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Pulmonary Paracoccidioidomycosis: A Case Report

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Abstract

Introduction: Paracoccidioidomycosis (PCM) is a type of mycosis most often found in the lung. The authors present a case of pulmonary PCM.
Case Presentation: A 72-year-old man had a four-year history of dyspnea, dry cough, and weakness and a recent weight loss of more than 10 kg. First, he was treated with glucocorticoid, but he did not continue this treatment. Core needle biopsy was done. Pathology reported paracoccidioidomycosis. The patient was treated with itraconazole.
Conclusions: PCM has not been reported in Iran until now, but it should be considered as a differential diagnosis when risk factors or symptoms of PCM are detected.

Keywords: Pulmonary, Paracoccidioidomycosis, Dyspnea

1. Introduction

Paracoccidioidomycosis (PCM) is a type of mycosis caused by the fungus paracoccidioides brasiliensis (PB) that is common to Latin America (1, 2), and while it can affect any tissues or organs, it is mostly found in the lung, skin, and mucous membranes (3). The initial lesion is similar to the primary complex of tuberculosis and may be controlled by natural defense mechanisms or may progress to symptomatic disease. The fungus can then spread by lymphatic or blood circulation to the kidneys, spleen, liver, bone, adrenal glands, central nervous system, and airways, including the trachea (4). PCM is often seen in farm workers, with the highest incidence occurring between the ages of 25 to 60 (5). Development of the disease can occur several years after initial infection (6). The authors present a case of pulmonary PCM with lung lesion.

2. Case Presentation

A male, 72-year-old non-smoker and non-drinker of alcohol from Tonekabon city in north Iran was a mechanic without history of tuberculosis or HIV. He had a four-year history of dyspnea, dry cough, and weakness and a recent weight loss of more than 10 kg, and he denied any history of fever or night sweats. The patient had no symptoms of enlarged lymph glands, liver lesions, spleen lesions, intestinal lesions, adrenal lesions, or skin lesions.

Presenting with eosinophilia, elevated IgE, and being negative for bronchoalveolar lavage (BAL) for acid-fast bacilli (AFB), he was treated with glucocorticoid (GC) with a diagnosis of eosinophilic pneumonitis four years prior. The patient arbitrarily discontinued GC due to increased blood sugar and did not confer to continue treatment. However, the dyspnea had begun to increase after four years. He was then admitted to the Rouhani hospital of Babol, Iran in October 2014. Cytology samples obtained through bronchoscopy were negative. Clinical symptoms and radiographic changes showed bilateral diffusion infiltration and involvement of the lungs. For this reason, core needle biopsy (CNB) was done by guided computerized axial tomography (CT).

The patient was hospitalized with pneumothorax and subcutaneous emphysema discovered during biopsy. A chest tube was laid, and he was discharged with good general condition a few days later.

We did not conduct serological tests for detection of anti-*P. brasiliensis* antibodies or obtain sputum samples. However, we proposed a hypothesis of paracoccidioidomycosis as a differential diagnosis, despite the disease not being endemic to the area.

The first pathology report indicated a fungal infection, and the second pathologist in Tehran reported fibrocol-

lagous stroma with a large number of rounded to ovid and occasionally budded morphological structures that consisted of paracoccidioidomycosis; we thus reported PCM in Iran for the first time. The patient was treated with itraconazole (200 mg/BD).

Currently, the patient exhibits no coughing, can tolerate exercise and undertake daily tasks, and has gained weight.

Table 1. Variables of the Case

Variables	Results
Signs and symptoms	Dyspnea, dry cough, recent weight loss of more than 10 kg, weakness
Laboratory results	Eosinophilia, HIV and TB negative, Hb 15.6 mg/dL, HCT 47.5%, Plt 328,000 per mm^3, cholesterol 237 mg/dL (HDL 75 mg/dL, LDL 79 mg/dL), triglyceride (TG) 353 mg/dL, total IgE 155 KIu/L, S/E (stool exame) negative, ACE 62 μg/L
Bronchoalveolar lavage (BAL) for acid-fast bacilli (AFB)	Negative
Radiographic changes	Bilateral diffusion infiltration and involvement of lungs
Cytology samples by bronchoscopy	Negative
Pathology report by CNB (first in Babol)	Fungal infection
Pathology report (second in Tehran)	Paracoccidioidomycosis

3. Discussion

PCM is more common among adult men. The average male-to-female ratio of infection is 13:1 in South American countries, and the lungs are involved in 50% - 100% of cases6. Both active phase injuries and chronic fibrotic changes may be found simultaneously.

Lung disease is manifested on high-resolution computed tomography (HRCT) by ground glass opacities, scattered parenchyma nodules, septal thickening, speculated pleural thickening, traction bronchiectasis, tracheal dilation, and paracicatricial emphysema (7, 8).

Diagnosis of mycosis is obtained when PB is observed in biological fluid or tissues, but mycological and histological examination or serological techniques are also useful5. It can be treated with trimethoprim-sulfamethoxazole or itraconazole, or in severe cases with amphotericin B (5, 9, 10).

Most cases with pulmonary lesion present acute dyspnea and exercise intolerance (11). However, dry cough, fever, weight loss (12), hip pain related to osteomyelitis and pyoarthritis, oral lesions, necrotic fingertip (13), lymphadenomegaly and hepatosplenomegaly (14), and urgency and frequency of nocturia in prostatic paracoccidioidomycosis may be evident (15). Age, use of immunosuppressive medications, sex, and concomitant disease are risk factors for PCM. The incubation period may last from a few weeks to 60 years (16), and despite PCM not being endemic to Iran, it is crucial to investigate patients with cough and other signs of PCM, especially men who live in rural areas.

3.1. Conclusions

Although PCM has not been reported in Iran until now, it should be considered as a differential diagnosis when risk factors or symptoms of PCM are present.

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Footnote

Authors' Contribution: Mahmood Monadi carried out the design and coordinated the study, participated in most of the experiments, and prepared the manuscript. Mojgan Naeimi Rad and Hosein Narimani conducted the literature search and edited the manuscript. Mahmood Sadeghi and Reza Khaleghnejad provided the definition of intellectual studies and clinical studies.

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