

Giant Liver Abscess with Atypical Clinical Presentation: Case Report.

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Abstract

Background. Amebiasis is caused by the protozoan *Entamoeba histolytica*. This parasite exists in 2 stages: a cyst, which is the infective form, and a trophozoite stage, which is the form that causes invasive disease. Globally,

around 500 million people are infected annually. **Clinical case.** A 73-year-old female upon arrival at the emergency department with laboratories without alterations. Relevant ultrasound reports chronic gallbladder lithiasis not exacerbated and significant gastric distension. A liver abscess is suspected, for which an assessment is requested by the interventional radiology service for percutaneous drainage, commenting that it is not a candidate because, due to ultrasonographic characteristics in the scan before the puncture, they suspect a hydatid cyst and the puncture site is proximal to the blood vessels. It is programming exploratory laparotomy with the following findings: enlarged liver, firm adhesions to the posterior wall of the stomach and the diaphragm, a hepatic abscess is drained, obtaining 2000 mL of thick purulent material, it is marsupialized and culture is taken with a negative report to bacterial development at 48 hours. **Discussion.** It is a 44-year-old male with intense abdominal pain in the right upper quadrant, generalized jaundice, tachycardia, and fever; the hepatic edge is palpated 5 cm below the costal margin, positive Murphy's sign. **Laboratory studies:** direct hyperbilirubinemia, elevation of alkaline phosphatase and transaminases, leukocytosis, a negative viral panel for hepatitis, and positive antibodies for *Entamoeba histolytica*. The abdominal computed tomography showed a hypodense lesion measuring 15 by 12.1 cm in the right hepatic lobe.

Keywords: liver abscess; amebiasis; *Entamoeba histolytica*; Open surgery.

BACKGROUND

A liver abscess (HA) is a collection of pus surrounded by a fibrous capsule that, depending on its etiology, can be pyogenic or amoebic. It occurs with low frequency in first-world countries, and there are between 5 and 22 cases per 100,000 hospital admissions with a predominance of males between the third and sixth decade of life. Mortality has shown a reduction of 50 to 10% after the use of percutaneous intervention guided by ultrasonography or tomography.

The risk factors associated with amebic liver abscess (AHA) are the male gender, the third and fifth decades of life, alcoholism, oncological diseases, immunosuppression, and living in endemic areas, among others. Despite being an infectious pathology with accessible diagnostic methods and management options, HA continues to be a cause of high morbidity and mortality in developing countries. In the last century, there has been a decrease from 75-80% to 10-40% in mortality due to advances specifically in the area of antibiotics and interventional processes; however, it should be taken into account that timely diagnosis would contribute to improving the prognosis and mortality [1].

Amebiasis is a common infection in developing countries, and an amebic liver abscess is its most common major extraintestinal manifestation, caused by *Entamoeba histolytica*, *Entamoeba dispar*, *Entamoeba moshkovskii*, and *Entamoeba Bangladeshi*, indistinguishable from one another by microscopy. It manifests with fever, pain in the right hypochondrium, fatigue, and hyporexia. The most exposed patients are patients in a state of immunosuppression, diabetes mellitus, chronic alcoholism, and malnutrition. In general, mortality is low, between 0% and 5% if medical therapy is implemented on time. The most

common complication is rupture into adjacent organs. It is associated with high mortality if not treated on time [2]

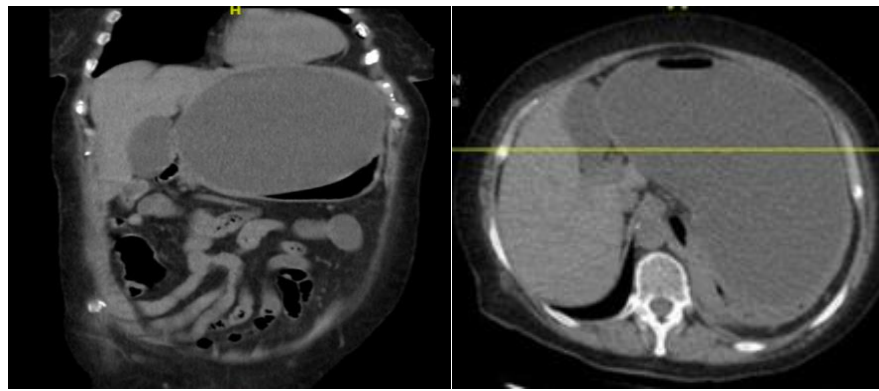
Amebiasis is caused by the protozoan *Entamoeba histolytica* (*E. histolytica*). This parasite exists in 2 stages: a cyst, which is the infective form, and a trophozoite stage, which is the form that causes invasive disease. Globally, around 500 million people are infected annually. It is common in poor countries due to socioeconomic conditions and sanitation levels; in most cases, it is asymptomatic, but it can manifest as amoebic dysentery, amoebic liver abscess, and occasionally it can affect the lungs, heart, and brain [3].

Within the differential diagnosis of amoebic liver, the abscess is mainly that of pyogenic origin that can be found as microabscesses (< 2 cm) or macroabscesses (> 2 cm), and can be observed as a uniloculated, homogeneous cavity with well-defined borders or have a similar appearance. heterogeneous, associated with the presence of microabscesses that appear grouped with *Escherichia coli* or enteric organisms, while diffuse involvement with multiple microabscesses distributed in both lobes, to staphylococcal infections associated with septicemia. Likewise, the visualization of a single macroabscess with a solid or multiloculated appearance has been linked to *Klebsiella pneumoniae*. Other imaging diagnoses to take into account are previously treated metastases, liver infarct areas, hydatid cysts, and biliary cystadenocarcinoma, among others. In the management of liver abscesses, most patients respond favorably to conservative management, with metronidazole being the cornerstone of treatment, except in cases where there is diagnostic doubt, poor response to treatment after 7 days, high risk of imminent rupture (lesions > 5 cm), abscesses located in the left lobe (due to the high risk of the abscess leading to the pericardium) or in cases of proven bacterial superinfection, it could be complemented with surgical treatment [4].

CLINICAL CASE

A 73-year-old female with the following significant history: long-term hypertension, vascular dementia, osteoarthritis, positive overcrowding, and contact with rams, rabbits, chickens, and turkeys, who began her current condition three weeks before admission, with nausea, vomiting, and sporadic pain in the epigastrium that gave way to the administration of analgesics, he went to his family medicine clinic where they began symptomatic management and requested an ultrasound which reported splenomegaly (21 x 11 x 17 cm), non-aggravated gallbladder lithiasis and right renal lithiasis, and laboratories control in which grade II anemia stands out.

24 hours before her admission, she presented vomiting of gastro-alimentary content, abdominal pain in a belt, and total intolerance to the oral route, for which she was referred to a second-level hospital. Upon arrival at the emergency department, she was evaluated by general surgery with laboratories without alterations. Relevant and new ultrasound which reports chronic gallbladder lithiasis not exacerbated and significant gastric distension is indicated to test tolerance to the oral route and referral to the outpatient clinic for follow-up. Displacement and crushing of the gastric cavity of 198x138x158 mm or 2259 mL to rule out gastric fistula (Fig. 1)

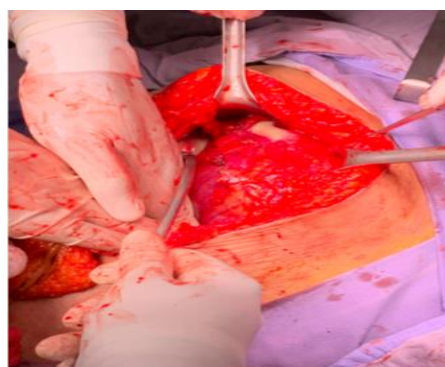


It is reassessed by general surgery requesting a diagnostic panendoscopy which reports extrinsic compression that occupies approximately 80% of the gastric cavity (Fig. 2).



A liver abscess is suspected, for which an assessment is requested by the interventional radiology service for percutaneous drainage, commenting that it is not a candidate because, due to ultrasonographic characteristics in the scan before the puncture, they suspect a hydatid cyst and the puncture site is proximal to the blood vessels.

It is reassessed by general surgery, programming exploratory laparotomy with the following findings: enlarged liver, firm adhesions to the posterior wall of the stomach and the diaphragm, the hepatic abscess is drained, obtaining 2000 mL of thick purulent material, it is marsupialized and culture is taken with a negative report to bacterial development at 48 hours (Fig. 3)



During her stay on the surgical floor, she had an adequate post-surgical evolution until she was discharged due to improvement with follow-up in the outpatient clinic.

DISCUSSION

A liver abscess usually presents as a single abscess, most commonly invading the right lobe of the liver, however, multiple abscesses can occur. The two most common types of liver abscesses, pyogenic and amebic, have a global distribution; however, in developed countries, pyogenic liver abscesses (PLAs) are far more prevalent, whereas amebic liver abscesses (ALA) reign supreme in developing regions. Fungal liver abscesses are extremely rare, accounting for less than 2% of cases. At present we know that a considerable portion of PLAs is formed via bowel leakage that travels to the liver through the portal vein or portal pyemia. However, the most common cause of PLA is by far direct spread from biliary disease, with cholangitis being the major identifiable etiology. Other precipitating factors include other intraabdominal infections, such as pancreatitis or diverticulitis, and trauma [5].

An amebic liver abscess (ALA) caused by *Entamoeba histolytica* is usually diagnosed based on its clinical symptoms, medical imaging abnormalities of the liver, and serological tests, the most common being the enzyme-linked immunosorbent assay (ELISA). For more than three decades, no investigation has evaluated the diagnostic performance of immunoglobulin G (IgG) subclasses in the serodiagnosis of ALA.

Herein, we assessed the efficiencies of anti-amebic IgG and IgG subclasses for diagnosing ALA. ELISA targeting IgG1 can provide valuable information to clinicians in differentiating ALA from other parasitic diseases, cancers, cirrhosis, and viral hepatitis [6].

In amebic liver abscesses, more than 95% of the serological test will give a positive result. Abdominal ultrasound can accurately detect liver abscesses; however, computed tomography (CT) may be more accurate with a sensitivity approaching 99%. For handling empyema, the thoracostomy tube and thoracoscopy are used, which have proven to be useful in all stages of empyema [7, 8].

Factors associated with poor prognosis are multiple abscesses, abscess greater than 500 mL, the elevation of the right hemidiaphragm or pleural effusion, encephalopathy, bilirubin > 3.5 mg/dL, hemoglobin < 8 g/dL, albumin < 2 g/dL, and type 2 diabetes mellitus [9].

Liver abscess is a rare infectious disease caused by microbes invading the liver parenchyma through the blood or bile duct. Though the causative pathogens of liver abscesses are different within the regions, in western countries 80 % of liver abscesses are bacterial. *Klebsiella pneumoniae* and *Escherichia coli* are the most common pathogen of liver abscesses. The mortality rate of pyogenic liver abscesses is high as 15%, thus adequate diagnosis and treatment are needed. The treatment includes antibiotics and abscess drainage, which is believed to contribute to a reduction of the abscess cavity size and a decline in mortality rate [10].

Over the past decades, PCD, instead of surgery, has been viewed as the preferred treatment modality in the management of liver abscesses. PCD, as a minimally invasive procedure, is both therapeutic and helps in finding microbiologic results. Recent studies have suggested PCD is

safe and effective even in giant PLA, regardless of abscess complexity and/or multiplicity. Therefore, PCD has been widely performed in the clinical treatment of PLA [11].

Telich-Tarriba et al. [12], present a 44-year-old male with intense abdominal pain in the right upper quadrant, generalized jaundice, tachycardia, and fever; a hepatic edge is palpated 5 cm below the costal margin, positive Murphy's sign. Laboratory studies revealed: direct hyperbilirubinemia, the elevation of alkaline phosphatase and transaminases, leukocytosis at the expense of neutrophils, a negative viral panel for hepatitis, and positive antibodies for *Entamoeba histolytica*. The abdominal computed tomography showed a hypodense lesion measuring 15 by 12.1 cm in the right hepatic lobe. Treatment with analgesics and a double antibiotic regimen was started. The patient underwent laparoscopic drainage of the liver abscess through a single port, aspirating 1200 cc of chocolate-like content, and cavity lavage was performed. On the fourth day of hospitalization, the patient was discharged without complications. The treatment of an amebic liver abscess is directed towards the eradication of the infectious agent and the abscessed cavity, since it is a clinical entity that can have severe complications, especially rupture. Single-port laparoscopy has proven to be a safe and effective alternative in the treatment of patients who require drainage of amebic abscesses. Although in our case open surgery was performed as it was our only option with the same results for the patient.

Ethical Approval

Not applicable, because this article does not contain any studies with human or animal subjects.

Informed Consent

Not applicable, because this article does not contain any studies with human or animal subjects.

Trial Registration

Not applicable, because this article does not contain any clinical trials.

Consent for publication. Not applicable.

Conflict of interest. None Declared.

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