Case report

Ultrasonographic findings of amebic colitis

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We present here a case of a 64-year-old man with amebic colitis who was examined by ultrasonography. Gray-scale ultrasonography revealed marked thickening of the bowel wall, specifically thickening of the submucosal layer. Color Doppler ultrasonography showed hypervascularity of the submucosal and proper muscle layers. With effective treatment, thickening and hypervascularity of the bowel wall disappeared promptly. This is the first report demonstrating ultrasonographic findings of amebic colitis. We conclude that information provided by ultrasonography is useful not only for detecting the bowel abnormality of amebic colitis but also for evaluating the therapeutic effect on amebic colitis.

Key words: amebic colitis, ultrasonography, bowel wall, thickening, hypervascularity

Introduction

Gray-scale and color Doppler ultrasonography have been shown to be useful for examining patients with a variety of bowel diseases. For instance, it has been shown ultrasonographically that the bowel wall, specifically the mucosal muscle and the submucosa, was thickened in some inflammatory conditions.1-3 Although ultrasonographic findings of bowel diseases, such as ulcerative colitis, Crohn’s disease, intestinal tuberculosis, Escherichia coli O157 enterocolitis, Salmonella enterocolitis, Campylobacter enterocolitis, and ischemic colitis have been reported, those of amebic colitis have not been demonstrated so far. We describe here a case of amebic colitis that was observed ultrasonographically during the course of treatment.

Case report

A 64-year-old man was referred to our hospital in August 1998 for the evaluation of mucohemorrhagic diarrhea. The patient had engaged in homosexual behavior from the age of 30 years, but he had never suffered from rectal bleeding and there was no notable past medical history.

Physical examination revealed tenderness over the lower abdomen but no other noticeable findings. In laboratory data, the erythrocyte sedimentation rate was 27 mm/h, and the white blood cell count was 4200/mm³ with 8.6% of eosinophils. All biochemical parameters, including tumor markers, were within the normal limits.

In serological examination for amebiasis, indirect hemagglutination was positive at a titer of 1/160, and indirect fluorescent antibody (IgG) was also positive at a titer of 1/400. The stool was positive for occult blood, parasites but specific pathogenic bacteria including Mycobacterium tuberculosis were not detected in the feces.

To examine the bowel abnormality in this patient, a sonographic examination was performed with an ultrasound machine (Logic 500, version 3.1; GE Medical Systems, Milwaukee, WI, USA), using a 3.5-MHz convex array probe (C551; GE Medical Systems). Gray-scale ultrasonography showed marked wall thickening of the cecum (Fig. 1a), sigmoid colon (Fig. 1b), and rectum. Maximum wall thickness was 29.9 mm at the cecum, 26.5 mm at the sigmoid colon, and 18.1 mm at the rectum. The layered structure of the bowel wall was conserved, and the submucosal layer showed remarkable thickening. Wall thickening was not observed at the ascending, transverse, and descending colon. Color Doppler ultrasonography showed hypervascularity of the submucosal and proper muscle layers in the cecum (Fig. 1c), sigmoid colon, and rectum. Pulse Doppler ultrasonography showed an arterial blood flow signal in the cecum (Fig. 1d), sigmoid colon, and rectum.
Barium enema examination revealed ulcerations and erosions at the cecum, sigmoid colon, and rectum. However, consistent with the ultrasonographic findings, there were no remarkable changes at the ascending, transverse, and descending colon. Colonoscopic examination showed markedly edematous mucosa at the cecum (Fig. 2a), multiple ulcerations at the sigmoid colon (Fig. 2b), and multiple erosions at the rectum (Fig. 2c). However, no noticeable findings were observed at the ascending, transverse, and descending colon. A biopsy specimen obtained from the ulcer at the sigmoid colon revealed amebic trophozoites of *Entamoeba histolytica* phagocytizing erythrocytes (Fig. 2d).

The patient was treated with metronidazole (1500 mg/day) for 7 days resulting in excellent clinical response. On the day following initiation of the treatment, mucosahemorrhagic diarrhea and tenderness over the lower abdomen disappeared. Two days later, gray-scale ultrasonography showed marked improvement of wall thickening of the cecum, sigmoid colon, and rectum. The maximum wall thickness was 11.2 mm at the cecum (Fig. 3a), 6.8 mm at the sigmoid colon (Fig. 3b), and 4.6 mm at the rectum. Color Doppler sonography also showed marked decrease of hypervascularity of the submucosal and proper muscle layers of the cecum, sigmoid colon, and rectum. Two weeks after the initiation of the treatment, gray-scale ultrasonography did not show thickening of the bowel wall, and colonoscopic examination revealed ulcer scars at the cecum and sigmoid colon. The biopsy specimen no longer showed *Entamoeba histolytica*.

**Discussion**

Despite the deleterious effects of intraluminal gas on ultrasonographic images, gray-scale ultrasonography is a simple and non-invasive technique for examining a