mandatory. Appendiceal hemorrhage is extremely rare and very difficult to diagnose preoperatively. In this case, the site of bleeding was detected by colonoscopy. Endoscopic pictures of appendiceal hemorrhage have rarely been published. We present an unusual case of appendiceal hemorrhage with valuable endoscopic pictures.

### Case report

A 44-year-old man presented with a two-day history of repeated hematochezia. Hemoglobin level on admission to hospital was 11.8 g/dl., a decrease from 15.4 g/dl. one month earlier, as a part of monthly blood sampling for the treatment of hyperlipidemia. Emergency colonoscopy revealed massive fresh blood in the entire colon; however, the origin of the hemorrhage could not be identified until the time when we reached the cecum and found a small amount of fresh blood spilling out from the appendiceal orifice (Figure 1. A,B). At first, we suspected the blood had refluxed into the appendix from the colon. Repeated irrigation of the appendiceal orifice, however, demonstrated continuous outflow of blood, leading to the diagnosis of hemorrhage

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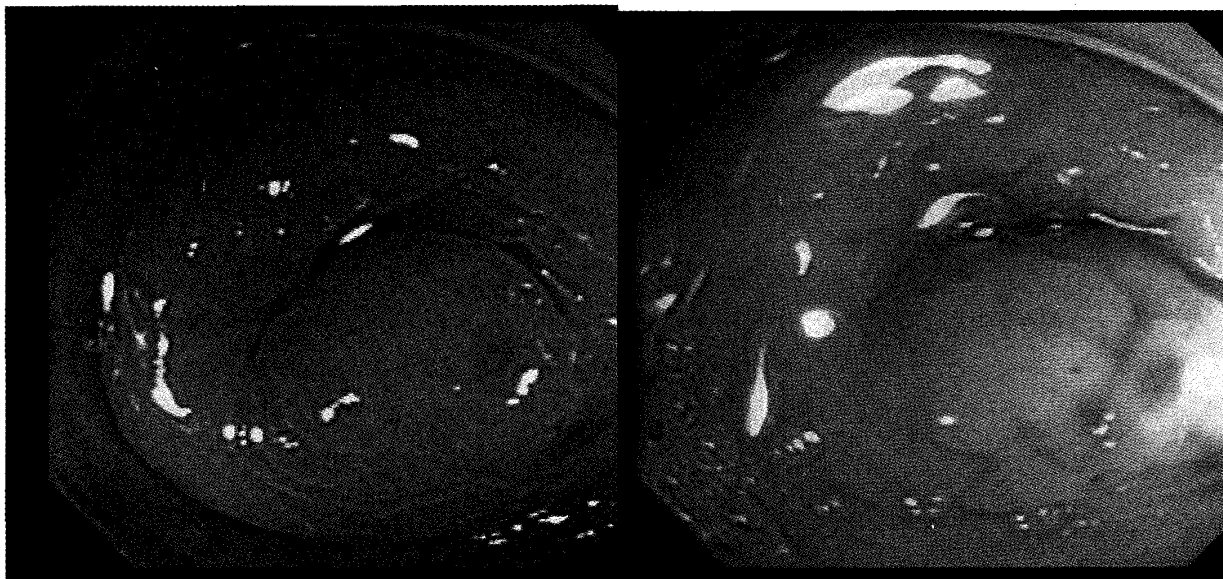


Figure 1 .A, B, Colonoscopic view of the orifice of the appendix. Intermittent active bleeding from the appendiceal lumen is seen.



Figure 2 .Surgical specimen of the resected appendix. Hematoma is present on the tip of the appendix (white arrowhead).

from the appendix per se. Without attempting endoscopic hemostasis, emergency laparotomy was performed. On laparotomy, a hematoma 1cm in diameter was found at the tip of the appendix, and appendectomy was performed. Histopathological examination revealed a hematoma in the tip of the appendix and mesoappendix (Figure 2). However, we could not detect the cause of bleeding despite of making thin sections of the tissue for histological examination (Figure 3. A,B). The postoperative course was uneventful, and the patient was

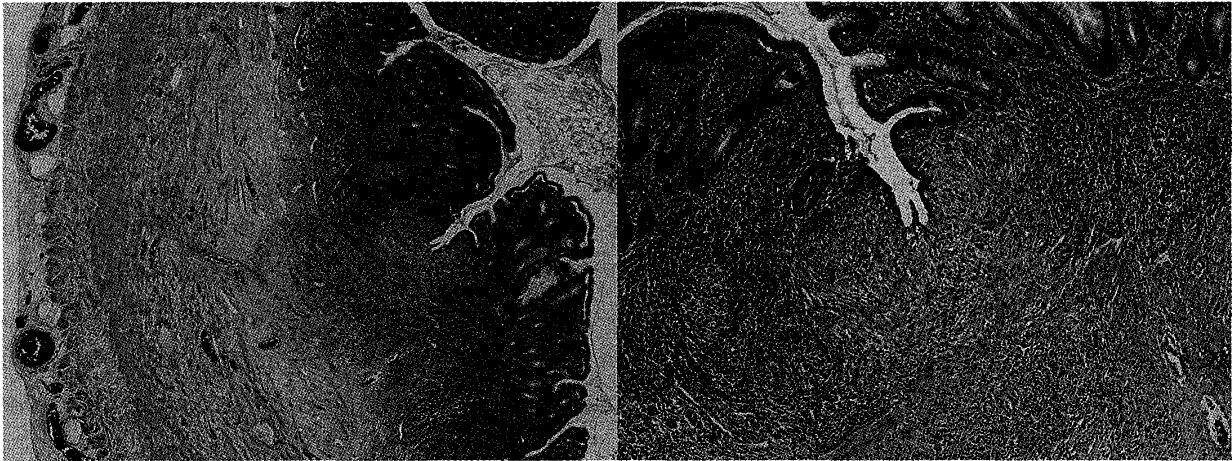


Figure 3 .A, HE,×4 ; B,×10.

Low-power photomicrograph demonstrates no specific finding of appendiceal bleeding.

discharged on the 4th postoperative day.

### Discussion

Massive gastrointestinal bleeding requires rapid and precise decision making. Diverticular disease, ischemic colitis, ulcerative colitis, neoplastic disease and hemorrhoidal disease are associated with colorectal bleeding. Of these diseases, appendiceal hemorrhage is extremely rare and very difficult to diagnose accurately. Vascular ectasia, angiodysplasia [1][2], diverticular disease [3], trauma [4] and isolated Crohn disease [5] are known causes of appendiceal hemorrhage. However, it is extremely difficult to differentiate the cause of bleeding among such conditions. It is also difficult to detect the site of bleeding using diagnostic modalities including colonoscopy, because the appendiceal lumen can not be observed by endoscopy. Bleeding from the proximal small intestine should be ruled out even though only the very distal part of the small intestine can be studied endoscopically. Bleeding from the colon and rectum should also be ruled out even under a poorly prepared and bloody condition. Then backward flow of blood from the colon and small intestine should be ruled out. Therefore, meticulous and patient observation of the appendiceal orifice, repeated irrigation and waiting are essential for the definitive diagnosis of appendiceal bleeding. This case is valuable in the sense that we could make the diagnosis of appendiceal bleeding by colonoscopy. Additionally, the endoscopic pictures of appendiceal bleeding have rarely been published. Some lesions associated with gastrointestinal bleeding such as angiodysplasia and diverticular bleeding can be managed by endoscopic treatment; clipping or ablation. However, it is virtually impossible to apply such endoscopic hemostatic maneuvers to the appendix. Therefore, operation is the only choice of treatment for appendiceal bleeding. In this case, we decided to operate on the patient based only on the findings of colonoscopy without other diagnostic imaging such as computed tomography, ultrasonography or angiography because colonoscopy clearly revealed that the site of bleeding was the appendix. The appropriate surgical procedure for appendiceal bleeding is a controversial issue. In most cases, it can be managed by simple appendectomy. However, oncological surgical principles should be applied to the cases of neoplasms. Ultimately, the operative

findings are thought to be important to determine the appropriate procedure in each case of appendiceal bleeding. In our present case, the appendix vermiformis was apparently normal except for a small hematoma at the tip. Thus, we considered that usual appendectomy was appropriate and sufficient as an operative procedure. The surgical specimen showed a small hematoma in the tip of the appendix. Unfortunately, despite a detailed histological examination, the cause of the hematoma at the tip of the appendix remained uncertain. Although non-specific fibrosis was found, there were no specific findings such as angiodysplasia, ruptured blood vessels, diverticulum, or neoplasms. In conclusion, for the diagnosis of the appendiceal hemorrhage, meticulous observation of the appendiceal orifice on colonoscopy is essential. Once the definitive diagnosis of appendiceal hemorrhage is made, we believe that prompt surgical exploration is the only option.

### References

- 1) Kyokane T, Akita Y, Katayama M et al. : Angiodysplasia of the appendix. *Am J Gastroenterol* 96 : 242-244, 2001
- 2) Morales TG, Yalam J, Dinning JP et al. : Acute lower gastrointestinal bleeding from the appendix. *Gastrointest Endosc* 46 : 458-460, 1997
- 3) Norman DA, Morrison EB, Meyers WM et al. : Massive gastrointestinal hemorrhage from a diverticulum of the appendix. *Dig. Dis. Sci* 25 : 145-147, 1980
- 4) Portereiko JV, Frankel HL, Rabinovici R : Active bleeding from a lacerated appendicular artery in a blunt trauma patient. *J Trauma* 56 : 1171, 2004
- 5) Brown WK, Peters RW. : Crohn's disease of the appendix presenting as lower intestinal hemorrhage and cecal mass. *Am J Gastroenterol* 65 : 349-352, 1976

## 虫垂出血の一手術例

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### 要 約

症例は44歳男性。2日間断続的に続く下血を主訴に来院した。緊急下部消化管内視鏡検査を施行したところ、大腸全体に血液がみられたが、出血部位の同定が困難であった。しかし、繰り返し洗浄し観察したところ、虫垂口から間欠的に血液が流出する所見がみられ、虫垂内腔からの出血であると判断した。緊急虫垂切除術を施行した。摘出標本では虫垂先端に血腫が存在していたが、病理組織学的には血腫の原因となる

明らかな腫瘍性病変、血管異常などは認めなかった。下部消化管出血の原因部位として虫垂が占める割合は小さいが、可能性として考慮する必要がある。また、内視鏡的に出血部位を同定するのは困難ではあるが、正確な診断をするためには、根気よく洗浄・観察を続けることが必要であり、虫垂出血と診断した場合にはすみやかに外科的治療に移行する必要があると考える。

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