Acute Tuberculosis Cutis Miliaris Disseminata in a Patient with Acquired Immune Deficiency Syndrome

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INTRODUCTION

Mycobacterium tuberculosis infection is a major public health problem in a developing country.[1] It is commonly associated with immunosuppressed patients, especially those with acquired immunodeficiency syndrome (AIDS). It was reported that up to one third to one half of human immunodeficiency virus (HIV) infected patients were infected with *M. tuberculosis*.[2] Among extrapulmonary tuberculosis cases, cutaneous tuberculosis accounts for 1.5%, although tuberculosis cutis miliaris disseminatais an unusual presentation.[3,4] We, herein, describe a patient who was living with AIDS and also diagnosed with tuberculosis cutis miliaris disseminata based upon dermatologic findings.

Keywords: Cutaneous, disseminata, immunodeficiency, tuberculosis

Siriraj Med J 2013;65:55-57
E-journal: http://www.sirirajmedj.com

CASE REPORT

A 38-year-old Thai woman with AIDS presented to the hospital with a 3-month history of lower grade fever, chronic productive cough, weight loss and a 2-day history of diarrhea and asymptomatic rashes. She had recently been diagnosed with cryptococcal meningitis and had been treated with a course of intravenous Amphotericin B, and then, switched to Fluconazole 600 mg per day orally for secondary prophylaxis. Due to her poor compliance, antiretroviral drugs were discontinued for one month after the initiation of the treatment. After that, she did not receive any antiretroviral medications.

Upon examination, her body temperature was 38.5ºC. She was moderately pale. Oral thrush and oral hairy leukoplakia were also noted. Chest examination demonstrated the decrease of breath sound with crepitation and rhonchi at her right lung. Dermatological examination revealed generalized discrete erythematous papules and pustules with some necrotic center, varying in size from 2 mm. to 5 mm, located predominantly on her trunk (Fig 1) and extremities and some on her face (Fig 2). No lymphadenopathy was noted.

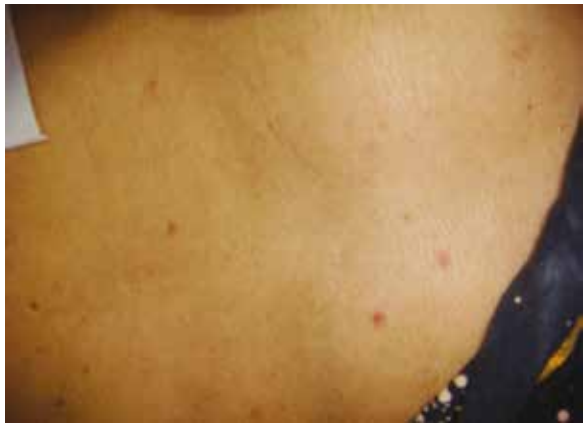

Fig 1. Skin leisions on chest wall

Laboratory investigations showed leukocytosis, with a white blood cell count of 14,110 cells/µL (PMN 96%, L=2 %); hemoglobin 7 g/dL. The patient's CD4 lymphocyte (CD4) count was 11 cells/mm^3 or 1%. Chest radiogram revealed alveolar infiltration at her right lung. Skin scrapings, sputum and feces for acid fast bacilli (AFB) were positive (Fig 3), and the PCR for tuberculosis

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Received 3 September 2012
Revised 22 November 2012
Accepted 3 December 2012

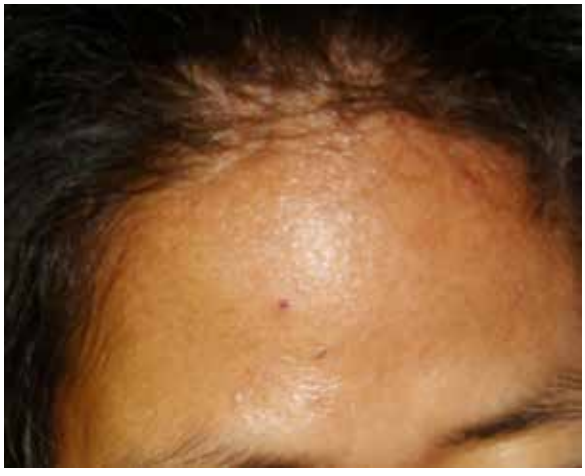

Fig 2. Skin lesions on face

complex was also positive. These were then confirmed by positive growth of Mycobacterium Tuberculosis Complex from skin scrapings, sputum and feces culture. Capsulated round yeast and some budding yeast were also found from scrapings of the lesions after methylene blue staining. Blood culture was negative. Cryptococcus antigen from blood was positive.

She was diagnosed as having disseminated tuberculosis and disseminated cryptococcosis. Treatment with isoniazid, rifampicin, pyrazinamide and ethambutol had been started upon the presence of AFB before identification of infection. Intravenous Amphotericin B was also started upon the presence of capsulated yeast on the skin scraping. The patient was also empirically treated with intravenous trimethoprim/sulfamethoxazone and intravenous ceftriaxone.

Three days later, the patient developed hypoxemia due to pulmonary hemorrhage and died.

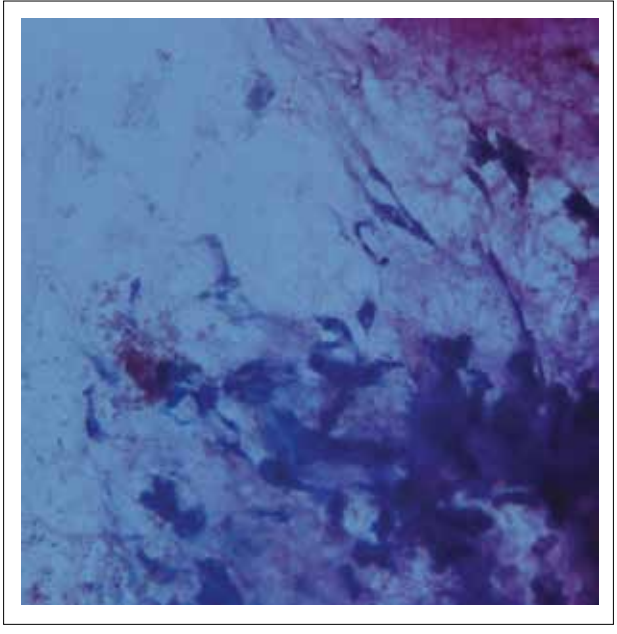

Fig 3. Acid Fast staining of skin scrapings

DISCUSSION

Cutaneous miliary TB is an uncommon form of TB secondary to hematogenous dissemination of *M. Tuberculosis*.[3,5] The skin lesions of miliary TB are variable, ranging from discrete erythematous pinpoint papules, papulovesicles and pustules, with a central crust to subcutaneous nodules, disseminated over the trunk, thighs and limbs.[3,5] The face is usually spared.[5] In our case, even the lesions on her trunk and extremities were typical as described, our patient also had a few lesions scattered on her face.

The cutaneous and histological findings of TB depend on the host immune status.[5] The diagnosis of acute disseminated miliary tuberculosis of her skin was made by clinical manifestations, imaging, and skin biopsy.[5] Due to the health condition of this patient, skin biopsy was not performed. However, the positive growth of Mycobacterium tuberculosis in sputum, feces and skin scrapings in our case further supported the diagnosis of disseminated TB with multiple organs involvement.

The co-infection between cryptococcosis and tuberculosis has been previously reported.6 In our case, even though capsulated round yeast and some budding yeast was found from skin scraping, fungal culture of the lesion was reported to be negative three weeks later. Therefore, the possibility of co-infection with cryptococcosis was ruled out.

In Southeast Asia, HIV-infected patients are usually severely immunocompromised at the time of TB diagnosis, with a median CD4 count of 54-57 cell/μL.[7] In addition, HIV infected patients who have low CD4 count are more likely to develop disseminated TB.[8] The prognosis of disseminated form of tuberculosis is poor as it is the leading cause of TB-related death in Thai HIV-infected patients.[5,7] A previous prospective cohort study proposed that risk factors for death in HIV-infected patients with tuberculosis include being female, age ≥ 30 years, having anemia, and not using highly active antiretroviral drug (HARRT) during the treatment of disseminated TB.[9] Our case had all the above risk factors which then contributed to her mortality.

The mortality related to HIV and TB co-infection can be reduced by the early initiation of HAART.[10] However, optimal management of HIV infection requires a high level of life-long adherence once a patient initiates HAART; otherwise, suboptimal adherence to HAART is associated with adverse consequences and virological failure.[11,12] From the findings of previous studies, female gender often predicts lower adherence.[13] In parallel to this, our female case had poor compliance to medications and was perceived as not being ready for HAART. She was then discontinued HAART. A specialized approach to improve adherence, such as closer doctor-patient relationship, taking measures to motivate patients and promote self-efficacy and commitment to treatment, should be used in such patients.

In conclusion, we report an uncommon case of acute disseminated TB in a female AIDS patient. It should be kept in mind that the possibility of mortality is high in a

case presented with poor immunity and cutaneous miliary tuberculosis who is not using HARRT.

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