A case of secondary syphilis presenting as multiple pulmonary nodules

Se Joong Kim¹, Ju-Han Lee², Eung-Seok Lee², Il-Hwan Kim¹, Hyung Joo Park⁴, Chol Shin¹, and Je Hyeong Kim¹

Syphilis is a sexually transmitted disease caused by Treponema pallidum. The prevalence of this disease has recently increased worldwide. However, pulmonary involvement in secondary syphilis is extremely rare. A 51-year-old heterosexual male patient presented with multiple pulmonary nodules with reactive serology from the Venereal Disease Research Laboratory test and positive fluorescent treponemal antibody absorption testing. A hematogenous metastatic malignancy was suspected and an excisional lung biopsy was performed. Histopathological examination showed only central necrosis with abscess and plasma cell infiltration, but no malignant cells. The patient reported sexual contact with a prostitute 8 weeks previously and a penile lesion 6 weeks earlier. Physical examination revealed an erythematous papular rash on the trunk. Secondary syphilis with pulmonary nodules was suspected, and benzathine penicillin G, 2.4 million units, was administered. Subsequently, the clinical signs of syphilis improved and the pulmonary nodules resolved. The final diagnosis was secondary syphilis with pulmonary nodular involvement.

Keywords: Syphilis; Treponema pallidum; Multiple pulmonary nodules

INTRODUCTION

Syphilis is a sexually transmitted disease caused by infection with the spirochete bacterium, Treponema pallidum [1]. Until the 1980s, the prevalence of syphilis decreased and remained low for nearly a decade. However, the incidence of syphilis has since then increased worldwide. In particular risk groups, the prevalence has increased by a factor of 12 over the last 5 years [2].

Acquired syphilis can be divided into primary, secondary, latent, and tertiary stages [3]. The inoculation of treponemes into tiny abrasions from sexual trauma can cause a chancre, a painless ulcer. While local immunity leads to healing of the ulcer, hematogenous dissemination of the treponemes results in secondary syphilis. Secondary syphilis is characterized by multisystem involvement: typically, a skin rash, condyloma lata, mucosal lesions, and generalized lymphadenopathy. However, pulmonary involvement in patients with secondary syphilis is extremely rare [4]. This is then followed by a latent phase and, if untreated, about 40% of patients will go on to develop the tertiary stage, characterized by gummatous, cardiovascular, and neurological involvement [1,3,5]. Pulmonary involve-
ment is occasionally found in patients with tertiary syphilis.

Here, we report a case of secondary syphilis with pulmonary involvement in a patient presenting with multiple pulmonary nodules, initially suspected to be due to a metastatic carcinoma.

CASE REPORT

A 51-year-old heterosexual male with no significant medical history presented with multiple pulmonary nodules on a plain chest radiograph. The nodules were detected during an evaluation for right pleuritic chest pain, fever, and myalgia that started 2 weeks earlier. The patient denied weight loss, respiratory, or gastrointestinal symptoms.

A physical examination revealed a normal body temperature, normal breath sounds, no mucosal or genitourinary lesion, but an erythematous papular rash on the trunk, right cervical, and bilateral inguinal nontender, nonmovable lymphadenopathy was noted. Laboratory tests showed no leukocytosis, normal alkaline phosphatase levels, and a normal urinary analysis. However, the erythrocyte sedimentation rate, > 120 mm/hr (normal range, < 9), high sensitivity C-reactive protein, 4.8 mg/dL (normal range, < 0.3), γ-glutamyl transpeptidase, 73 IU/L (normal range, < 50), and alanine aminotransferase, 55 IU/L (normal range, < 50) were elevated. Carcinoembryonic antigen, carbohydrate antigen 19-9, and prostate specific antigen were within normal ranges. Human immunodeficiency virus (HIV) testing was negative.

The Venereal Disease Research Laboratory (VDRL) test was positive. A diagnosis of syphilis was suspected; fluorescent treponemal antibody-absorption (FTA-ABS) and VDRL titers were assessed, resulting in reactive FTA-ABS immunoglobulin M, immunoglobulin G, and a 1:64 VDRL titer. A plain chest radiograph and computed tomography (CT) scan showed multiple variably sized nodules in both lungs, suggesting the possibility of a hematogenous metastatic malignancy (Fig. 1A). Screening tests for malignancy including gastrointestinal endoscopies, bronchoscopy, and CT scans of the neck, abdomen, and pelvis revealed only cervical and pancreatic lymphadenopathy. Positron emission tomography CT scanning was performed and showed hypermetabolic lesions, including the multiple pul-

Figure 1. (A) Chest computed tomography scan shows multiple pulmonary nodules in both lungs. (B) After benzathine penicillin G treatment, the multiple pulmonary nodules had largely disappeared 10 months later.