

TREATMENT OF AN AGED PATIENT WITH GANGRENE-TYPE ISCHEMIC COLITIS

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Summary

Although there have been increasing reports on ischemic colitis, the gangrene type is uncommon. And the prognosis of this type is extremely poor. Recently, we successfully treated by surgery an old male patient with ischemic colitis which evolved from the stricture to the gangrene type during hospitalisation.

Patient was a 78 year-old male. Chief complaints were left lower abdominal pain, nausea and vomiting. After that he had a small amount of mucous bloody stool. So he was examined at the department of internal medicine of our hospital. The diagnosis was ischemic colitis of the stricture type, so he was immediately admitted. However, after 20 days from onset, pyrexia of over 38°C persisted, accompanied by intensified abdominalgia. Simple X-ray of the abdomen visualized a sigmoid colon markedly dilated by gas. So having concluded that the stricture type had advanced to the gangrene type, we performed an emergency operation. The descending and sigmoid colon was resected, followed by side-to-end anastomosis of the normal portion of the descending colon and rectum. No complication occurred, and patient was discharged 30 days post-operatively. He was the oldest cured patient in Japan.

Key words: Ischemic colitis, Gangrene-type ischemic colitis, Treatment of ischemic colitis

Introduction

Ischemic colitis was defined by Boley et al.¹⁾ on the basis of its clinical and roentgenographic features. Marston et al.²⁾ placed all ischemic lesions of the large intestine under the generic name ischemic colitis and classified them into three types: (1) transient, (2) stricture and (3) gangrene. In Japan, although there have been increasing reports on this disease since Yamashiro et al.⁴⁾ reported in 1972, the gangrene type is uncommon³⁾. Recently, we successfully treated, by surgery, a 78 year-old male patient with ischemic colitis which had evolved from the stricture to the

gangrene type during hospitalization. Our investigation indicates that he is the oldest such patient in Japan to have been cured.

Patient Profile

Patient: A 78 year-old male.

Chief complaints: Left lower abdominal pain, nausea and vomiting.

Family history: Non-contributory.

Past history: He had been under treatment with antihypertensive drugs for hypertension since the age of 70, but had received no other drugs, including antibiotics.

Present illness: Pain in the left lower quadrant, nausea and vomiting suddenly developed after supper on May 21, 1985. He was examined by a local doctor. Enema revealed a small amount of

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Table 1 Laboratory findings on admission

RBC	474万/mm ³	CRTN	1.4 mg/dl
Hb	16.4 g/dl	S-Amyl	310 IU/l
Ht	46 %	Na	133 mEq/l
WBC	14800 /mm ³	K	4.4 mEq/l
Platlet	12.5×10 ⁴ /mm ³	Cl	99 mEq/l
TP	6.8 g/dl	Occult blood	(##)
A/G	1.0	Salmonella	(-)
GOT	36 IU/l	Shigella	(-)
GPT	25 IU/l	Bleeding time	4.30
LDH	338 IU/l	Clotting time	9.00
ALP	8.2 K.A.U	ESR	62 mm/h, 95 mm/2h
γ-GTP	49 IU/l	CRP	6+
BUN	24.4 mg/dl		

mucous bloody stool. Since the symptoms did not improve, he was examined at the department of internal medicine of our hospital the following day. On the 24th, he complained of severe abdominal pain during Barium emema and was immediately admitted.

Status on admission: Height was 155 cm; body weight, 50 kg; blood pressure, 130–70 Hg; pulse was normal (84/min); tension was satisfactory and body temperature was 37.8°C. No anemia or jaundice was observed, and physical examination of the chest revealed no abnormalities. No superficial lymph nodes were palpable. The abdomen was swollen, with a spontaneous pain in the left lower quadrant without muscular defence.

Laboratory findings on admission: Leukocytosis, increased erythrocyte sedimentation rate and elevated CRP level were found, and the stool specimen was (##) for occult blood. No pathomonomic organisms were detected in the feces (Table 1). Chest X-ray and ECG revealed no abnormal findings.

Barium enema: On the fourth day after onset, the area of the sigmoid colon demonstrated a thumb-sized indentation and narrowing of the intestinal tract (Photo 1). On the tenth day after onset, the sigmoid colon showed multiple shallow ulcers, with no stenosis (Photo 2).

Colonoscope: On the ninth day after onset, the lower sigmoid colon showed multiple shallow zonal ulcers, accompanied by hyperemia of the surround-



Photo 1 The area of the sigmoid colon demonstrated a thumb-sized indentation and narrowing of the intestine tract.

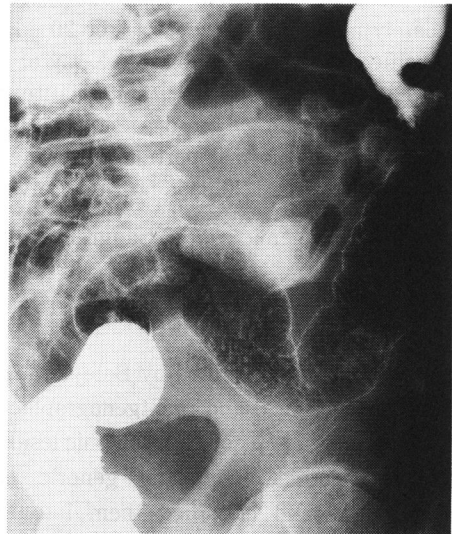


Photo 2 The sigmoid colon showed multiple shallow ulcers.

ing mucosa. Submucous hemorrhage was observed over the entire area of the sigmoid colon. On day 21, multiple ulcers were circumferentially present from the sigmoid colon 20 cm from the anal margin to the curvature of the spleen in the oral direction, and the surface being sporadically covered with necrotic substances (Photo 3). Biopsy showed no

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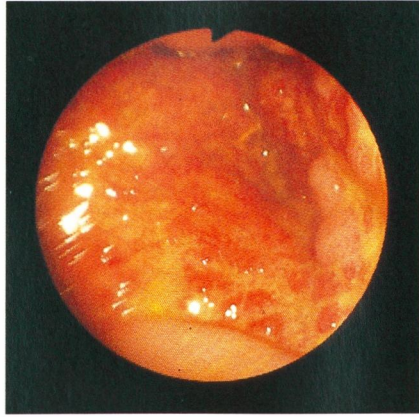


Photo 3 Endoscope of the large intestine: The surface was covered with necrotic substances.

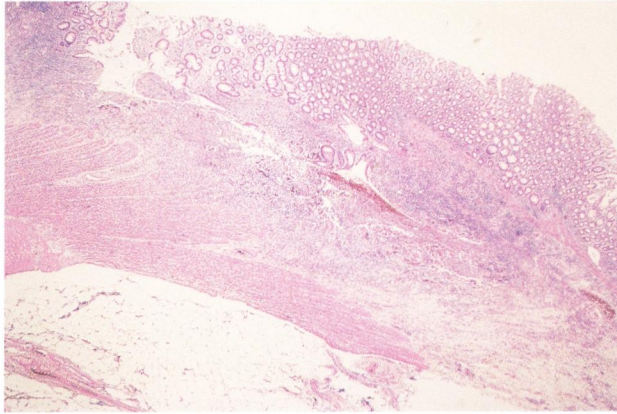


Photo 6 Occasional destruction and interruption of the intestinal wall was found. (H-E, $\times 40$)

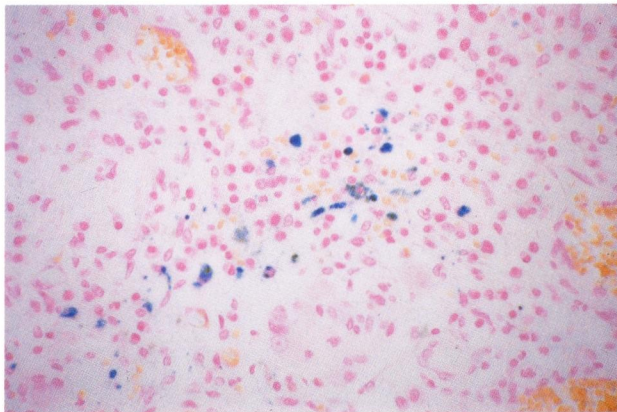


Photo 7 Hemosiderin granules in the tissue to be blue. (Berlin blue, $\times 400$)



Photo 4 June 22, simple X-ray of the abdomen: Sigmoid colon was markedly dilated by gas.

findings suggestive of malignancy other than marked infiltration of inflammatory cells.

These findings led to diagnosis of ischemic colitis of the stricture type. Medical treatment consisting of fasting, fluid replacement, and antibiotic administration was initiated.

However, pyrexia of over 38°C persisted, accompanied by intensified abdominalgia and watery diarrhea which occurred from several to more than 10 times a day, starting on June 14. On June 22, simple X-ray of the abdomen visualized a sigmoid colon markedly dilated by gas (Photo 4). Having concluded that the stricture type had advanced to the gangrene type, we performed an emergency operation on day 34 after onset.

Surgical findings: The intestinal tract was markedly dilated and congested from the descending colon to the sigmoid colon, and the intestinal wall of this region was very thin. There was no abscess formation or perforation in the area surrounding the sigmoid colon, but markedly inflammatory adhesion to the surrounding abdominal wall and omentum was observed. The descending and sigmoid colon was resected, followed by side-to-end anastomosis of the normal portion of the descending colon and rectum.

Findings of the resected specimen: About

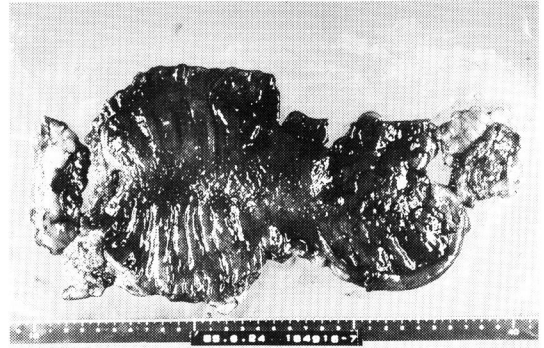


Photo 5 The resected specimen. Perforation of the specimen occurred during the operation.

30 cm of the intestinal tract was markedly dilated, with the wall thinned. The mucous surface showed extensive hyperemia and a large ulcer running vertically, with no pseudomembrane formed (Photo 5). Perforation of the specimen occurred during the operation.

Histopathological findings: HE staining revealed multiple ulcers in fissural form, accompanied by marked cell infiltration in the intestinal wall and occasional destruction and interruption of the wall (Photo 6). Berlin blue staining disclosed the hemosiderin granules in the tissue to be blue (Photo 7).

Thus, the histopathological diagnosis of this patient was gangrene-type ischemic colitis.

Postoperative course: No complications occurred, and the patient was discharged 30 days postoperatively. He is currently well.

Discussion

In 1963, Boley et al.¹⁾ reported the presence of reversible ischemic lesions of the colon, and in addition, ischemic intestinal diseases such as mesenteric arterial occlusion. Subsequently, Marston et al.²⁾ proposed the generic term ischemic colitis for ischemic lesions of the large intestine including these reversible changes, and classified them into three types: (1) transient, (2) stricture and (3) gangrene. However the gangrene type is different from the "reversible" type of Boley et al.; the classification has thus been controversial, with no unanimity of opinion⁶⁾. Later, Marston et al.

included the transient and stricture types in the category of ischemic colitis, but excluded the gangrene type. However, if the stricture type evolves to the gangrene type, as in our case, it seems inappropriate to exclude the gangrene type from the category of ischemic colitis.

Our investigations (up to June 1985) revealed 22 reported cases of gangrene-type ischemic colitis in Japan, with our case being the 23rd.

Ischemic colitis is prevalent among individuals over the age of 60 and is believed to be frequently associated with diabetes mellitus and cardiovascular disease such as hypertension and sequelae to cerebral apoplexy, in addition to arterial sclerosis⁴⁾. Our patient also had associated hypertension.

The disease starts with three major signs, i.e.; abdominalgia, melena and diarrhea⁹⁾, and in gangrene-type cases, these symptoms advance rapidly, the period between onset and perforation ranging from less than 24 hours¹⁰⁾ to several hours to several days¹¹⁾. Although our patient had been under medical treatment since the onset, pyrexia and abdominal symptoms intensified around the third week, at which time simple X-ray of the abdominal region revealed a colon markedly dilated with gas. It is believed that progress of the lesion infrequently results in necrosis⁸⁾. Our case is unusual, because the laboratory, surgical and histopathological findings indicated that the stricture type advanced to the gangrene type.

The site of predilection in ischemic colitis in Western countries is the curvature of the spleen²⁾ and the sigmoid colon in Japan⁹⁾¹²⁾. The sigmoid colon was most frequently involved in the Japanese series of gangrene-type cases, including our case.

Barium enema and endoscopy are used for diagnostic purposes; the former is said to be useful for serial observations of stricture-type lesions, and the latter, for those of transient-type lesions¹³⁾. Gangrene-type cases may show dilation of the sigmoid colon on simple abdominal roentgenogram, as did our case⁴⁾. Since such patients are likely to have penetrating necrosis of the intestinal tract, Barium enema is prohibited because of possible perforation, and endoscopy must be carefully

carried out⁴⁾.

Etiologically, ischemic colitis is both clinically and experimentally attributed to occlusion or narrowing of arterioles of the intestinal wall, rather than a trunk artery¹⁴⁾, and none of the gangrene-type surgical cases in Japan showed involvement of a trunk artery⁴⁾. No arterial trunk was occluded in our case either. It is speculated that in the gangrene type, intestinal ischemia is so advanced that irreversible penetrating necrosis of the intestinal tract occurs.

Therapeutically, transient- and stricture-type patients generally recover with conservative treatment alone, but emergency operation is indicated for the gangrene type, as in our case, with early surgery the sole means of saving the patient's life⁵⁾. However, the prognosis of this disease is extremely poor, because of the rapid progress of lesions and the age of most patients⁴⁾. Only 9 of the 22 reported gangrene-type patients in Japan were cured. The oldest cured patient in Japan was a 78 year-old female reported by Ina et al.¹⁵⁾, our patient was also 78 years old.

Conclusion

A 78 year-old male patient with ischemic colitis of the stricture type which seemed to have evolved from the stricture type to the gangrene type during hospitalization was reported. The abstract of this report was presented at the 12th meeting of the Akita Clinical Surgery Group.

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高齢者の虚血性大腸炎壊死型の1治験例

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虚血性大腸炎の報告例は近年増加しているが、壊死型の報告例は少なくその予後も不良である。われわれは、S状結腸に発生した虚血性大腸炎が、入院経過観察中に壊死型へと進展した症例を経験したので報告する。

症例は78歳男性で主訴は左下腹部痛、嘔気、嘔吐であった。その後粘液性の血便がみられたため当院内科を受診し、虚血性大腸炎と診断され入院となった。入院後20日頃から、発熱、腹痛強まり、S状結腸巨大ガス像もみられ壊死型へ進行したと考え、緊急手術を行った。下行結腸S状結腸切除術、再建は端側吻合を行った。術後経過は順調で術後約30日で退院した。本例は本邦最高齢の治験例であった。