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Case Report

Panniculitis of the Descending Colon Caused by Enterocolic Phlebitis: A Case Report

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Shiraki, M., Takagi, S., Watanabe, M., Sato, Y., Takahashi, S., Kinouchi, Y., Ishii, S., Mizoi, T., Shiiba, K., Sasaki, I. and Shimosegawa, T. *Panniculitis of the Descending Colon Caused by Enterocolic Phlebitis: A Case Report*. Tohoku J. Exp. Med., 2004, **202** (4), 299-304 —— A 73-year-old male was referred to our hospital for abdominal pain, diarrhea and general fatigue lasting for 3 weeks. Physical examination of the abdomen revealed a firm mass in the left abdominal region. Computed tomography revealed a mass around the descending colon. Colonoscopy and barium enema revealed poor extensibility of the lumen with edematous mucosa, and narrowing of the descending colon with rugged mucosal surface. Because of the clinical symptoms and findings, the patient was diagnosed clinically as suffering from panniculitis of the descending colon. He underwent the left hemi-colectomy with side-to-side colo-colostomy after making of a loop ileostomy. Histological analysis of the resected colon showed an infiltration of inflammatory cells, predominantly lymphocytes, into veins and venules of the submucosa, muscularis propria and fat tissue of the colonic mesentery, with an involvement of all layers of the vessel wall. Arteries were escaped from inflammatory changes. The histopathological diagnosis of enterocolic phlebitis and venulitis was made because of these findings. ——— enterocolic phlebitis; ileostomy; panniculitis; mesenteric inflammatory veno-occulusive disease

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Panniculitis of the colon, which refers mainly to mesenteric panniculitis, is a rare disease characterized by non-specific inflammation of the adipose tissue. The cause of this disease and primary inflammatory process is still unknown in detail. We report here a case of panniculitis of the descending colon caused by enterocolic phlebitis and venulitis.

Case Report

A 73-year-old man who had been under a medical treatment of diabetes mellitus with nephropathy was referred to our hospital for abdominal pain, diarrhea and general fatigue lasting for 3 weeks. Total colonoscopy performed one month before revealed only a small colonic polyp in the ascending colon and no manifestation of inflammation was found. On the first admission, the body temperature was 36.9°C. The heart rate was 99 beats/min with a blood pressure of 140/62 mmHg. Physical examination of the abdomen revealed a firm mass with tenderness in the left abdominal region. Laboratory investigations showed a normal white blood cell count of 6700 /mm^3 and a slightly decreased red blood cell count of 347×10^4 /mm^3. The blood chemistry examination revealed that C-reactive protein was elevated to 4.5 mg/100 ml. The stool culture test did not show abnormal findings. Transabdominal bowel ultrasonography showed a wall thickning of the descending colon. And computed tomography of the abdomen revealed a mass around the descending colon, whose density is slightly higher than that of retroperitoneal fat tissue (Fig. 1). Colonoscopy revealed a narrowing of the intestinal lumen with edematous mucosa, poor extensibility and multiple polypoid lesions but no erosion nor ulcer in the descending colon. Barium enema revealed narrowing of the descending colon with rugged mucosal surface (Fig. 2). Because of the clinical symptoms and findings, the patient was diagnosed clinically as suffering from panniculitis of the descending colon. While being observed under fasting for 4 weeks, his abdominal symptoms had become to be faded away so as to be discharged. About one month later since the discharge, he was readmitted due to a recurrence of diarrhea and abdominal pain. On the second ad-

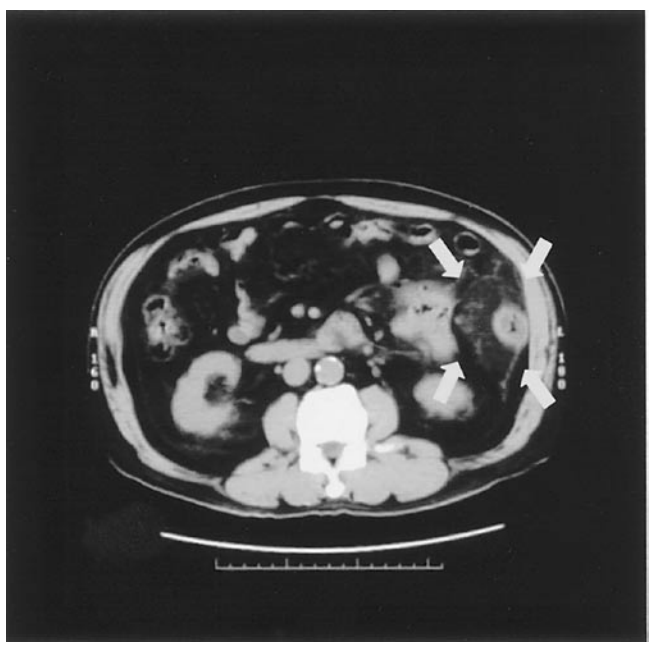

Fig. 1. Computed tomography of the abdomen revealed a thickening of the wall of the descending colon with a little increasing of paracolic mass density. Arrowheads indicate the mass around the descending colon.

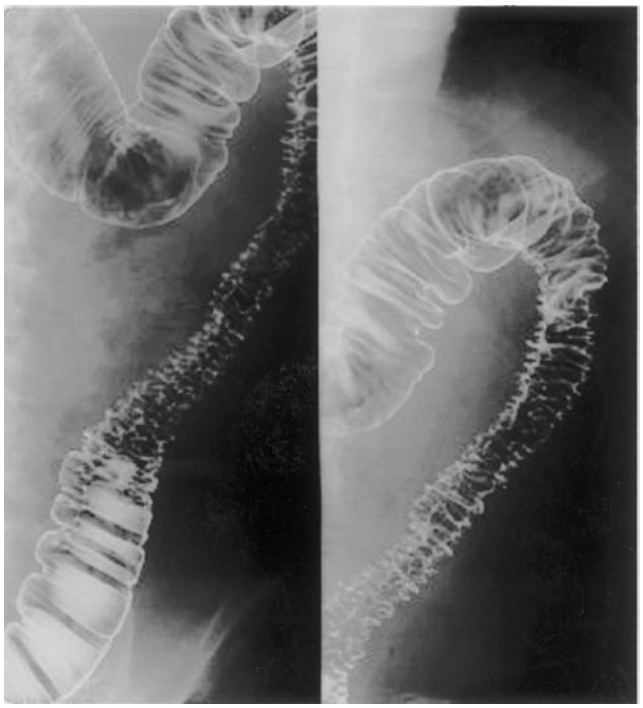

Fig. 2. Barium enema revealed narrowing of the descending colon with rugged mucosal surface.

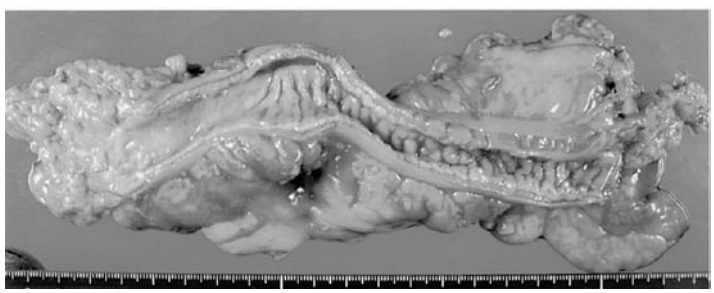

Fig. 3. Surgical exploration revealed that the wall of the descending colon was hard and thickened. The adipose tissues around the descending colon were fibrous.

mission, the body temperature was 37.4°C. The heart rate was 85 beats/min with a blood pressure of 167/82 mmHg. On the physical examination of the abdomen, an elastic hard mass with tenderness was palpable in the left abdominal region. Laboratory investigations showed a white blood cell count of 6700 /mm^3 and C-reactive protein of 4.7 mg/100 ml. The diagnosed of a recurrent panniculitis of the descending colon was made, and he underwent the left hemi-colectomy with side-to-side colo-colostomy 3 months after making of a loop ileostomy. In surgical exploration, the wall of the descending colon had become to be hard and thickened. The adipose tissues around the descending colon had been infliltrated with fibrous tissues (Fig. 3). Six months later, the ileostomy was closed and a functional end-to-end anastomosis was made. Histological analysis of the resected colon showed that the intestinal mucosa became atrophic and decreased the thickness. Microscopic erosions were occasionally found. The lipophages and fat necrosis was not present

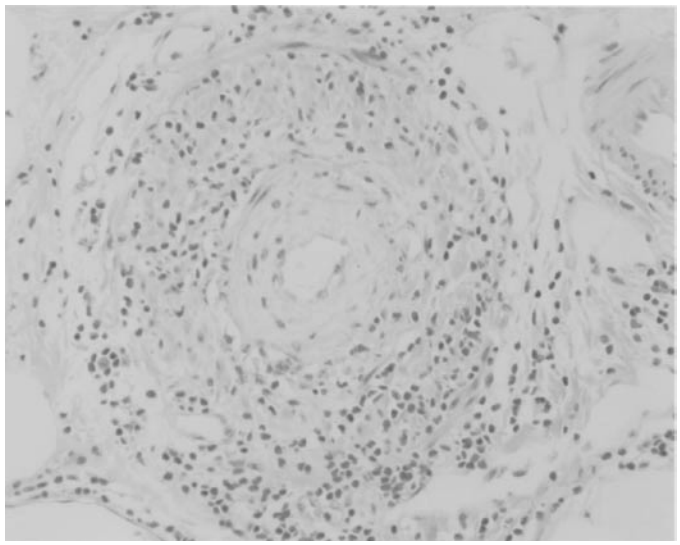

Fig. 4. Histological analysis demonstrated predominantly lymphocytic infiltration of veins and venules in the submucosa, muscularis propria and fat tissue of the colonic mesentery (Hematoxylin and Eosin, ×200).

in the mesentery. There was an infiltration of inflammatory cells, predominantly lymphocytes, into veins and venules of the submucosa, muscularis propria and fat tissue of the colonic mesentery (Fig. 4), with an involvement of all layers of the vessel wall. In addition, necrotizing vasculitis was occasionally observed. The wall of the vein was markedly thickened, to occlude the vascular lumen, but arteries were escaped from inflammatory changes. Because of these findings, the histopathological diagnosis of enterocolic phlebitis and venulitis was made.

Discussion

Panniculitis, which occurs mainly in the mesentery, is a non-specific inflammation of the fat tissue. The etiology and primary process of the inflammation is still unclear although previous abdominal surgery, trauma and allergic reactions may cause this disease (Adachi et al. 1987; Wexner and Attiyeh 1987). The diagnosis usually requires the histological confirmation of fat necrosis with an inflammatory infiltrate and/or an infiltration of foamy lipid-laden macrophages (Adachi et al. 1987; Wexner and Attiyeh 1987). The histological examination of this case did not show fat necrosis and an infiltrarion of lipophages, but revealed an enterocolic lymphpcytic phlebitis. We diagnosed clinically this patient as having panniculitis because of several findings mentioned above. In this disease, patients showed variable symptoms such as an abdominal mass with or without abdominal pain, nausea and vomiting (Adachi et al. 1987; Wexner and Attiyeh 1987). The patient in this report also complained the abdominal pain and physical examination revealed a firm mass with tenderness. Some investigators reported that computed tomography is efficient for the diagnosis of this disease (Perez-Fontan et al. 1986; Seo et al. 2001). Computed tomography of the abdomen manifest a mass with density slightly higher than that of normal retroperitoneal fat due to an inflammatory cell infiltration into the mesenteric fat. Barium enema is also considered to be useful for making a diagnosis of panniculitis (Perez-Fontan et al. 1986; Seo et al. 2001). The characteristic findings of barium enema are a serrated contour, thumbprinting and a narrowing of the bowel lumen with rugged mucosa. In the present case, computed tomography and bariun enema showed these characteristics findings of panniculitis. The findings of colo-

noscopy have been also described in the previous literature as a narrowing of intestinal lumen with edematous mucosa, and poor extensibility, and presence of slightly elevated speckled lesions, and dilated vessels and absence of erosions and ulcers (Seo et al. 2001). Colonoscopy of the present case revealed the same findings. Because the surface of mucosa was edematous but was not erosive or ulcerated, we assumed that the inflammation is not located in the colonic mucosa but outside of the colon. We did not perform surgical biopsy because some investigators have suggested that surgery should be avoided when the findings of computed tomography are compatible with the reported findings of panniculitis (Badiola-Varela et al. 1991; Seo et al. 2001). The reason is that this disease usually follows a benign course, and it should be avoided putting stress on the patient as possible. In this case, fasting for 4 weeks had removed abdominal symptoms. And after recurrence of panniculitis, loop-ileostomy to rest the bowel seemed to improve the inflammation. The left hemi-colectomy, however, was inevitable due to severe narrowing of the descending colon.

In this case, the histological analysis showed enterocolic phlebitis and venulitis, not typical panniculitis. Enterocolic phlebitis is a subset of vasculitis, which involves the veins and venules of digestive tract (Saraga and Costa 1989; Saraga and Bouzourenne 2000; Arain et al. 2002). Some investigators have reported the similar cases as mesenteric inflammatory veno-occulusive disease (Flaherty et al. 1994; Lie 1997). This vasculitis is usually classified into 3 types; lymphocytic phlebitis, necrotizing phlebitis and granulomatous phlebitis (Flaherty et al. 1994; Saraga and Bouzourenne 2000). We consider that the present case has characteristics of lymphocytic phlebitis mixed with necrotizing form.

The pathogenesis of these diseases is still controversial, but in this case, it can be thought that enterocolic phlebitis causes panniculitis. Because the vascular inflammation of enterocolic phlebitis also involves perivascular tissues, the striking inflammation can cause panniculitis. And the presented case did not have any collagen disease, which is the cause of vasculitis, and had not taken corticosteroid or rutoside. Arain et al. (2002) have reported a case of enterocolic lymphocytic phlebitis which formed a left lower quadrant mass. The microscopic analysis of their case revealed an enterocolic lymphocytic infiltration to the veins and a fat necrosis with foamy macrophages infiltration. This case was also considered as a panniculitis caused by enterocolic phlebitis.

We report here the case diagnosed to develop a panniculitis caused by enterocolic phlebitis, to which ileostomy was efficacious for the first time.

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