Case Report

Coccidioidomycosis masquerading as disseminated tuberculosis

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Abstract

Coccidioidomycosis is a rare disease in India. However, in recent years, quite a significant number of cases have been reported. The increase is likely due to frequent visits to endemic regions outside India. It is because of the rarity of this disease that several times, it is misdiagnosed and left untreated. We present one such case which was mistaken for tuberculosis and put on anti-tuberculous therapy only to return with more widespread disease and no symptomatic relief.

Keywords: Coccidioidomycosis, disseminated, tuberculosis

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INTRODUCTION

Coccidioidomycosis is a pulmonary or hematogenously spread disseminated disease caused by the fungi *Coccidiodes immitis* and *C. posadasic* transmitted by inhaling the spores found in soil which gets into the air when disturbed. It is endemic in Arizona, California, Nevada, and New Mexico.[1] We herein report a case of imported disseminated Coccidioidomycosis diagnosed by fine needle aspiration cytology (FNAC) of supraclavicular lymph node and confirmed by histopathology.

CASE REPORT

A 62-year-old male presented with the complaints of cough, fatigue, and breathlessness for 2 months. On clinical examination, he had low-grade fever and right side cervical lymphadenopathy. High-resolution computed tomography chest revealed multiple tiny miliary nodules and fibrocavitary lesions in both lungs. Enlarged lymph nodes were noticed in precarinal, subcarinal, and tracheoesophageal groove on the right side. Lytic lesions were seen in the right scapula, right clavicle, D10, D5 vertebral body, and 7th rib on the left side. FNAC from cervical lymph node was reported as necrotic aspirate only. Ziehl–Neelsen stain did not reveal any acid-fast bacilli. A clinical impression of tuberculosis was made, on the basis of which the patient was put on anti-tuberculous treatment and discharged. The patient came back after 3 months with no improvement in symptoms, development of additional nodular lesions on the skin, enlarged supraclavicular lymph node, and nodular right side enlargement of thyroid gland. A repeat FNAC from supraclavicular lymph node and thyroid nodule yielded a purulent aspirate mixed with blood. Smears were prepared and stained with Giemsa stain. Microscopic examination showed predominantly necrotic material along with degenerated epithelioid cell granulomas and inflammatory cells comprising neutrophils and macrophages. Also seen were numerous scattered double walled spherules, few of which contained globular endospores. The spherules were highlighted on Periodic acid–Schiff stain. ZN stain did not

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Quick Response Code:	Website: www.ijcpc.org
	DOI: 10.4103/ijcpc.ijcpc_14_18

How to cite this article: Chauhan K, Walia H, Sara G, Hatwal V. Coccidioidomycosis masquerading as disseminated tuberculosis. Int J Clinicopathol Correl 2019;3:36-8.

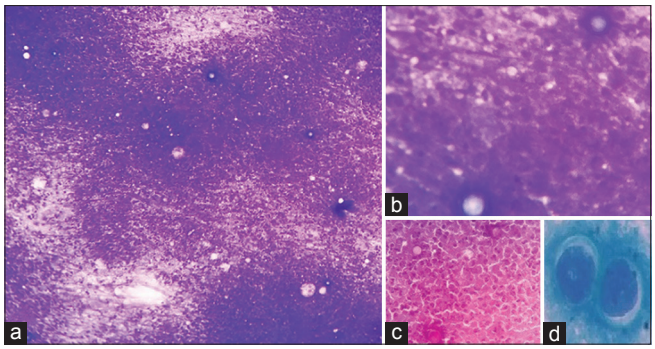

Figure 1: (a) Low power view of a FNAC smear showing necrosis and scattered round spherules (giemsa, X100) (b) and (c) High power view showing structure of a spherule in giemsa and PAS stain respectively(X400) (d) ZN staining highlighting double walled structure of a spherule (ZN, X1000)

reveal any acid-fast bacilli [Figure 1]. Slides from previous FNAC were reviewed, and occasional similar spherules were found which were missed earlier due to their sparse number. On further asking, the patient admitted to have visited an endemic region (Nevada, USA) 6 months back.

On the basis of microscopic findings, travel history, and clinical findings, a diagnosis of Coccidioidomycosis was offered. Histopathological examination of supraclavicular lymph node showed multiple epithelioid cell granulomas, giant cells and spherules containing endospores in a background of abundant necrosis [Figure 2]. The patient was given a loading dose of 0.25 mg/kg amphotericin B intravenous infusion over 2 h followed by a maintenance dose of 0.25 mg/kg over a day for 3 days. The patient was discharged and lost to follow-up.

DISCUSSION

Disseminated coccidioidomycosis is the most severe form of the disease and is seen in people having a poor immune system. It can disseminate to the nervous system, bones, joints, visceral organs, and lymph nodes.[1] The symptoms such as cough, fatigue, fever, joint pains, muscle aches mimic tuberculosis, or infrequently cancer. The acute form (pulmonary and cutaneous) develops in 1–3 weeks, but the chronic/disseminated form may take months or years to manifest.[2] The disease is not prevalent in India due to the lack of semi-arid climatic conditions required for the fungus to thrive.[3] After exposure, only 0.5% of people develop disseminated disease.[4] Histopathological examination revealing endospores-containing spherules varying in diameter from 20 to 200 μ without budding is diagnostic of coccidioidomycosis.[2]

Coccidioidomycosis is commonly mistaken for tuberculosis[5] because of the more prevalent nature of

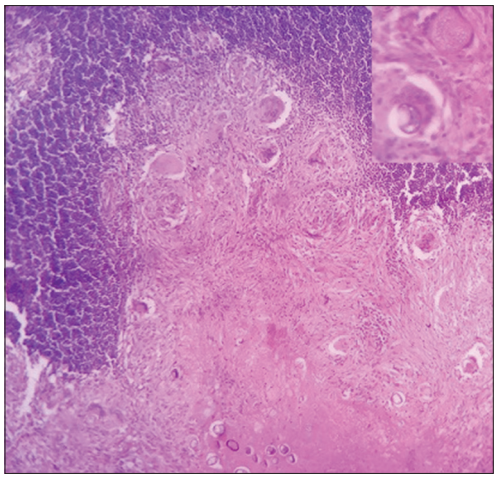

Figure 2: Low power view showing effaced lymph node architecture with areas of necrosis, granulomatous inflammation and coccidioidomycosis spherules (H and E, ×100). Inset showing spherules with endospores

later in India. Apart from this, there have been two reported cases of pulmonary and cutaneous coccidioidomycosis each along with two other cases showing synovial and lymph node involvement.[2,6,7] This is the first case of coccidioidomycosis diagnosed on FNAC and confirmed by travel history, clinico-radiological and histopathological findings.

To conclude, coccidioidomycosis is not indigenous to India and is always imported by travel to an endemic region. FNAC offers an easy and rapid method of diagnosis if carefully searched for spherules which can be missed easily in a background of abundant necrosis and granulomatous inflammation.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Acknowledgment

The authors would like to thank the technical staff, MD and chairman of the hospital for their support and help in carrying out this study and collecting required data.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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