

Massive retroperitoneal hematoma following colonoscopy

A case report

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Abstract

Rationale: Colonoscopy has been used for screening and treatment of diseases worldwide. Endoscopic mucosal resection (EMR) has many major complications such as colon perforation and bleeding. However, cases of minor complications have also been reported. Here, we present a case of massive retroperitoneal hematoma, as a minor complication, after colonoscopy.

Patient concerns: A 57-year-old man was admitted to our hospital because of abdominal pain. He had no past medical history relating to his present condition, and he received EMR at another hospital 11 days before his admission. Dynamic computed tomography (CT) was performed, which showed a massive retroperitoneal hematoma near the third portion of the duodenum.

Diagnosis: The patient had a superior mesenteric vein injury after the colonoscopy.

Outcomes: The patient did not complain of nausea or vomiting and was discharged after 43 days.

Lessons: Although massive retroperitoneal hematoma is a minor complication after colonoscopy, it can be life threatening; thus, we need to know more about this complication. Dynamic CT may be useful in detecting whether the bleeding occurs from the artery or not.

Abbreviations: CT = computed tomography, EMR = endoscopic mucosal resection, SMA = superior mesenteric artery, SMV = superior mesenteric vein.

Keywords: complication of colonoscopy, dynamic computed tomography, endoscopic mucosal resection, mesentery tear, retroperitoneal hematoma

1. Introduction

Colonoscopy has been used for screening and treatment of diseases worldwide. In a 2008 systematic review of 12 studies totaling 57,742 colonoscopies performed for average risk screening, the pooled overall serious adverse event rate was 2.8 per 1000 procedures.^[1] Endoscopic mucosal resection (EMR) has many major complications, such as colon perforation and bleeding. Besides these complications, rare complications, such as splenic, urinary bladder injuries as well as mesenteric artery tear, may also occur.^[2–7] We report a case of a rare but potentially life-threatening complication of massive retroperitoneal hematoma after colonoscopy.

2. Case report

A 57-year-old man was admitted to our hospital because of upper abdominal pain. His past medical history included the presence of

hypertension, hyperlipidemia, and hyperuricemia. He received no anticoagulant and antiplatelet drugs. He had no history of surgery or abdominal trauma. He had undergone total colonoscopy and EMR for an ascending colon polyp in another hospital 11 days prior to his admission to our institution. The procedure was done without any difficulties. After EMR, the patient developed abdominal pain. Examination revealed a blood pressure of 126/70 mmHg, heart rate of 66/min, and absence of rebound tenderness. The complete blood count data revealed an increased white blood cell count of 11,440/ μ L, red blood cell count of 453 \times 10⁵/mL, and hemoglobin level of 13.8 g/dL. Dynamic computed tomography (CT) revealed a 110 mm \times 32 mm hematoma on the dorsal side of the 3rd portion of the duodenum (Fig. 1A), but without active bleeding and evidence of colon perforation. A follow-up CT showed that there was no increase in the size of hematoma. The patient was stable without any intervention and his condition gradually improved. The patient was discharged 18 days after EMR (7 days after the first admission) (Fig. 1B). However, he was readmitted to our hospital 23 days after EMR (5 days after his first discharge), because of eating difficulty. An immediate CT scan revealed a hematoma of increasing size (73 mm \times 62 mm) that compressed the 3rd portion of the duodenum and distended the stomach (Fig. 1C). A nasogastric tube was placed after the admission. We carefully followed up the patient until the size of the hematoma decreased (44 \times 34) significantly (Fig. 1D). Upper gastrointestinal endoscopy revealed that the esophagus and stomach were intact, but the mucosa was edematous and red at the 2nd and 3rd portions of the duodenum (Fig. 2). The length of the edematous mucosa was only 2 to 3 cm, and the scope passed easily. The gastrointestinal series was performed, and the contrast medium passed the duodenum. Subsequently, the patient started eating. He did not complain of

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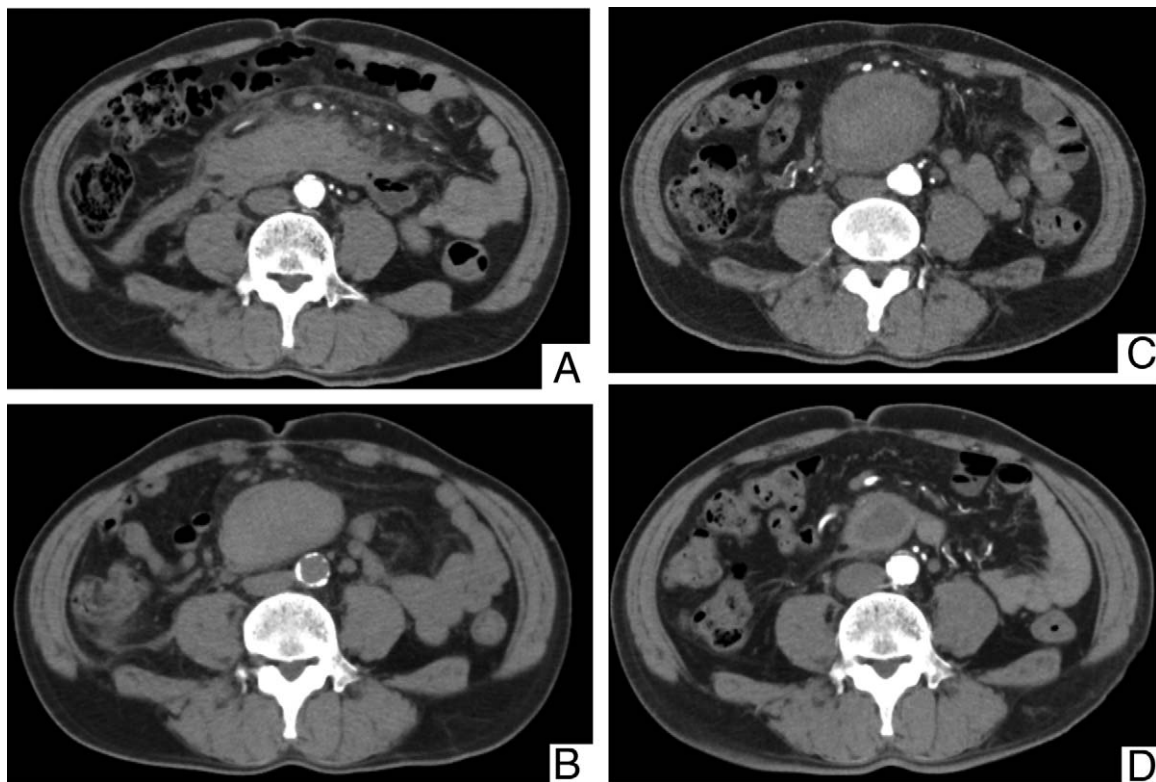


Figure 1. Dynamic (A, C, D) and plain (B) computed tomography of the abdomen. The size of the hematoma is 110 mm × 32 mm, 73 mm × 44 mm, 73 mm × 61 mm, and 45 mm × 34 mm at Days (A) 11, (B) 18, (C) 25, and (D) 65 after the endoscopic mucosal resection.

nausea or vomiting and was discharged after 43 days (Fig. 1D). At nine months after the first admission, the patient was still stable and the hematoma was decreased.

The Ethics Committee of Aizu Chuo Hospital gave approval for the publication of this case report, and informed consent was provided by the patient.

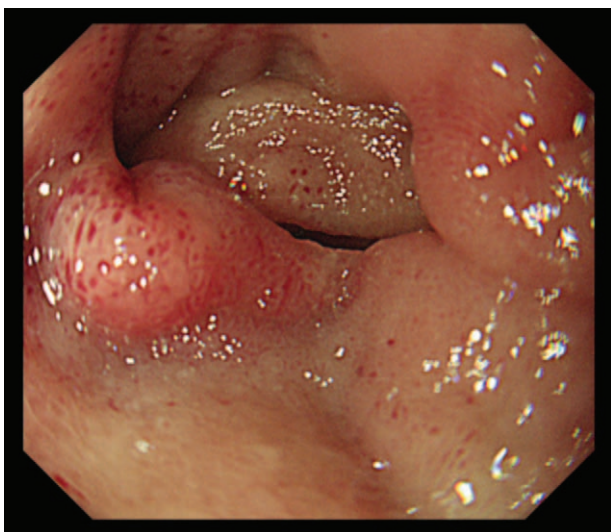


Figure 2. Upper gastroscopy shows red and edematous mucosa at the 2nd and 3rd portions of the duodenum.

3. Discussion

Colonoscopy is a common procedure performed worldwide. Despite being safe, colonoscopy is associated with a risk of major complications, such as colonic perforation and hemorrhage. The rate of colonic perforation is <0.3%, whereas that of hemorrhage is 0.1% to 0.6%, and it is associated with polypectomy. In a large study of colonoscopies, the rate of hemorrhage after a polypectomy was found to be 4 times higher than that after a screening colonoscopy.^[1] Other complications, such as splenic rupture, acute appendicitis, diverticulitis, bladder injury, abdominal hematoma, and mesenteric artery tear, have also been reported.^[2–7] Of these, splenic injury is the most well-known complication, as reported in many articles.^[2] Its incidence has been reported to be around 0.00005% to 0.017%, with a mortality rate of 5%. According to Ha and Minchins^[2] literature review, more than half of the patients had undergone laparotomy or splenectomy. The risk factors for splenic injury are splenomegaly, adhesion, anticoagulation, and an inexperienced operator. Moreover, in terms of techniques, hooking splenic flexure to straighten the left colon, external pressure on the left hypochondrium, slide by advancement, and alpha maneuver are the risk factors for splenic injury.^[2]

The mesenteric artery tear is a rare complication, which has been reported in only a few cases. Thus far, only three patients have been identified to have bleeding in the artery.^[4–6] The anatomical location of the torn vessels was the mesocolon of the descending, superior rectal, and transverse mesocolon arteries.^[4–6] All patients needed surgery. The mesenteric artery tear is a surgical emergency, and bleeding symptoms are immediately manifested by the patients. One patient had active bleeding of the psoas muscle.^[7] However, in patients with mesenteric vein tear,



Figure 3. Three-dimensional computed tomography of the superior mesenteric artery shows the absence of aneurysm, active bleeding, and occlusion.

the symptoms appear gradually, and this tear forms a large hematoma. Furthermore, only 2 reported cases were suspected to have mesenteric vein tear.^[8,9] One case was of a hemoperitoneum, wherein the patient had undergone an appendectomy, and the hemoperitoneum was associated with intra-abdominal adhesion. The patient was hospitalized for 6 days only. Another case was of a peri-colonic hematoma.^[9] In this patient, the hematoma formed near the mid-descending colon. The patient was hospitalized only for 3 days without any intervention. Mesenteric vein tear was suspected in both patients. In the present case, the patient complained of abdominal pain 11 days after EMR, and we did not operate. The present case was of a massive hematoma in the retroperitoneal cavity. The hematoma formed gradually, and the superior mesenteric artery (SMA) and its branches were intact; hence, we suspected that it was a mesenteric vein tear. Dynamic CT showed the absence of active bleeding; hence, we did not perform any surgery or angiography. The

symptoms occurred after colonoscopy, and the patient did not have any trauma before the procedure; therefore, we had to differentiate SMA dissection, segmental arterial mediolysis, and splenic rupture. Three-dimensional CT showed an intact SMA, and dynamic CT also revealed the absence of dissection (Fig. 3). Regarding the mechanism of the mesenteric tear during colonoscopy, it is assumed that during the colonoscopy, the SMV and its branches were pulled and had torn, resulting in retroperitoneal hematoma. Dynamic CT revealed that the bleeding was not from the artery; hence, surgery was not necessary.

4. Conclusion

In conclusion, we observed a rare complication after a colonoscopy. Dynamic CT was useful in identifying the changing conditions of the hematoma, which is important in avoiding unnecessary surgeries.

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Author contributions

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