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Case Report

A Case of Pulmonary Sarcoidosis Misdiagnosed as Tuberculosis

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Abstract
Sarcoidosis is a multisystem disorder characterized by non-caseating granulomatous inflammation at sites of disease. Although any organ can be involved, the disease most commonly affects the lungs and intrathoracic lymph nodes. Clinical features of sarcoidosis bear a similarity with tuberculosis (TB), thus the dilemma of excluding TB in a suspected patient of sarcoidosis or differentiating between the two entities continues to be a clinical and diagnostic challenge particularly in countries endemic for TB like India. Here we present a case of sarcoidosis in a 50 years old lady who was misdiagnosed as tuberculosis.
Keywords: *Misdiagnosis, sarcoidosis, tuberculosis.*

Introduction

Tuberculosis is a chronic disease like Sarcoidosis. Patients usually present with long history of fever and other constitutional symptoms in both the diseases. Both the diseases also share many common radiological features. In peripheral health care settings of areas endemic for tuberculosis, with limited man power and diagnostic resources it becomes really difficult to differentiate pulmonary sarcoidosis from sputum smear negative pulmonary tuberculosis.

Case Report

A case of a 50-year-old house-wife who presented to Department of Pulmonary Medicine, Veer Surendra Sai Institute of Medical Sciences and Research, Burla, with a history of low grade fever since past 7 months, progressive breathlessness and dry cough since past 5 months. She had been evaluated in peripheral hospital and was started on treatment for TB for the past 3 months but with no improvement of symptoms. Thereafter, she presented to the hospital with worsening of breathlessness since the past 3 weeks. High resolution computed tomography (HRCT) revealed diffuse reticulo-nodular opacities [Figure1] most prominent in bilateral upper lobes and superior segment of left lower lobe with hilar and mediastinal lymphadenopathy. Echocardiography was normal. Blood investigations revealed a hemoglobin level of 10 g/dl, total leukocyte count of 9500/µl (with differential counts of neutrophil at 69%, lymphocyte at 28%, and eosinophil at 3%), erythrocyte sedimentation rate (ESR) of 48 mm, and random blood sugar (RBS) of 98 mg/dl. She had normal liver and renal function tests. Serological evidence for human immunodeficiency virus (HIV) infection was negative. Bronchoscopy was performed, and on

cartridge based nucleic acid amplification test (CBNAAT) of bronchial aspirate, Mycobacterium tuberculosis was not detected, which indicated a possibility of some nontubercular pathology. Serum calcium levels were normal, but serum angiotensin converting enzyme levels were elevated at 129 u/l .Possibility of sarcoidosis was thought based on these findings. Histo-pathology showed noncaseating granulomas consistent with sarcoidosis. On transbronchial needle aspiration, a granulomatous pathology was observed. On further transbronchial lung biopsy, noncaseating granuloma was seen [Figure 3]. She was started on oral prednisolone. She showed significant improvement in her symptoms. Within 4 weeks of steroid treatment, lung functioning had improved [fev1 (97%), fvc (90% of expected)], and repeat CT scan chest after 3 months showed marked radiographic improvement, with a significant resolution of parenchymal nodular infiltrates [Figure 2].

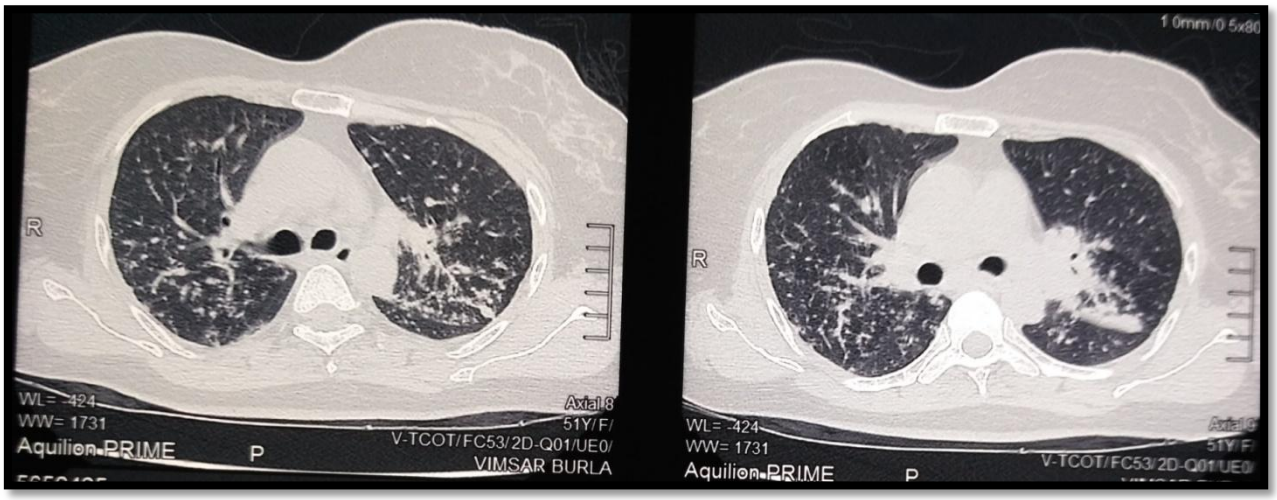

Figure 1: High resolution computed tomography (HRCT) showing diffuse reticulonodular opacities and lymphadenopathy on presentation

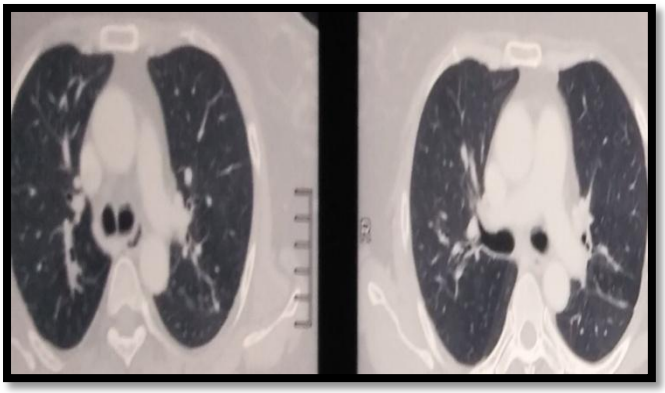

Figure 2: High resolution computed tomography (HRCT) after 3 months showing resolution of reticulonodular opacities and lymphadenopathy

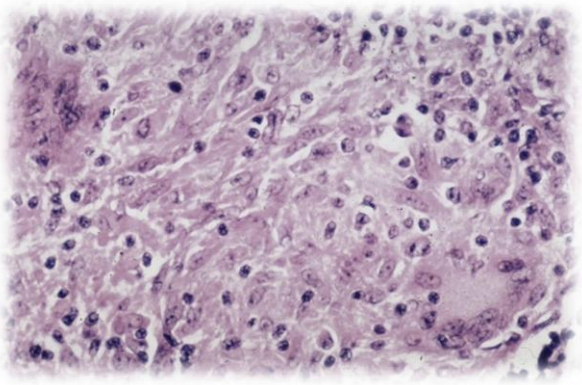

Figure 3: Noncaseating granuloma on transbronchial lung biopsy

Discussion

Sarcoidosis is a multi-systemic chronic granulomatous disease of unknown etiology. It is hypothesized to be an immune-mediated inflammatory response to an unidentified environmental trigger.[1] It is characterized by

the formation of non-necrotizing epitheloid cell granulomas as a result of underlying immune dysregulation, typically showing multi organ involvement, with the pulmonary involvement occurring in about 80–90% of the affected individuals.[2,3] The data from western literature reported an annual incidence of 5–40 cases/100,000population in north European countries,[4] and an estimated prevalence of less than 1–40 cases/100,000 population in the United States.[5] In India, the reporting of sarcoidosis has been, by far, sketchy; mainly hampered by its close resemblance to the commoner granulomatous disease-TB. Amongst the available data, 10–12 cases of sarcoidosis per 1,000 new registrations were reported from a respiratory unit in Kolkata, while 61.2/100,000 cases were reported from a center in Delhi. [6,7] However, in the absence of any large scale epidemiological study, the true prevalence of the disease in Indian population remains unclear.

The constitutional symptoms of fever, malaise, weight loss, and fatigue are observed in both, TB and sarcoidosis. Additionally, respiratory symptoms like cough and shortness of breath are common to both conditions. Similar ocular manifestations such as dry eye and bilateral lacrimal gland enlargements can be seen in both sarcoidosis and TB. Serpiginous-like choroiditis is more likely to be associated with TB than with sarcoidosis.[8] As both the diseases share many common manifestations it is common for many clinicians , particularly in resource limited settings to mistakenly treat sarcoidosis for clinically diagnosed, sputum smear negative pulmonary tuberculosis. In such circumstances the patient not only made unnecessarily exposed to toxic anti-tubercular drugs for months together but also the diagnosis of sarcoidosis becomes late. So this misdiagnosis should be avoided, because the treatments for these two diseases are entirely different.

Conclusion

Diagnosis of sarcoidosis in areas with a high burden of TB like India poses a significant challenge. Knowledge of the physician about presentations of sarcoidosis, strong point of suspicion of sarcoidosis and improved diagnostic modalities including genetic tests can help in distinguishing these two diseases.

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