J Infect Chemother 23 (2017) 778–781

Contents lists available at ScienceDirect

Journal of Infection and Chemotherapy

journal homepage: http://www.elsevier.com/locate/jic

Case Report

A case of amebiasis with negative serologic markers that caused intra-abdominal abscess

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ARTICLE INFO

Article history:
Received 20 February 2017
Received in revised form
3 April 2017
Accepted 20 April 2017
Available online 18 May 2017

Keywords:
Amebiasis
Intra-abdominal abscess
Anti-amoeba antibody

ABSTRACT

A 23-year-old Japanese woman presented with abdominal distention following fever, diarrhea, and abdominal pain during a stay in Taiwan. Serology for the detection of amebic-antibodies and stool microscopic examination were both negative. A computed tomography scan showed a 13 cm diameter abscess spreading from the lower abdominal wall to the pelvic retroperitoneal space. Needle aspiration of the abscess was done under computed tomography guidance, and microscopy of the aspirated fluid revealed trophozoites of *Entamoeba*. The patient was diagnosed as amebiasis with negative serologic markers that caused intra-abdominal abscess. Intravenous metronidazole treatment for two weeks did not result in any improvement of the abscess. After irrigation and drainage of the abscess, her symptoms resolved. This case report highlights that amebiasis should be considered when indicated by patient history, including travelers returning from endemic areas, and that further evaluation is necessary for diagnosis, even if the serology and stool test are negative.

1. Introduction

Entamoeba histolytica (*E. histolytica*) causes various clinical conditions, such as asymptomatic infection, amebic colitis, which is usually chronic but rarely fulminant, and extraintestinal amebiasis, including abscess of liver and other organs [1,2]. Fulminant amebic colitis has been known to exhibit severe complications, including perforation and intra-abdominal abscess, and to be associated with high mortality rates [3,4]. We present a case of amebiasis that caused a huge abdominal abscess without severe complications, such as clear colon perforation and peritonitis.

2. Case report

A 23-year-old Japanese woman was admitted to our hospital because of increasing lower abdominal distention with dull pain. The patient had traveled to Singapore three years earlier and more recently had spent approximately eight months in Taiwan. High fever, watery diarrhea, and severe abdominal pain developed five weeks before hospital admission. One week later, the above symptoms improved without specific medication; however, lower abdominal distention with dull pain newly and gradually developed, without fever. After returning to Japan, she was admitted to a hospital because of increasing abdominal distention. Abdominal plain computed tomography revealed a large mass spreading from the lower abdominal wall to the pelvic retroperitoneal space. Although the C-reactive protein level decreased with antibiotic therapy, a repeat computed tomography revealed that the size of the mass had increased, so she was transferred to our hospital. The clinical course of this patient is shown in Fig. 1.

On admission, her temperature was 36.2 °C, pulse 109 beats per minute, blood pressure 94/63 mmHg, respiratory rate 14 breaths per minute, and oxygen saturation 98% (room air). The abdomen was distended with a large, tender palpable mass occupying the entire lower left side. She was a social drinker and did not smoke. Laboratory data (Table 1) revealed a white blood cell count of 13,640/μL, 71% neutrophil, a C-reactive protein level of 22.4 mg/L. Liver enzyme levels were normal. Serologic tests by immunofluorescence assay for the detection of immunoglobulin G and immunoglobulin M antibodies to *E. histolytica* were negative (<100 titer)

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http://dx.doi.org/10.1016/j.jiac.2017.04.010
1341-321X/

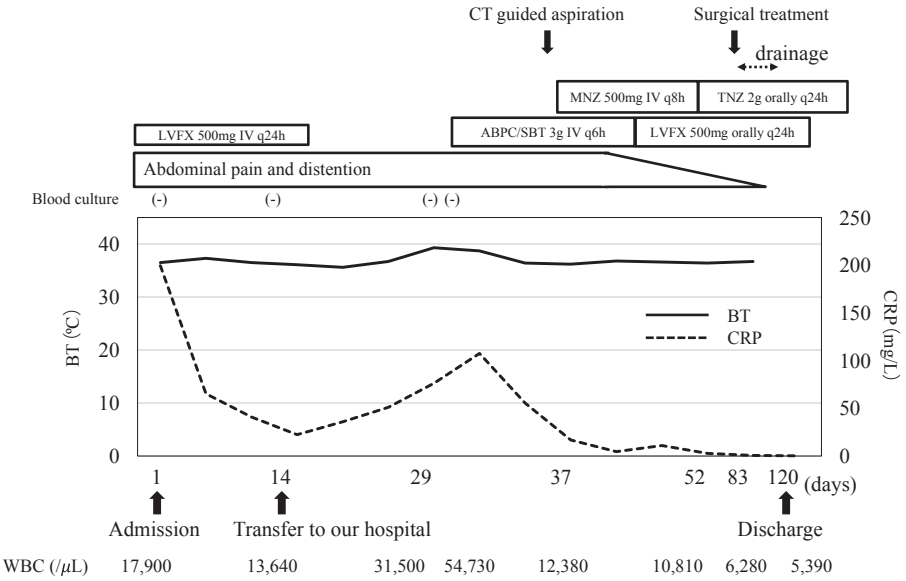

Fig. 1. Clinical course LVFX: levofloxacin, ABPC/SBT: ampicillin/sulbactam, MNZ: metronidazole, TNZ: tinidazole, IV: intravenous injection, BT: body temperature, CRP: C-reactive protein, CT: computed tomography.

Table 1
Laboratory data on admission of our hospital.

Complete blood counts	
White-cell count	13,640/μL
Differential count	
Neutrophils	71%
Lymphocytes	15%
Monocytes	11.5%
Eosinophils	1.5%
Basophils	0.5%
Erythrocyte count	344 × 10^4/μL
Hemoglobin level	102 g/L
Hematocrit	32.6%
Platelet count	53.5 × 10^4/μL
Serum chemistry test	
Total protein	81 g/L
Albumin	39 g/L
Total bilirubin	3 mg/L
Aspartate aminotransferase	19 U/L
Alanine aminotransferase	12 U/L
Lactate dehydrogenase	170 U/L
Alkaline phosphatase	231 U/L
γ-glutamyl transpeptidase	32 U/L
Creatine kinase	14 U/L
Blood urea nitrogen	80 mg/L
Creatinine	5.1 mg/L
Ferritin	1240 ng/mL
Glucose	950 mg/L
C-reactive protein	22.4 mg/L
Interferon-γ releasing test	Negative
Human immunodeficiency virus antibody/antigen	Negative
Serological test for syphilis, rapid plasma regain card agglutination test	+ (1.1 RU)
Treponema pallidum hemagglutination test	Negative
Fluorescent treponemal antibody absorption test-immunoglobulin M	Negative
Hepatitis B surface antigen	Negative

both on days 22 and 69. Abdominal enhanced computed tomography revealed the spread of encapsulated fluid collections with enhanced wall from the lower abdominal wall to the pelvic retroperitoneum (diameter 13 cm × 11 cm) (Fig. 2). Magnetic resonance imaging, after the administration of gadolinium, revealed the mass at low signal intensity on theT1-weighted image, at high signal intensity on the T2-weighted image, and as partially restricted diffusion on the axial diffusion-weighted image and apparent-diffusion coefficient map. These findings indicated the presence of mucus or pus. Three microscopic examinations of stool specimen, using a concentration technique, were negative. Colonoscopy and biopsy revealed no abnormal findings.

On the 29th day after admission, high fever developed with a white blood cell count of 31,500/μL and a C-reactive protein level of 51.1 mg/L. Blood and urine cultures, including for acid-fact bacteria, were negative. Considering her initial symptoms, such as fever, diarrhea, and abdominal pain, and clinical course, pelvic abscess induced by gastritis was suspected. On the 31st day, the administration of ampicillin/sulbactam was started, with improvement of fever. However, the abdominal symptoms and increase of inflammatory parameters continued.

On the 33rd day, needle aspiration under computed tomography guidance was performed. About 100 mL of liquid was aspirated. The aspirated fluid was pale yellow, slightly cloudy, and serous. Microscopic tests for bacteria, including acid-fast bacteria, were negative. The tests did not show the presence of amoeba on Periodic acid-Schiff stain or Papanicolaou stain. They also revealed no evidence of malignancy. Cultures of the fluid, including for acid-fact bacteria, were negative. Aspirated fluid was sent to a commercial laboratory (LSI Medience Corporation, Tokyo, Japan) for microscopic examination of the fresh specimen, revealing 5–6/field trophozoites of *Entamoeba* ingesting erythrocytes with motile activity, which led to the diagnosis of amebiasis (Fig. 3).

On the 36th day, the administration of metronidazole, 1500 mg/day, was started, with an improvement of the abdominal symptoms