Case Report

Ameboma Mimicking Submucosal Tumor of the Colon in an Elderly

Shen-Yung Wang 1, Shou-Chuan Shih 1,2, Tsang-En Wang 1,2, Wen-Hsiung Chang 1,2, Horng-Yuan Wang 1,2, Shee-Chan Lin 1.*

1 Division of Gastroenterology, Department of Medicine, Mackay Memorial Hospital, 2 Mackay Medicine Nursing and Management College, Taipei, Taiwan.

Abstract

Ameboma is a rare presentation of intestinal amebiasis, which is caused by infection with Entamoeba histolytica. Amebomas are generally concentric and can be difficult to differentiate from carcinoma in the gastrointestinal tract, which are commonly seen in elderly patients. Radiological studies or colonoscopy can be difficult to provide the diagnosis. We present an elderly man with an ameboma in the ascending colon, which manifested as a submucosal tumor in the radiological or endoscopic studies. His serum antiamebic serology test was positive. He received surgery because of poor response to medical treatment. A full course of antiamebic therapy followed by a luminal agent were given and he had a smooth postoperative course without relapse of amebic infection. Although the elderly population has a higher incidence of colonic malignancy, ameboma should be considered in the differential diagnosis of submucosal tumors in the colon, especially in patients with an insidious onset of disease.

1. Introduction

Ameboma is a rare presentation of invasive amebiasis, which is caused by infection with Entamoeba histolytica. Intestinal amebiasis has a broad spectrum of presentation ranging from asymptomatic to clinical disease manifested by dysentery and even extraintestinal disease, such as liver or brain abscesses. The infection is transmitted via the fecal-oral route by digestion of contaminated foods or water, venereal diseases through anal practices, and direct rectal inoculation with cysts of Entamoeba histolytica. E histolytica asexually spawns trophozoites in the colon and creates colonies in the mucosal layer in most of the patients. The patient may be asymptomatic until trophozoites penetrate the mucosa to the submucosal layer, resulting in amebic colitis. The hallmark of amebic colitis is an ask-shaped mucosal ulcer, which is related to the spreading of trophozoites in the submucosa. Patients with amebic colitis usually suffer from weeks of abdominal pain and bloody diarrhea. Weight loss is common because of the insidious onset of disease, whereas fever occurs in less than 40% of patients. Amebic colitis can present with chronic diarrhea without weight loss, which is a symptom that is usually neglected by elderly patients. Elderly individuals and patients receiving corticosteroids may have a more severe clinical course, presenting with complications, such as toxic megacolon.

A persisting E histolytica infection in the colon may cause the formation of mass-like granuloma (i.e., ameboma). Ameboma is generally presented as segmental and concentric mucosal lesion in the gastrointestinal tract and may cause lumen narrowing, leading to obstructive symptoms, and can have single or multiple occurrences in the colon. Ameboma can be difficult to differentiate from carcinoma, which are commonly seen in elderly patients. Some roentgenological characteristics have also been reported, including the multiple occurrence lesions or the lack of shelving deformity. A colonoscopy may find an annular mass-like usually occurring in the cecum and the ascending colon. However, these masses can still be visually indistinguishable from colonic carcinoma, and a diagnosis cannot be obtained via endoscopic study in nearly one-third of patients. Submucosal lesions in the colon can result from neoplastic or non-neoplastic causes, such as gastrointestinal stromal tumor, lymphoma, and lipoma. Ameboma, however, has not been reported as a single, submucosal tumor in the colon. Herein, we report an elderly man with a colonic submucosal tumor associated with invasive amebiasis and ameboma formation.

2. Case Report

A 77-year-old man presented with abdominal pain in the right lower quadrant for 3 months. The pain was dull in character and...
located in the right upper abdomen at first, followed by the right lower abdomen. He had experienced general malaise and poor appetite with easy satiety. The patient had lost 3 kg weight over the course and did not present with fever, hematochezia, or diarrhea. He had smoked more than one pack of cigarettes per day for nearly 50 years, which led to chronic obstructive pulmonary disease that was treated with an inhaler containing salmeterol and fluticasone. The dosage of the inhaler varied according to disease severity. He had retired 20 years ago from being a travel guide and has had no recent travel. He had no family history of colorectal cancer.

At admission, the patient was afebrile with a normal blood pressure and respiration. Physical examination showed a fist-size hard mass in the right lower quadrant of the abdomen. An abdominal ultrasound found an 8-cm homogeneous hypoechoic mass abutting the ascending colon in the right abdomen. A barium contrast study showed a bulging mass causing luminal narrowing of the ascending colon (Fig. 1). Laboratory data showed normal complete blood counts, electrolytes, and serum level of liver biochemistries and alkaline phosphatase. His erythrocyte sedimentation rate was slightly elevated at 66 mm/hr and his serum carcinoembryonic antigen level was normal at 1.31 ng/mL (reference range, <5 ng/mL). Upper gastrointestinal endoscopy was unremarkable. An abdominal computed tomography scan revealed a hypodense cystic lesion of the ascending colon (Fig. 2). After admission, he had become mildly febrile. Aspiration of the lesion yielded yellow pus-like fluid. No organism was identified or cultured in the aspirated fluid. No significant pathogens were found in stool smear and culture. Colonoscopy demonstrated a giant, eccentric submucosal tumor with central ulceration in the ascending colon (Fig. 3). A biopsy specimen revealed a nonspecific inflammation of the mucosa. The patient was treated with antibiotics, but the fever persisted and the lesion responded poorly on ultrasound follow-up.

We next performed an open laparotomy. A 5-cm solid mass filled with a jelly-like fluid was found in communication with the intestinal lumen in the ascending colon. Multiple enlarged lymph nodes were found along the ileocolic vessels and the right branch of the middle colic artery. Perforation of the ascending colon into the pericolic tissue was noted. A right hemicolectomy was performed, and the resected specimen disclosed a tumor containing a deep ulceration, thick exudate, marked tissue necrosis, and transmural inflammation. No malignant cells were identified. Histopathological examination of the resected specimen revealed periodic acid-Schiff positive trophozoites of *E histolytica* (Fig. 4), which ingested erythrocytes. Invasive amebiasis with colonic ameboma was diagnosed. Following resection of the tumor, the patient received

---

**Fig. 1.** A double-contrast barium enema showed a submucosal tumor (arrowhead) in the ascending colon.

**Fig. 2.** Reconstructed computed tomography scan showed a hypodense cystic lesion in the ascending colon.

**Fig. 3.** Colonoscopy reveals a submucosal tumor with ulceration in the ascending colon.
metronidazole for 2 weeks and tinidazole for another 2 weeks. The patient had an uneventful postoperative recovery and remained asymptomatic for 6 months following surgery.

3. Discussion

We described an elderly with ameboma in the ascending colon, which manifested as a submucosal lesion. Ameboma is a rare manifestation of amebic colitis, which usually has a more aggressive course in elderly and those receiving corticosteroids. The described patient had a diagnosis dilemma by findings from the radiological or endoscopic studies. He has a positive serum antiamebic serology test to support a diagnosis of amebic infection. As the patient responded poorly to the medical treatments, he received surgery to resect the colonic ameboma. Our report warranted that ameboma should be considered in the differential diagnosis of colonic submucosal tumor despite of a higher incidence of colonic malignancy in the elderly population.

A diagnosis of amebiasis is usually made by identification of quadrinucleated cysts or trophozoites containing ingested erythrocytes by microscopic examination of stool or colonic mucosa. However, microscopic examination requires experienced eyes, and macrophages or polymorphonuclear leukocytes can lead to false-positive results. The sensitivity of microscopic examination with quadrinucleated cysts or trophozoites containing ingested erythrocytes by microscopic examination of stool or colonic mucosa can have a much greater sensitivity (80%–94%) and specificity (94%–100%) compared with culture or microscopic examination. However, a commercially available stool antigen test kit is reported to have potential cross-reactivity with strains of Entamoeba other than E histolytica. A serum antiamebic serology test may provide an alternate for diagnostic support. The indirect hemagglutination test of antibodies to amebas have a sensitivity ranging from 70% to more than 90% according to clinical stages of amebic colitis. The antiamebic antibody may persist for years after the first infection, which makes it less useful in distinguishing an active infection from a past one, especially for patients from an endemic area. Polymerase chain reaction amplification with strain-specific DNA probes is reported to provide much greater sensitivity than a stool antigen test in terms of the level of detection and strain-specific detection.

The treatment for amebic infection varies. Asymptomatic colonization is a risk factor for the future development of invasive disease. A luminal agent, such as paromomycin, may be the only treatment necessary. Invasive amebiasis should be treated more aggressively with metronidazole or tinidazole, followed by a luminal agent to eradicate luminal colonization. The duration of treatment varies with different drug regimens and usually lasts 5–10 days. It is uncommon for amebic colitis to present as fulminant or necrotizing colitis, toxic megacolon, or ameboma. Fulminant or necrotizing colitis is the most serious manifestation and is associated with high mortality. Bowel perforation may occur despite antiamebic therapy, which requires surgery. Toxic megacolon is rare and usually has no response to medical treatment alone and typically results in the need for early surgery. Ameboma is uncommon and is often diagnosed by laparotomy. In addition, ameboma may respond to antiamebic therapy, leading to a favorable outcome. However, in complicated situations, such as bowel perforation or poor response to medical treatment, surgical intervention may be required.

Ameboma is a rare manifestation of amebic colitis. A more severe course is usually observed in those receiving corticosteroids and elderly patients. The presented case had an unusual presentation of this rare disease entity as a submucosal tumor in the colon. A definitive diagnosis from radiological or endoscopic evaluation is difficult. Although the elderly population has a higher incidence of colonic malignancy, ameboma should be considered in the differential diagnosis of colonic submucosal tumor.

References