Tuberculous Acalculous Cholecystitis: A Case Report

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INTRODUCTION

Opportunistic infection of the bile duct in patients with acquired immunodeficiency syndrome (AIDS) was first reported in 1983. Biliary cryptosporidiosis associated with extrahepatic obstruction was noted in all cases. Later reports described acalculous cholecystitis secondary to infection with cytomegalovirus, Campylobacter, Isospora belli and Candida albicans. Cholangitis may be caused by Cryptosporidium, microsporidia, cytomegalovirus, and C. albicans. Tuberculosis has been previously reported as a rare cause of acalculous cholecystitis and cholangitis. We present our recent experience with a patient with AIDS who was found to have tuberculous acalculous cholecystitis with cholestasis.
CASE REPORT

A 42-year-old Indian male was admitted with an eight-day history of high-grade fever with chills, right-upper abdominal pain, and progressive jaundice. He was diagnosed with AIDS five years previously, with CD4 count of 50 cells/mL and HIV RNA of 200,000 copies/mL. He was treated with antiretroviral drugs (d4T, 3TC and efavirenz) but lost to follow-up six months prior to admission. His temperature was 38.5°C and blood pressure of 120/80 mmHg with a pulse rate of 108/minute. He had scleral icterus and right-upper abdominal tenderness with hepatomegaly. His complete blood count showed white blood cell count of 13,310/mm³ (80% neutrophils), hemoglobin of 7.6 g/dL, and platelet count of 208,000/mm³. Total bilirubin reached a peak of 13.2 mg/dL, with a direct bilirubin of 11.4 mg/dL. The alkaline phosphatase was 1,927 IU/L (normal 98-279 IU/L), aspartate aminotransferase 75 IU/L (normal < 38 IU/L), alanine aminotransferase 53 IU/L (normal < 38 IU/L). Other blood chemistries and chest radiography were normal. Abdominal ultrasonography showed homogenous echogenicity of an enlarged liver with distended gallbladder. The gallbladder wall was thickened (5 mm) with pericholecystic fluid collection (Figure 1). The sonographic Murphy’s sign was positive. A diagnosis of acalculous cholecystitis was made, and he was received intravenous ceftriaxone 1 g every 12 hours and metronidazole 500 mg every eight hours.

On the second day of admission, he underwent a cholecystectomy and was found to have a distended, tense, inflamed gallbladder without stone. The common bile duct was explored, and a T-tube cholangiography was performed but detected no abnormalities. A biopsy was taken from the enlarged cystic duct and portal lymph nodes. Postoperatively, the patient did not improve and still had high-grade fever. The patient then received intravenous ceftazidime and metronidazole. On the seventh day of admission, he developed upper gastrointestinal bleeding and acute respiratory distress syndrome, and was on ventilator support and received intravenous dopamine. He expired after ten days of hospitalization. The histopathological study demonstrated subacute cholecystitis with caseous granulomatous inflammation of the cystic duct, gallbladder wall (Figure 2a, 2b), and portal lymph nodes. Acid-fast staining revealed the presence of acid-fast bacilli in cystic duct, gallbladder wall (Figure 3), and adjacent lymph nodes. Blood culture eventually grew Mycobacterium tuberculosis.

Figure 1. Well distended gallbladder with thickened wall (5 mm) and pericholecystic fluid collection.
DISCUSSION

Tuberculosis is the most common opportunistic infection in patients with AIDS in Asia and Africa. Although involvement of the liver is common, tuberculosis only rarely infects the biliary system. Tuberculous acalculous cholecystitis is a rare disease with only a small number of case reports. Early case reports showed that tuberculous acalculous cholecystitis may be due to the obstruction from the granulomatous tissue. It may be due to the secondary spread from the distant foci or direct extension from neighborhood lesions. Another study suggested that the absence of tubercles on gallbladder mucosa indicates hematogenous or lymphatic spreading, whereas tubercles mainly located on the mucosa suggest canicular dissemination. Tubercles scattered over the serous layer of the gallbladder suggest spreading from the peritoneal cavity. Our case had cystic-duct granuloma which may cause obstruction. This mechanical obstruction combined with nonspecific
inflammation may lead to the disappearance of bile acid and decrease the resistance against tuberculous infection. 18,21

AIDS-related cholangitis may be caused by many organisms9-15, and is frequently associated with cholecystitis. 15 The cause of the abnormalities is uncertain.10,13,14 A previous study described patients with AIDS presenting with mycobacterial infection13, similar to our case. Cholestasis in tuberculosis may result from the organism infiltrating into the liver or the spreading of caseous material into the bile duct.19,20 This may cause bile stasis and the spread of tuberculous infection.

Laparoscopic cholecystectomy should be considered for the treatment of tuberculous acalculous cholecystitis in patients with AIDS.14,22-25 Percutaneous cholecystostomy is increasingly recognized as an acceptable therapy for acute acalculous cholecystitis, especially in critically ill patients.26 A previous study reported a successful treatment of patients with AIDS by percutaneous cholecystostomy.27 Quadruple therapy (using four anti-tuberculous drugs) is recommended after surgical intervention, generally not for less than one-year.17,18,28 For patients with obstructive jaundice, in addition to anti-tuberculous treatment, biliary drainage should be performed either by stent insertion during endoscopic retrograde cholangiopancreatography, by percutaneous transhepatic biliary drainage, or by surgical drainage whenever feasible.28

In summary, a cholecystitis in AIDS may be caused by many pathogens. Tuberculous acalculous cholecystitis with cholestasis in a patient with AIDS is a rare condition which may be lethal. This case report suggests that tuberculosis should be included in the differential diagnosis of acalculous cholecystitis, particularly in immunocompromised patients.

References
12. Ducrueux M, Buffet C, Lamy P, et al. Diagnosis and


