Amoebic Colitis in an Acquired Immune Deficiency Syndrome Patient Mimicking Colonic Neoplasms

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ABSTRACT

Amoebic colitis is common in developing countries, with variable and non-specific symptoms. The unusual findings of colon involvement include fulminant colitis and its complications, such as chronic abscess formation mimicking colonic neoplasms. Patients with acquired immunodeficiency syndrome are part of the highest risk invasive amoebiasis group that led to death probably, especially if wrong diagnosis or delayed treatment happens. We report a case of an AIDS patient with amoebic colitis whose presenting symptoms and radiological findings closely resembled those of colonic neoplasm.

CASE REPORT

A 48-year-old man was transferred to our hospital from another institution. His presenting complaints were epigastric pain for 10 days, and anorexia, diarrhea and fever for 2 weeks. There was no active gastrointestinal bleeding. There was no travel history in the past few years before presentation. His medical history included hepatitis B and left leg deep vein thrombosis. Physical examination revealed abdominal tenderness and muscle guarding. There was no evidence of Murphy sign. A plain abdominal X-ray revealed no significant findings. The full blood count showed no leukocytosis (white cell count, $9.3 \times 10^9 \text{ /L}$). Computed tomography of the abdomen was performed to rule out the need for surgical intervention and this revealed a 3.3 $\times$ 3.1 cm eccentric oval submucosal tumor with heterogeneous attenuation from -7 Hounsfield Unit (H.U.) to 35 H.U. at proximal transverse colon on a pre-contrast scan (Fig. 1a). A post-contrast scan showed rim enhancement of the tumor with central necrosis together with perifocal mesocolon invasion. Around the lesion, colon wall thickening with areas of poor enhancement was noted (Fig. 1b). Discontinuity of mucosa overlying the submucosal tumor was also noted (Fig. 1c). A colon tumor, such as a gastrointestinal stromal tumor, was our initial diagnosis, while colitis or colon cancer was considered less likely but could not be ruled out entirely. Due to fear of perforation of the necrotic tumor, the colon endoscopic examination was not performed. Laparotomy was performed involving a transverse colon radical colectomy together with incidental appendectomy. Diverticulitis with rupture and abscess formation was the surgical diagnosis. Grossly, an ill-defined mass lesion in the mesocolon was found. It measured up to 7.0 $\times$ 6.5 $\times$ 5.5 cm. On opening the colon, multiple ulcers are found on the mucosa, covering up to 6.5 $\times$ 2.5 cm in area. The largest one measures 1.6 $\times$ 1.0 cm in area. On sections, multiple abscesses are noted within the mass lesion, up to 3.5 $\times$ 3.0 $\times$ 2.5 cm. Some of them extend to the mucosal surface (Fig. 2a). Microscopic findings showed a picture
Amoebic colitis in an AIDS patient mimicking colonic neoplasms

**Figure 1.** Computed tomographic scans of the abdomen showing a. a 3.3 × 3.1 cm eccentric oval submucosal soft tissue tumor of transverse colon with protruding surface on the pre-contrast study (arrow). b. The post-contrast scan showed rim enhancement of the tumor with central necrosis and perifocal mesocolon invasion (arrow). Around the lesion, the colon wall shows thickening with areas of poor enhancement (short arrow). c. Discontinuity of mucosa overlying the submucosal tumor (arrows) was also noted on the post-contrast scan.

**Figure 2.** a. Grossly, an ill-defined mass lesion in the mesocolon was found. It measured up to 7 × 6.5 × 5.5 cm (large arrows). Multiple ulcers were found on the mucosa (short arrows). Multiple abscesses are found within the mesocolon mass lesion and some of them extend to the mucosal surface (arrows). Microscopic finding showed b. flask-shaped ulcer in colon. An ulcer (large arrows) with narrow neck undermines extensively through the submucosa (arrows) (40 X H & E stain).
Amoebic colitis in an AIDS patient mimicking colonic neoplasms

DISCUSSION

Entamoeba histolytica is a major cause of diarrhea in developing countries. Amoebiasis is uncommon in developed countries. In Taiwan, where amoebic dysentery is a notifiable disease, a total of 676 cases were reported from 2006 to 2009 [1]. The disease infests millions of people worldwide each year, and approximately 40,000 to 100,000 people die annually from the disease [2].

Intestinal invasion of amoebiasis results in colonic mucosal ulceration that gives rise to classic flask-shaped ulcers. The differential diagnoses of this finding include Crohn’s disease and appendiceal abscesses in younger individuals, and colon cancer and diverticulitis in the elderly [3]. CT is a highly sensitive method for the detection of the intramural abnormalities and extraluminal extensions of colonic disease. Focal or extended submucosal necrosis with intramural dissection reflects the underlying pathological morphology change [4]. The same findings that were presented in our patient were also noted during a retrospective analysis, and submucosal necrotic tumors associated with mucosa involvement are well-correlated with the pathological findings. Other non-specific CT findings that have been reported include significant intra-peritoneal air, transmural air and edema of the colonic wall [5]. Unusual reported CT findings have included a thick-walled cystic mass [6]. The formation of an inflammatory phlegmon which mimics a colonic tumor, the so-called ameboma [7] which occurred in our patient especially prominent on precontrast CT scan, have also been noted.

The diagnosis of amoebic colitis is made from the demonstration of Entamoeba histolytica in the stool or colonic mucosa of patients with diarrhea [8]. The reported sensitivity of microscopic stool examination identifying amoebic protozoa ranges from 25% to 60% and is operator-dependent. The reported sensitivity of the serum IHA (indirect hemagglutination assay) is 70% during acute illness and, more than 90% during convalescence [9]. The result for IHA of our patient was positive with a reading of 1:1024.

Amoebic colitis is treated by metronidazole, followed by a luminal agent (paromomycin, iodoquinol, or diloxanide furoate) to eradicate colonization [10]. When possible, amoebic colitis, even with perforation, is managed conservatively, with the addition of antibiotics to deal with bowel flora [11]. A vaccine for amoebiasis is being developed [9].

Amoebic infection in AIDS patients may result in death especially if it is misdiagnosed or treatment is delayed. Satoshi Mitarai et al. reported that five out of six patients were misdiagnosed on initial medical examination. These patients belonged to a high-risk group and may have been reluctant to present themselves at a hospital for fear of stigmatization [12]. Our patient did not present himself as HIV positive before the operation. The lack of white cell count elevation in our patient maybe related to his HIV infection, and the images of the tumor-like colon lesion were complicated, which misled our initial diagnosis. It is thus important to consider a diagnosis of amoebiasis whenever patient presents with a history of subacute or chronic diarrhea. Furthermore, if the patient may be a member of homosexual group, amoebiasis needs to be taken into serious consideration.

Invasive amoebiasis (IA, definitely diagnosed when there are identified erythrophagocytic trophozoites or a positive polymerase chain reaction (PCR) for Entamoeba histolytica was identified in clinical specimens from patients with colitis and liver abscess, which was noted in the microscopic findings for our patient) is an important parasitic disease associated with significant morbidity and mortality worldwide. Hung et al reported in a cohort of 296 patients with HIV infection, eighteen of whom (6.1%) were diagnosed with IA [13]. Fifty cases of invasive amoebiasis were reported in homosexual Japanese males and pathogenic zymodemes were identified in the Entamoeba histolytica isolates [14]. These findings suggest that IA is an emerging parasitic infestation in HIV-infected patients and may be the initial presentation of HIV infection in areas endemic for amoebic infection.

The rare manifestations in AIDS (invasive amoebiasis) and the rare findings in amebic colitis (mimicking colonic neoplasms) of our patient are unexpected and impressive. Differentiating amoebiasis from colorectal carcinoma by endoscopy with biopsy, serology, and other novel modes of antigen detection provides essential information. A high index of suspicion is crucial for diagnosis, and is essential if one is to avoid unnecessary surgery [15], especially in HIV infected patients who conceal their own secrets. Radiologists should be mindful of the typical CT findings, which include the flask-shaped ulcer, extended submucosal involvement and intramural dissection, and sometimes mimicking colonic neoplasms.
Amoebic colitis in an AIDS patient mimicking colonic neoplasms

REFERENCES