

Travel history can make the difference

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Abstract

Entamoeba histolytica infections are rare in developed countries such as Belgium. A 53-year-old female patient presented with 10 days of fever and mild persisting pain in the right hypochondriac despite 6 days of antibiotic therapy. The anamnesis further revealed that the patient was born in Colombia and visits her native country on a regular basis. An abdominal CT-scan demonstrated a large hepatic abscess of 10×8 cm. The diagnosis of *Entamoeba histolytica*-infection was confirmed with real-time PCR (RT-PCR) from the aspirated material of the abscess. Remarkably, a half year ago, this patient also presented to the gastro-enterology consultation with intermittent rectal bleeding, loose stools and abdominal discomfort. Rectosigmoidoscopy at that time showed sigmoiddiverticulosis and biopsies were taken. RT-PCR on this material was performed during this second episode and was positive for *E. histolytica*, confirming an episode of amoebic colitis a half year prior to the discovery of the liver abscess. (*Acta gastroenterol. belg.*, 2020, 83, 334-336)

Key words : entamoeba, liver abscess, colitis.

Introduction

Entamoeba histolytica infects 10 % of the world's population, resulting in 50 million cases of invasive amoebiasis (colitis and liver abscess) and 100.000 deaths annually (1). However, in developed countries amoebiasis is rare and almost exclusively seen in recent immigrants, travelers to an endemic area, and institutionalized or immunocompromised individuals (2). Amoebic colitis may present with fever, abdominal pain, watery or bloody diarrhea. The diagnosis of amoebic colitis can be difficult because the gastrointestinal symptoms are nonspecific and can mimic other colonic diseases (3). Amoebic liver abscesses occur in fewer than 1% of *E. histolytica* infections (4).

Case history

A 53-year-old female patient presented to the emergency department with 10 days of fever (up to 40°C) and mild pain in the right hypochondriac. There were no relevant antecedents in the medical history, besides an episode of diverticulitis half a year ago. The general practitioner had already prescribed amoxicillin-clavulanate for six days, without amelioration. On physical examination, the patient had a heart rate of 108 beats/min and blood pressure of 111/69 mmHg. Abdominal examination revealed light diffuse abdominal tenderness, hepatomegaly and absence of intra-abdominal

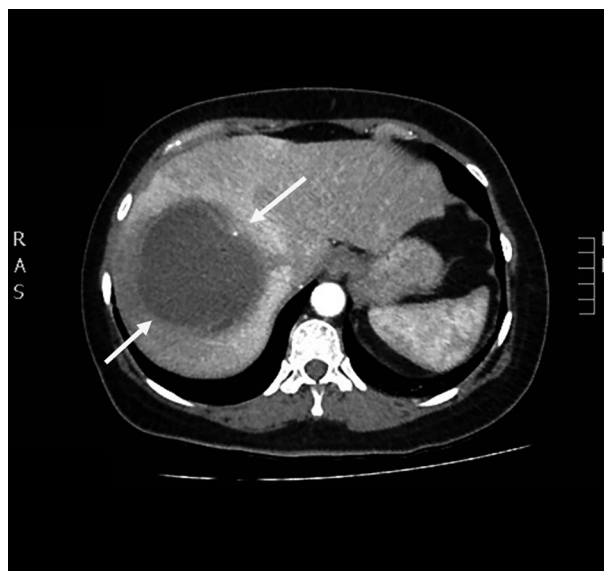


Figure 1. — Liver abscess in segment 8 with a diameter of 8x10 cm

masses. Blood tests showed C-reactive protein 364 mg/L (<5.0), hemoglobin 10.0 g/dL (12.0-16.0), leucocytes count 19950/μL (4000-10000), total bilirubin 1.3 mg/dL (0.2-1.0), lactate dehydrogenase (LDH) 204 U/L (135-250), aspartate aminotransferase (AST) 52 U/L (<32), alanin aminotransferase (ALT) 85 U/L (<33), gamma-glutamyltransferase (γ-GT) 112 U/L (5-39) and alkaline phosphatase 334 U/L (35-104). The anamnesis further revealed that the patient was born in Colombia and had visited her native country 2 months before admission and also 1 year ago. Since fever and right hypochondrium pain persisted despite 6 days of antibiotic therapy, an abdominal CT-scan was performed, which demonstrated a large hepatic abscess of 10×8 cm (Figure 1).

A provisional diagnosis of invasive amoebiasis was made. The patient was admitted to the gastro-enterology ward, with only supportive therapy. The next day, percutaneous drainage of the abscess revealed a thick, bloody, brown liquid. Cultures of blood and the aspirated

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material showed no growth and stool culture showed no bacterial pathogens. No parasites were visualized during microscopy of the faecal sample with lugol staining. The diagnosis of *Entamoeba histolytica*-infection was confirmed with real-time PCR (RT-PCR) from the aspirated material. A high ELISA antibody titer for *E. histolytica* was also present (3.83, reference value <1). The patient was treated with 7 days of metronidazole (750 mg per oral three times per day) followed by seven days of paromomycin (500 mg per oral three times per day). Her symptoms resolved rapidly, and the patient had completely recovered at the end of the treatment. Follow-up ultrasonography after 7 days of adequate antibiotic treatment showed a residual liver abscess of 5.4×5.6 cm.

Remarkably, a half year ago, this patient also presented to the gastro-enterology consultation with intermittent rectal bleeding, loose stools and abdominal discomfort for one month. Rectosigmoidoscopy (up to 25 cm) at that time showed sigmoiddiverticulosis and patchy erythema. Because of uncertainty about a possible diverticulitis at the time of procedure, progression was made only up to 25 cm. An abdominal CT was performed, which showed thickening of the sigmoid. Therefore, diagnosis of a sigmoiddiverticulitis was made. Treatment with amoxicillin-clavulanate was prescribed for 10 days and a colonoscopy was performed 2 weeks later which showed residual diverticulosis, but no residual erythema. Biopsies of the caecum were taken. These showed only reactive (peri-ulcerous) changes in the mucosa of the colon. Since the patient's symptoms were resolved on follow-up consultation after the colonoscopy, no further investigations were carried out. To further examine the possibility that these complaints were linked to her current *Entamoeba*-infection, the paraffin slides of the caecumbiopsy were sent to the reference laboratory for RT-PCR. The RT-PCR on this material was also strongly positive for *E. histolytica*, confirming that she already had an episode of amoebic colitis a half year prior to the discovery of the liver abscess.

Discussion

E. histolytica is a parasite that is transmissible by the fecal-oral route. Infections can range from asymptomatic to severe, causing fatal invasions of multiple organ systems. Asymptomatic infections are responsible for the continuous transmission of the parasite because numerous cysts are produced and passed in feces (5). When the parasite reaches the small intestine, excystation occurs, releasing trophozoites, which then penetrate the colonic mucosa. There they can cause flask-shaped colonic ulcerations (4). Symptoms in this stage can mimic diverticulitis or appendicitis, as was demonstrated in a recent case report (6). After penetration of the colonic mucosa, they can gain access to the portal venous system to infect the liver, brain, lungs, pericardium and other metastatic sites. In the liver, the amoebae generate an

inflammatory reaction and cause necrosis of hepatocytes, producing an abscess (4).

Amoebic liver abscess is 10 times more prevalent in men compared to women, and is a rare disease in children. Approximately 80 percent of patients with an amoebic liver abscess present with symptoms that develop relatively quickly (typically within two to four weeks), including fever, cough, and a constant, dull, aching abdominal pain in the right upper quadrant or epigastric region. Involvement of the diaphragmatic surface of the liver may lead to right-sided pleural pain or referred shoulder pain (7). Some individuals presenting with an amoebic liver abscess have concurrent amoebic colitis, but more often they have no bowel symptoms and stool microscopy is negative for *E. histolytica* trophozoites and cysts, as was the case in our patient (8).

Complications of amoebic liver abscess may arise from rupture of the abscess with extension into the peritoneum, pleural cavity, or pericardium. Extrahepatic amoebic abscesses have occasionally been described in the lung, brain and skin and presumably result from hematogenous spread.(7)

Diagnostic techniques include microscopy, antigen detection, serology, molecular techniques and colonoscopy with histological examination. The sensitivity of microscopy of fresh stool samples is poor (60%) and false-positive results can occur due to misidentification of macrophages as trophozoites, polymorphonuclear cells (PMNs) as cysts (especially when lobed nuclei of PMNs break apart), and presence of other *Entamoeba* species (9). In the appropriate clinical setting, a reliable diagnosis can often be made serologically. However, the level of anti-amoebic antibodies remains elevated in serum for many years, which makes it impossible to distinguish past from current infection (9). Antigen detection using fecal ELISA is another diagnostic tool, which has proven to be useful in the developing world. However, the sensitivity of the fecal antigen test is about 100 times less than that of PCR, and in addition, several studies have highlighted low specificity because of cross-reaction with other *Entamoeba* species. The development of molecular tools, including (real-time) PCR, to detect *E. histolytica*, *E. dispar* and *E. moshkovskii* DNA in stool or liver abscess samples has led to major advances in making an accurate diagnosis during recent years (9).

The main differential diagnosis to consider is pyogenic liver abscess, which is more common overall than amoebic liver abscess in nonendemic settings. Pyogenic abscesses, unlike amoebic liver abscesses, have no sex bias, are more likely to be multiple, occur in older individuals with underlying hepatobiliary comorbidities and are generally associated with positive blood or aspirate bacterial cultures (4).

Lessons learned from this case report include the importance of a detailed travel examination. *E. histolytica* should be considered in new-onset colitis, especially in individuals who have travelled to endemic areas. Timely recognition of variable presentation of invasive

amoebiasis is vital, considering the curable nature of this disease and potentially fatal outcome of untreated abscesses.

Conflict of interest

The authors have no conflict of interest to declare.

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