CASE REPORT

Respiratory failure and acalculous cholecystitis in a patient with AIDS and disseminated tuberculosis: masking effect of fluoroquinolone monotherapy and immune restoration syndrome

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Summary The clinical presentation of Mycobacterium tuberculosis infection varies in patients with AIDS. We report a case of disseminated tuberculosis in an AIDS patient. The initial manifestation was masked by fluoroquinolone monotherapy, and subsequently complicated by acalculous cholecystitis and immune restoration syndrome after antiretroviral therapy.

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Introduction

Early diagnosis of tuberculosis among AIDS patients is hard to achieve because of varied clinical presentations. Moreover, fluoroquinolone as a common agent for bacterial pneumonia might mask and delay the diagnosis of tuberculosis in endemic areas. The article also talked about immune restoration...
syndrome after institution of anti-tuberculosis therapy. Those points mentioned above were of the very clinical importance for AIDS care.

Case report

A 36-year-old homosexual male presented with a dry cough and prolonged fever for three weeks. He was diagnosed with an HIV-1 infection during initial admission. Laboratory examination showed a low CD4 T-cell count (77 × 10⁶/l) and a plasma HIV viral load of 12 900 copies of RNA/ml. Imaging studies, including a chest X-ray and computed tomography scan, did not detect any abnormality. Acid-fast stains of sputum smears were negative. A tuberculin skin test using the Mantoux method was non-reactive. Parenteral ofloxacin followed by oral ciprofloxacin was administrated concomitantly with antiretroviral therapy (ART; zidovudine, lamivudine and efavirenz) and co-trimoxazole as primary prophylaxis for Pneumocystis jiroveci infection. Blood cultures for common bacteria and fungi were sterile. After the above treatment, his fever abated and he was discharged within one week.

Five days later, he was re-admitted for generalized maculopapular skin eruptions and fever. He also complained of dry cough and frequent choking upon swallowing. Chest films revealed infiltrates over the right lower lobe (Figure 1A). Co-trimoxazole was discontinued and ART was shifted to a new regimen ( stavudine, didanosine and nelfinavir) for drug allergy. Ampicillin/sublactam and moxifloxicin were prescribed for pneumonia. The fever and skin lesions faded two days later, but the dry cough persisted. Acid-fast stains of three sputum specimens failed to find any pathogen. After a seven-day afebrile period, he experienced spiking fever and rigors again. A second tuberculin skin test remained non-reactive. A bone marrow study for worsened thrombocytopenia did not reveal evidence of malignancy and infection. Eighteen days after re-admission (after a total of 32 days ART), the patient complained of epigastralgia and nausea. Jaundice and elevated aminotransferases were noted. Abdominal sonography revealed a thickening of the gall bladder wall and positive Murphy’s sign. Laparoscopic cholecystectomy was performed the next day for acute cholecystitis. An edematous gall bladder was noted, but there was no stone inside the gall bladder or obstruction of the common bile duct.

He received ventilation support after an operation for bilateral pulmonary infiltrates with respiratory distress (Figure 1B). Acid-fast bacilli were detected in sputum samples. Anti-tuberculosis agents were given with prednisolone (0.3 mg/kg daily), in conjunction with ART, and the patient was weaned from the ventilator two days later. Five weeks after the operation, he was discharged uneventfully. The overall clinical course and management of this case is summarized in Figure 2. Mycobacterium tuberculosis was subsequently isolated from the bone marrow, gall bladder wall, sputum and blood.

Discussion

A clinical diagnosis of tuberculosis is mainly based on clinical suspicion, acid-fast stain and mycobacterial culture. Early diagnosis of tuberculosis in AIDS patients is well known to be difficult because of the unusual presentation. This case is an example of an M. tuberculosis (MTB) infection in an AIDS patients: a non-reactive tuberculin skin test, a positive sputum culture for MTB but without typical cavitation and upper lobe infiltrations in chest images, and frequent extra-pulmonary diseases.¹ ² In the era of highly active ART, active tuberculosis does not increase the mortality and morbidity of HIV-1-infected patients.³ ⁴ Early diagnosis and anti-tuberculosis therapy remain the cornerstones of limiting the spread of MTB.

Figure 1  (A) A chest PA, posteroanterior view revealed infiltrates over the right middle and lower lobes (arrowhead) when the patient was admitted. (B) Progression to bilateral pneumonia and respiratory failure with intubation and mechanical ventilation support on the 18th day of admission.
Gall bladder tuberculosis is a rare cause of acute acalculous cholecystitis. The patient presented acute cholecystitis as one of the manifestations of disseminated tuberculosis in an advanced stage of HIV infection. Most reported cases in the literature were not related to HIV infections, and often occurred in those with cholelithiasis and cystic duct obstruction. On the other hand, over 70% of patients with AIDS and cholecystitis presented acalculus cholecystitis. Moreover, a number of organisms, including cytomegalovirus, microsporidia, cryptosporidium and the M. avium complex, have been implicated in the etiology of opportunistic infections involving the gall bladder. Surgical therapy, either open or laparoscopic cholecystectomy, improved the outcome of these patients. According to the experience of this patient and previous reports, surgical cholecystectomy with anti-tuberculosis treatment could provide good chance of a cure for gall bladder tuberculosis in HIV-infected patients.

Fluoroquinolone (FQ) monotherapy for pulmonary tuberculosis is of great concern because initial FQ therapy achieves profound immunocompromised status. With respect to adjuvant anti-tuberculosis therapy, which balances the risk of developing IRS and getting new opportunistic infections due to the immunocompromised status. In conclusion, M. tuberculosis infection should be kept in mind for the diagnosis of AIDS patients who present fever of unknown origin in endemic areas. Empirical FQ treatment should be avoided, unless tuberculosis can be excluded. Conflict of interest: No conflict of interest to declare.

References


