

Acalculous Cholecystitis Due to *Histoplasma capsulatum* in a Patient With HIV Infection

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Abstract

Although acalculous cholecystitis typically occurs in critically ill individuals, it has been described in patients with HIV infection. Recognition of AIDS-related acalculous cholecystitis is important for gastroenterologists to provide optimal therapy, since many different opportunistic pathogens may be involved. *Histoplasma capsulatum* causes a wide spectrum of infectious sequelae, including disseminated histoplasmosis in patients with HIV infection, but biliary tract involvement has been described infrequently. We present a case of acalculous cholecystitis caused by *H. capsulatum* in a patient with HIV infection.

Introduction

HIV-infected individuals are at increased risk of developing opportunistic infections during advanced stages of immunosuppression, including biliary tract involvement manifesting as AIDS cholangiopathy or acalculous cholecystitis. Acalculous cholecystitis typically occurs in patients with comorbid medical conditions.¹⁻³ *Histoplasma capsulatum* is a dimorphic fungus that can cause disseminated histoplasmosis in patients with AIDS.⁴ *H. capsulatum* can involve any organ system by hematogenous dissemination, including the gastrointestinal tract and, less commonly, the biliary tract.⁵

Case Report

A 38-year-old man with HIV infection presented with 7 days of fever, diarrhea, and weight loss. Two days later, the patient developed right upper quadrant (RUQ) pain associated with anorexia. He was diagnosed with HIV infection 10 years earlier, and was non-adherent to antiretroviral therapy. He was born in Guyana and immigrated to the United States 20 years earlier. He denied recent travel. On physical examination, the patient appeared chronically ill, his temperature was 100.8°F, blood pressure 101/67 mm Hg, pulse 98 beats per minute, respiration 20 breaths per minute, and oxygen saturation 98% on room air. His abdomen was distended, with RUQ tenderness and positive Murphy's sign.

Laboratory studies revealed leukocyte count 2,800 cells/mm³, hemoglobin 9.5 g/dL, platelets 11,000/mm³, sodium 133 mmol/L, potassium 3.5 mmol/L, bicarbonate 19 mEq/L, urea nitrogen 9.0 mg/dL, creatinine 0.6 mg/dL, total bilirubin 1.6 mg/dL, direct bilirubin 0.9 mg/dL, alkaline phosphatase 141 U/L, AST 79 U/L, and ALT 77 U/L. His CD4 count was 4 cells/mm³. An abdominal ultrasound revealed a distended gallbladder with thickening of the wall, no gallstones or bile duct dilation, and mild hepatosplenomegaly. Urine antigen testing for *H. capsulatum* (MVista[®] histoplasma quantitative antigen test, Quest Diagnostics, Madison, NJ) was positive. An x-ray of the chest was normal, and blood cultures showed no growth. The patient was started on intravenous amphotericin B for disseminated histoplasmosis, and underwent laparoscopic cholecystectomy. Histopathological evaluation

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of the gallbladder showed an inflammatory reaction associated with intracellular yeasts in macrophages, and fungal culture of the specimen grew *H. capsulatum*. After receiving amphotericin B for 2 weeks, the patient was started on oral itraconazole. Antiretroviral therapy with emtricitabine, tenofovir, and efavirenz was initiated 4 weeks later.

Discussion

Acalculous cholecystitis typically develops in critically ill patients, such as those with sepsis, burn injury, and multi-organ failure.¹⁻³ The causative agents of acalculous cholecystitis reported in patients with AIDS include cytomegalovirus (CMV), *Cryptosporidium*, *Isospora belli*, and microsporidia, though etiologic agents may not be identified.⁶⁻⁹ In a study of 107 patients with AIDS who underwent cholecystectomy, opportunistic pathogens identified include microsporidia (8 cases), CMV (6 cases), *Cryptosporidium* (8 cases), and CMV plus *Cryptosporidium* (15 cases).⁹

H. capsulatum is a well-known opportunistic pathogen in HIV-infected individuals. *H. capsulatum* infrequently involves the biliary tract in patients with advanced stages of HIV infection; AIDS cholangiopathy caused by *H. capsulatum* has been described,^{10,11} and a case of acalculous cholecystitis due to *H. capsulatum* has been reported in a patient with AIDS.¹² The recognition of *H. capsulatum*-related acalculous cholecystitis is of clinical importance since acalculous cholecystitis as a manifestation of disseminated histoplasmosis necessitates systemic antifungal therapy in addition to cholecystectomy, as described in our case.

Disclosures

Author contributions: T. Shinha wrote the manuscript and is the article guarantor. G. Zabarsky was the advising attending on the case.

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