

## Mass-forming ischemic colitis that mimics colon cancer

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*To the Editor:* Rarely, ischemic colitis can also mimic a carcinoma during colonoscopy and on computed tomography (CT) imaging. During colonoscopy, an ulceration, a submucosal mass, and a narrowed colon segment with an ulcerated mucosa have all been described as mimicking this kind of cancer. Few reports have documented this type of mass-forming ischemic colitis variant.<sup>[1-4]</sup> Here, we described two patients with ischemic colitis who presented with lesions mimicking colon cancer.

**Case 1:** A 78-year-old male was referred to our out-patient clinic from a local clinic, with the suspicion of having a hepatic flexure cancer. His primary complaint was abdominal pain. His medical history included hypertension, diabetes mellitus, and chronic kidney disease. He was a heavy smoker and an alcoholic. A non-contrast CT (due to chronic kidney disease) and colonoscopy were both performed at the local clinic prior to admission. The CT imaging showed segmental wall thickening of the proximal ascending colon, with pericolonic infiltration. Colonoscopy showed an ulcero-infiltrative mass-like lesion, and a biopsy was performed [Figure 1A and 1B]. The histopathology results showed chronic inflammation with reactive changes and a necrotic inflammatory exudate. Although these pathology results did not definitively suggest malignancy, cancer was strongly suspected. Carcinoembryonic antigen level was normal. We performed laparoscopic surgery approximately 1 month after the patient's first colonoscopy. The camera images revealed wall thickening, and we proceeded with a laparoscopic right hemicolectomy. However, the gross surgical specimen revealed no lesion. The final pathology report showed segmental, submucosal fibrosis, normally suggestive of a healed ulceration.

**Case 2:** A 66-year-old female was referred to our out-patient clinic with a chief complaint of hematochezia. She had a medical history of diabetes mellitus. Colonoscopy revealed a 4-cm, ulcero-infiltrative mass in the splenic flexure. A biopsy showed necrotic inflammatory exudate without epithelial cells. A CT scan revealed diffuse wall

thickening with serosal infiltration [Figure 1C and 1D]. Carcinoembryonic antigen level was normal. As a malignancy was suspected, surgery was performed 3 weeks after the colonoscopy. However, no tumor was found during surgery, and ischemic colitis was diagnosed with subsequent intra-operative colonoscopy. The surgery was completed without any resection.

The most important clinical aspect of these novel presentations of ischemic colitis is the ability to rule out malignancy. This differential diagnosis can be challenging, given that a mass-like appearance similar to that of a carcinoma is related to substantial submucosal and mural edema. Only a few cases have been reported in which ischemic colitis was initially suspected of being a malignancy. In all of these cases, biopsy results showed no evidence of malignancy, but the endoscopy and CT findings strongly suggested a carcinoma. Most of these reported patients recovered after conservative therapy, and repeat colonoscopies after symptomatic improvement confirmed complete resolution.

In the present two cases, colonoscopy and CT imaging showed ulcero-infiltrative masses, indicating malignancy. However, the biopsies revealed only inflammation with reactive changes. As biopsies can sometimes be inadequate, it is challenging for surgeons to decide whether to perform surgery immediately or to re-evaluate after a few weeks. As we have learned from these rare variants of ischemic colitis, unless there are other clinical reasons for an emergency resection, it may be useful to manage these patients conservatively and follow-up with a repeat colonoscopy or later imaging. Careful history taking during this rapidly changing clinical event is also useful for a correct diagnosis.

Khor *et al*<sup>[5]</sup> also reported the clinical and pathological features and the outcomes of patients suffering from mass-mimicking variants of ischemic colitis. Among the 19 patients described, all were suspected of having malignancies, and polypoid or fungating masses obstructed the lumen in 16 of 19 cases. The mean mass size was 4.67 cm.

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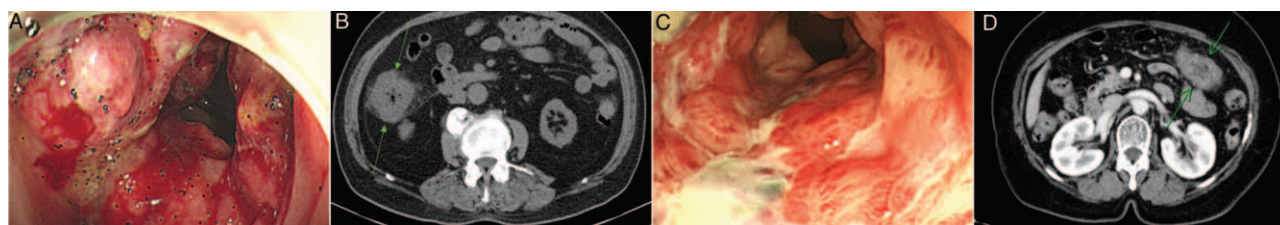
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**Figure 1:** (A) The colonoscopy showed an ulcero-infiltrative mass-like lesion in the ascending colon (case 1). (B) Computed tomography imaging showed segmental wall-thickening of the proximal ascending colon with pericolic infiltration (case 1). (C) Colonoscopy revealed a 4-cm ulcero-infiltrative mass in the splenic flexure (case 2). (D) CT imaging revealed diffuse wall-thickening with serosal infiltration (case 2).

A CT scan showed segmental thickening, suspicious for malignancy, in six of eight patients, with colectomy performed in four of the cases due to suspicion of malignancy. A follow-up colonoscopy was performed in seven patients between 1 and 32 weeks after initial presentation, and in each case, it showed resolution of the masses.

Regardless of the underlying etiology, the diagnosis of ischemic colitis is very similar. In most cases, it can be easily diagnosed on mucosal biopsies with the clinical, radiologic, and colonoscopic findings.<sup>[5]</sup> The location of injury mainly involves the “watershed” zones of the splenic flexure, descending colon, and the rectosigmoid junction. However, in previous reports, a large proportion of cases had lesions in the cecum and ascending colon similar to our case 1. This suggests that mass-forming ischemic colitis may have a distinct anatomical distribution when compared to the usual forms of ischemic colitis. This distinct localization should also be considered in mass-forming ischemic colitis along with other known risk factors.

If surgery is recommended due to a strong suspicion of malignancy based on findings from colonoscopy and CT imaging, and without any clear pathological findings, then extra care is necessary. If the patient does not develop severe symptoms with persistent bleeding or perforation required for surgical intervention, the symptom change and colonoscopy should be carefully reevaluated before surgical intervention. Moreover, as in our case 2, if a tumor is not seen during surgery, an intra-operative colonoscopy can help decide whether resection is necessary.

In conclusion, we report two cases of mass-forming ischemic colitis that mimicked colon cancer. The distinction between this type of colitis and malignancy is

challenging, but careful history-taking and biopsy findings from a well-sampled lesion are both essential for a correct diagnosis. Awareness of this resemblance and use of a conservative approach with repeat and intra-operative colonoscopy will help prevent unnecessary surgery.

### Ethical approval

These case reports were approved by the institutional review board of our hospital (No. 4-2019-0602), and the requirement for an informed consent was waived by the board.

### Conflicts of interest

None.

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