A Case of Phlebosclerotic Colitis with Involvement of the Entire Colon

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Phlebosclerotic colitis is a rare type of ischemic colitis caused by obstruction of the veins in the intestinal wall and adjacent mesentery, and is most commonly seen in the ascending colon. We report a 56-year-old woman presenting with intermittent abdominal pain and diarrhea for three years. She had a liver abscess and two episodes of pancreatitis during this time and experienced progressive body weight loss. Initial radiologic findings showed multiple tortuous threadlike calcifications in the region of the right side of the colon and transverse colon on plain abdominal radiographs and computed tomography images. A colonoscopy demonstrated brownish-black pigmentation on the right side of the colon with scattered hyperemic patches. The more distal along the colon, the more normal the color of the bowel appeared. Follow-up studies revealed calcifications not only alongside the colonic and mesenteric veins, but also extending into the superior and inferior mesenteric veins. These findings have not been reported previously. As noted in our patient, this disease entity may not be confined to the tributaries of the superior mesenteric vein. The entire colon may be involved in advanced disease. *(Chang Gung Med J 2010;33:581-5)*

Key words: ischemic colitis, phlebosclerotic colitis, computed tomography

Ischemic bowel disease is a heterogeneous group of disorders that has a unifying feature of bowel hypoxia caused by alteration in blood flow.(1) Phlebosclerotic colitis is a rare type of ischemic colitis caused by obstruction of the veins in the intestinal wall and adjacent mesentery, and is most commonly seen in the ascending colon.(2) This disease entity should be differentiated from ordinary ischemic colitis. The etiology and pathogenesis remain unknown. We present a case of phlebosclerotic colitis with involvement of the entire colon. Calcification was found not only along the colonic and mesenteric veins, but also extended into the superior and inferior mesenteric veins.

CASE REPORT

In 2004, a 56-year-old Taiwanese woman complained of intermittent fever and abdominal pain that had lasted for one month. She was hospitalized with an initial diagnosis of liver abscess. Abdominal sonograms revealed hypoechoic lesions in both hepatic lobes. Liver abscess was confirmed.

Laboratory findings showed a C-reactive protein level of 1.26 mg/dL (normal: <0.80 mg/dL). The complete blood cell count revealed the following: white blood cells, 17.2 x 10^9/L; red blood cells, 2.34 x 10^{12}/L; hemoglobin level, 7.6 g/dL; hematocrit level, 23.3%; and platelets, 485 x 10^9/L. Blood

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chemistry analysis showed glutamic-oxaloacetic transaminase was 54 U/L and glutamic-pyruvic transaminase 35 U/L. The liver abscess shrank after at the largest one was aspriated under sonographic guidance, and intravenous antibiotics were administered. Occult blood was found in the stool. A colonoscopic examination revealed brownish-black pigmentation on the right side of the colon, and scattered hyperemic patches (Fig. 1). The more distal along the colon, the more normal the color of the bowel appeared, and the gross appearance of the sigmoid colon was nearly normal.

The patient's overall condition improved, and she was discharged from the hospital. Over the next three years, however, she had two episodes of pancreatitis, intermittent abdominal pain and diarrhea. Her appetite was poor. She lost weight, and readmitted for further study. Her serum amylase level was 227 IU/L (normal range: 25-125 IU/L), and lipase level was 682 U/L (normal range: 23-300 IU/L).

A plain abdominal radiograph showed multiple tortuous threadlike calcifications in the region of the right side of the colon, transverse colon and left side of the colon. These linear calcifications were along the long axis of the colon (Fig. 2). CT images disclosed calcifications of the small mesenteric veins along the colonic wall, extending to the superior and inferior mesenteric veins, as well as edematous thickening of the colonic wall from the terminal ileum to the rectum (Fig. 3). Collaterals were found around the portal vein but the main portal vein was patent (Fig. 4). On the basis of the patient's clinical presentation, combined with the endoscopic and radiologic findings, phlebosclerotic colitis was diagnosed.

DISCUSSION

Ischemic colitis is one of the most common diseases of the colon, and is caused by disturbance of its blood supply.[2] It is usually caused by arterial obstruction due to arteriosclerosis, thrombosis, and embolus. Venous abnormalities leading to ischemia have only rarely been described.[3] Phlebosclerotic colitis is a term coined to describe a condition characterized by ischemia of the large bowel caused by sclerosis and calcification of the walls of the mesenteric veins.[4]

The clinical course of phlebosclerotic colitis is usually chronic and different from that of acute onset caused by arterial obstruction. The disease is considered to be irreversible.[2] Patients may present with a

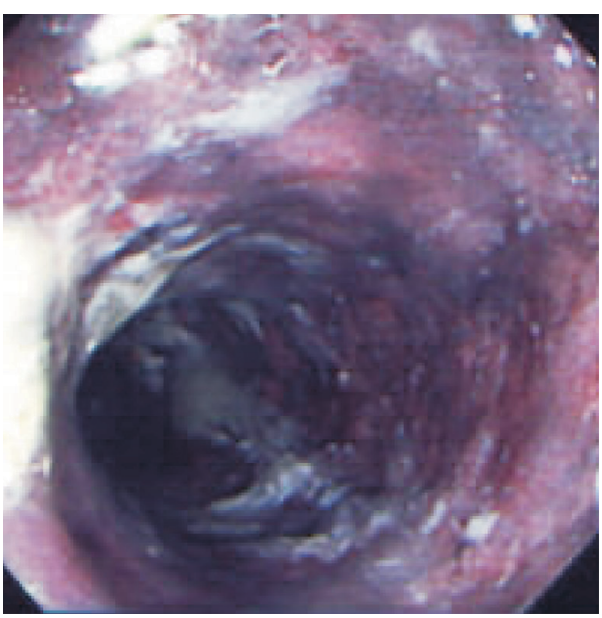

Fig. 1 Colonoscopic examination shows brownish-black pigmentation on the right side of the colon, with scattered hyperemic patches.

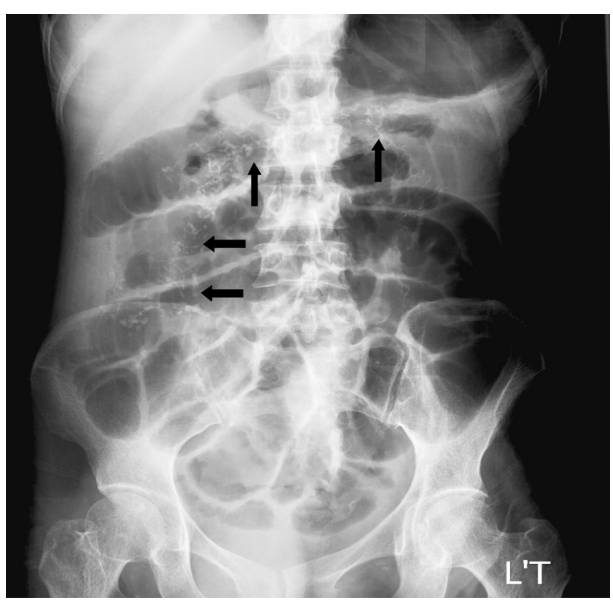

Fig. 2 Plain abdominal radiograph shows multiple tortuous threadlike calcifications (arrows) in the region of the right side of the colon, transverse colon and left side of the colon. Dilated bowels are noted, suggesting ileus.

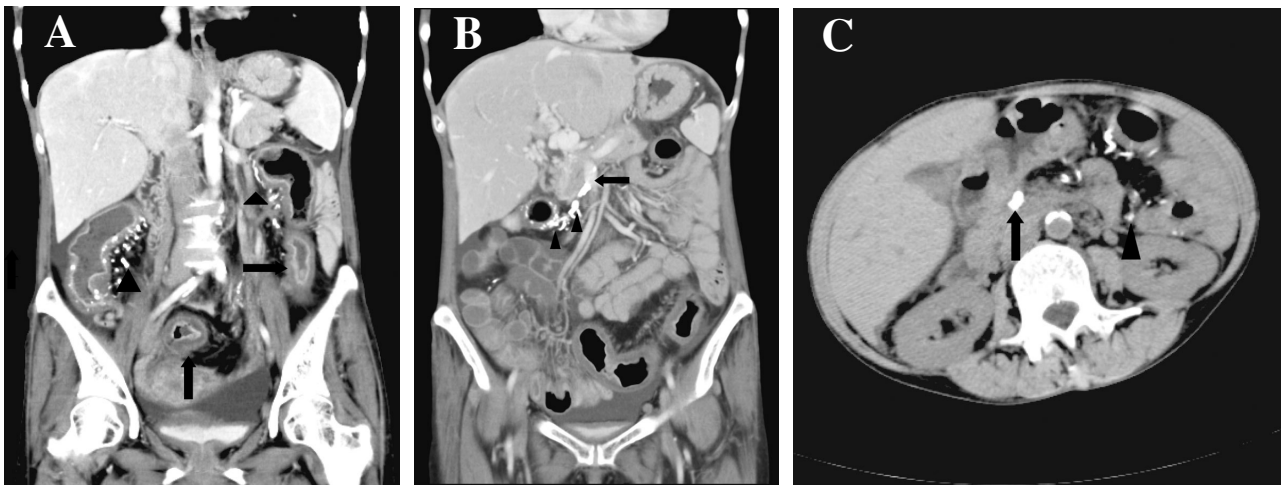

Fig. 3 CT images disclose calcifications of the small mesenteric veins along the colonic wall, extending to the superior mesenteric and inferior mesenteric veins, as well as edematous thickening of the colonic wall from the terminal ileum to the rectum. (A) Enhanced CT reconstructed coronal image shows calcifications (arrowheads) along the colonic walls and edematous thickening (arrows) of the ascending, descending and sigmoid colonic walls. (B) Enhanced CT reconstructed coronal image shows calcifications (arrowheads) within the mesenteric veins extending into the superior mesenteric vein (arrow). (C) Enhanced axial CT shows calcifications at the superior mesenteric vein (arrow) and inferior mesenteric vein (arrowhead).

long history of recurrent diarrhea, chronic severe lower abdominal pain, nausea, vomiting, and tarry stools positive for occult blood. The clinical symptoms depend on the severity of the disease and, therefore, many mild cases go undetected.[2] One reported patient was suspected to have pancreatitis.[4] However, the co-occurrence of liver abscess and repeated pancreatitis has not yet been reported. Liver abscess may be the result of pylephlebitis from the right side of the colon with infection spreading via the superior mesenteric vein to the portal vein.[5]

Fig. 4 Enhanced abdominal CT of the liver shows collaterals (arrows) around the porta hepatis.

The clinical diagnosis of phlebosclerotic colitis is based on a combination of physical symptoms, clinical findings, and the results of radiologic and endoscopic studies.[6] Colonoscopic examination in our patient revealed brownish-black pigmentation on the right side of the colon most likely due to venous congestion. Radiologic findings were characteristic.[2,4,7] On plain radiographs of this condition, multiple tortuous threadlike calcifications are seen in the region of the right side of the colon, and may extend into the transverse colon. These threadlike calcifications are arranged perpendicular to the bowel wall, which suggests vascular calcifications.[7] CT of the right side of the colon and proximal transverse colon reveals thick walls with numerous serpiginous venous calcifications within the bowel wall and adjacent mesentery. In our patient, mural thickening was more severe at the mesenteric attachment with increased adjacent hazy density, suggesting mesenteric vascular congestion. We were able to diagnose venous calcification by carefully compar-

ing unenhanced and contrast-enhanced CT scans and evaluating the arteriographic findings.[2] Calcifications were not only found alongside the colonic and mesenteric veins, but also extended into the superior and inferior mesenteric veins. These findings have not been reported previously. Phlebosclerosis may be an adaptive change in the venous wall due to prolonged increased venous blood pressure. It can occur in right-sided heart failure or portal hypertension.[8] However, our patient had no history of heart disease or portal hypertension at initial presentation. Collaterals found around the patent portal vein may have been due to increased venous pressure or obstruction of colonic draining veins with involvement of the superior and inferior mesenteric veins in advanced disease. This venous configuration differs from portal hypertension due to liver cirrhosis.

Reported cases have no family history, medical history, complications, or laboratory findings in common.[7] The pathogenesis of phlebosclerosis remains unclear, but characteristic features on radiographic findings may be pathognomonic. It is important to remember that phlebosclerotic colitis is not confined to the tributaries of the superior mesenteric vein. The entire colon may be involved in advanced stage disease.

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靜脈硬化性大腸炎侵犯整個大腸病：病例報告

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靜脈硬化性大腸炎是一個罕見的疾病，特徵爲大腸壁增厚纖維化及靜脈鈣化。我們報告一位五十六歲女性，臨床表徵爲反覆性腹痛及腹瀉，並有肝膿瘍及胰臟炎發生。此病變具有典型的放射線影學特徵：許多線狀鈣化沿著右側大腸有時會延伸至橫結腸，本病例追蹤時發現鈣化已延伸至上下腸系靜脈，因此靜脈硬化性大腸炎在晚期會侵犯整個大腸。(長庚醫誌 2010;33:581-5)

關鍵詞：缺血性大腸炎，靜脈硬化性大腸炎，電腦斷層

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