INTRODUCTION

Tuberculosis (TB) infection has been present since prehistoric times. Recent data from the WHO (2009) indicates the global incidence of TB had increased to 139 per 100,000 people in 2007. Although TB prevalence is increasing in the era of HIV infection and the use of immunosuppressive agents, cutaneous TB is a rare manifestation of extrapulmonary TB. The incidence of cutaneous TB is about 1-2% of all cases of TB (Bravo and Gotuzzo, 2007), and about 0.2% of the patients in a dermatology outpatient clinic (Sehgal et al, 1987, 1989; Kakakhel and Fritsch, 1989). The most common manifestations of cutaneous TB from several studies are lupus vulgaris and scrofuloderma (Hamada et al, 2004) while other forms are quite rare.

Cutaneous miliary TB (tuberculosis cutis miliaris disseminata) is a very rare form of cutaneous TB, usually resulting from overwhelming pulmonary infection, which seeds the skin and other organs hematogenously, spreading in patients with immune dysfunction (Macgregor, 1995).

We report a case of disseminated cutaneous and pulmonary miliary TB in a renal transplant patient.
CASE REPORT

A 56-year-old Thai man with a history of a renal transplant presented with low grade fever, non-productive cough and weight loss for 1 month. He had a history of diabetes mellitus with end stage renal disease for 10 years. He was on cyclosporin 100 mg/d. Physical examination revealed a temperature of 37.5°C, fine crepitations in both lungs, and about 20 discrete erythematous papules, 1-2 mm in diameter, on all extremities, but more particularly on both lower extremities (Fig 1). Laboratory findings showed a hemoglobin level of 9.8 g/dl, a white blood cell count of 6,130/mm³ with 93.1% neutrophils, and a platelet count of 65,000/mm³. Chest x-ray showed miliary infiltration of both lungs. An imprint of a skin biopsy from the left thigh was negative for acid-fast bacilli (AFB). Histopathology of the skin biopsy specimen showed noncaseating granulomatous inflammation in the lower dermis (Fig 2) and was positive for many AFB. Sputum examination was positive for AFB. Bronchoalveolar lavage (BAL) fluid revealed AFB and M. tuberculosis DNA was demonstrated by polymerase chain reaction. Sputum and BAL fluid cultures for TB were not done due to contamination of the specimens. Miliary tuberculosis of the lungs and skin was diagnosed. The patient was treated with INH 300 mg/d, rifampicin 600 mg/d, ethambutol 500 mg/d and pyrazinamide 1,500 mg every other day. Two weeks after the onset of treatment, his skin lesions and pulmonary symptoms were improved.

DISCUSSION

Cutaneous miliary tuberculosis (tuberculosis cutis miliaris disseminata) was first reported by Fox (1895). The lesions (Macgregor, 1995) usually begin with acute generalized discrete blue-red to brownish papules, 20-30 in number (Antinori et al, 1995), sometimes capped by vesicles that break and dry with crust or progress to form small round ulcers with
purulent exudate. Sometimes they appear as pustules, macules, or subcutaneous nodules. Diagnosis can be made by the clinical manifestations, identification of AFB on skin biopsy, and isolation of *M. tuberculosis* from PCR or culture of the tissue. Our patient presented with prolonged fever, miliary infiltration in the lungs, and multiple small discrete erythematous papules distributed on extremities. The differential diagnoses includes insect bites, folliculitis and disseminated infections caused by bacteria, herpes virus, fungus, and *M. avium-intracellulare*. The identification of AFB on skin biopsy and AFB or *M. tuberculosis* DNA from BAL fluid confirms the diagnosis of miliary tuberculosis of the lungs and skin.

In the literature from 1889 to 1991, only 18 cases of cutaneous miliary tuberculosis in patients older than 15 years old were found (Schermer et al, 1969; Reitbroek et al, 1991; Stein et al, 1999; del Giudice et al, 2000; Park et al, 2002). Cutaneous miliary tuberculosis in patients with HIV infection was first reported by Stack et al (1990). Since then, only 19 cutaneous miliary tuberculosis cases in HIV patients have been reported (Rohatgi et al, 1992; Bassiri et al, 1993; Inwald et al, 1994; Antonori et al, 1995; Corbett et al, 1995; Farina et al, 1995; Libratty and Byrd, 1996; Antonori et al, 1997; Hudson et al, 1997; Daikos et al, 1998; Chiewchanvit et al, 2000; High et al, 2004; Regnier et al, 2009). The incidence of tuberculosis in renal transplant recipients was reported as 0.5-1% in the United States, 1-4% in Europe, and about 10% in developing countries (Sakhuja et al, 1996; Naqvi et al, 1997). Although the incidence of tuberculosis in renal transplant recipients is 5 times higher than in the general population (Biz et al, 2000); the incidence of cutaneous miliary tuberculosis in these patients was very rare. A study of 36 cases of tuberculosis among 305 renal transplant recipients in India over an 8-year period found infections in the thoracic cavity in 41.7%, single extrapulmonary infection in 11.1%, disseminated infection in 27.8%, and pyrexia of unknown etiology in 19.4% (Sakhuja et al, 1996). In the disseminated patients, only 1 case presented with skin lesions (an ulcer on the left groin) and positive for AFB. There was only 1 reported case of cutaneous miliary tuberculosis in a kidney transplant recipient with immunosuppressive therapy from South Korea (Park et al, 2002). She presented with fever, pulmonary tuberculosis, respiratory failure and disseminated erythematous papules of the trunk and extremities.

The antituberculosis regimen for cutaneous miliary tuberculosis does not differ from that used for tuberculosis in the general population (Biz et al, 2000), but the possibility of hepatotoxicity increases when combined with immunosuppressive drugs (McAllister et al, 1983; Hebert et al, 1992; Koselj et al, 1994; Di Peri et al, 1998). The use of rifampicin can lower blood levels of prednisolone and cyclosporin, which increases the risk of graft rejection (Sakhuja et al, 1996). Disseminated tuberculosis in the immunosuppressed patients has a higher mortality rate. In a study of 30 renal transplant recipients with tuberculosis, 7 patients died (23.3%), of which 5 had disseminated tuberculosis (Biz et al, 2000).

Since the incidence of worldwide tuberculosis is increasing but the incidence of cutaneous miliary tuberculosis remains quite rare, it is possible that there have been missed diagnoses and/or skin lesions are easily overlooked. Cutaneous miliary tuberculosis should be in the differential diagnosis of discrete small erythematous papules in HIV-infected or immunosuppressed patients.
REFERENCES


Park KW, Kim US, Shin JW, Yoo CG, Oh MD, Choe K. Disseminated erythematous...


