COCCIDIOIDOMYCOSIS PRESENTING AS A CYSTIC SWELLING IN RIGHT SIDE OF NECK: A CASE REPORT

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ABSTRACT

Coccidioidomycosis is a fungal disease found in the desert soils of Western Hemisphere. Histopathological examination is the key to the diagnosis when fungal culture and molecular studies are not available. Disease in non-endemic area is usually imported. But here we have reported a case of coccidioidomycosis found indigenous in Jharkhand, to our best of knowledge, where the patient had no history of travel to endemic regions.

KEYWORDS
Coccidioidomycosis, Neck Swelling, Histopathology.

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INTRODUCTION: Coccidioidomycosis, also known as Valley fever or San Joaquin fever, is an endemic disease of the western hemisphere caused by the dimorphic soil dwelling fungus Coccidioides.[1] Most human infections are caused by Coccidioides immitis. Coccidioidomycosis may vary from a clinically unapparent infection to a severe or fatal mycosis.[2] Most common site of involvement is lung followed by skin, bones, joints and meninges. Clinical dissemination outside the thoracic cavity occurs in less than 1% of infected individuals. We herein present a detailed description of an isolated coccidioidomycosis presenting as a right sided neck mass, with no pulmonary involvement.

CASE REPORT: A 28-year-old man presented to Surgery Department of RIMS, Ranchi with complaints of right-sided neck swelling from 8 months. The swelling was gradually increasing in size but not painful. There was no history of trauma, fever, weight loss or tuberculosis, but patient was taking treatment for Leprosy from past one year. He is a farmer by occupation and has never been outside India his entire life. On examination, there was a soft well-circumscribed lump present on right side of neck measuring 4 cm by 2.5 cm by 2.5 cm without any discharging sinus. Systemic examination of the patient was normal.

Test results including complete blood count, erythrocyte sedimentation rate, routine urine, renal function test, liver function test, Mantoux test, and chest X-ray were within normal limits.

Ziehl-Neelsen staining for acid fast bacilli was negative. Ultrasonography of the neck showed a heteroechoic lesion measuring 5 cm by 2.5 cm by 2.5 cm abutting right submandibular gland. Thyroid, parotid and submandibular glands were normal. Clinical possibility of infected branchial cyst was considered and tissue was sent for histopathological examination.

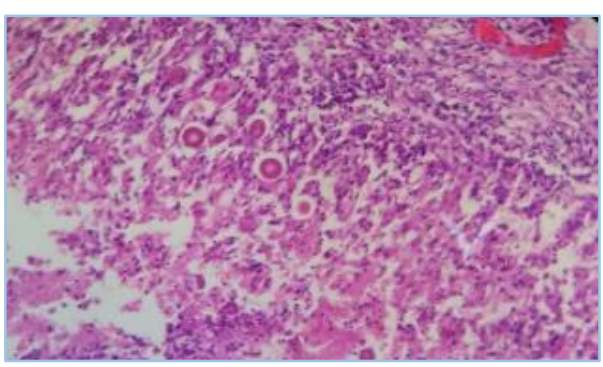

Fig. 1: Spherules of Coccidioidomycosis Along with Granulomatous Reaction (H and E stain ×100)

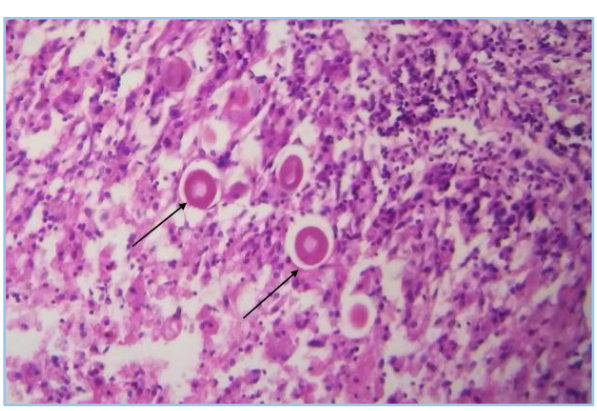

Fig. 2: Spherules of Coccidioidomycosis Along with Lymphocytes and Epithelioid Cells at Higher Magnification. (H and E×400)

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DISCUSSION: Coccidioidomycosis is caused by the dimorphic soil-dwelling fungus Coccidioides immitis. Coccidioidomycosis is confined to the Western Hemisphere between the latitudes of 40°N and 40°S. In the United States, areas of high endemicity include the southern portion of the San Joaquin Valley of California and the south-central region of Arizona.[3] The reason for the disease not being prevalent in India might be attributed to the lack of optimum conditions such as the semi-arid climate and the flora for the fungus to thrive.[4]

Exposure to the soil containing spores is the only risk factor for acquiring the disease. It is transmitted either through direct contact or indirect exposure to contaminated secretions. This exposure usually occurs during windstorms, farming, digging, and construction which lead to development of the disease.[1,2] Our patient was a farmer by occupation. The incubation period for primary pulmonary or cutaneous coccidioidomycosis is usually 1-3 weeks; however, disseminated disease or chronic pulmonary coccidioidomycosis can occur months or years after the initial infection.[5]

After being exposed to the infecting agent, about 60% of the individuals remain asymptomatic, 40% develop "Valley Fever," which is a self-limiting flu-like illness, 5% of the people develop pulmonary disease, and clinical dissemination outside the thoracic cavity occurs in less than 1% of infected individuals involving skin, bones, and central nervous system.[3,6] In tissue culture, C. immitis is identified by large globular sporangia, which contain sporangiospores or endospores. The spores enlarge to form spherules and rupture of the spherules leads to release of endospores.

Intact sporangia usually elicit a granulomatous reaction of histiocytes, epithelioid cells and giant cells of the foreign body or of Langhans type.[5] which is clearly seen in our case. Histopathological examination of tissues is considered to be more valuable and easier to perform as culture and molecular diagnostic modalities are not routinely available in laboratories in the non-endemic regions. For fixed tissues (e.g., those obtained from biopsy specimens), identification of spherules ranging in diameter from 20 to 200 µm without budding with surrounding granulomatous inflammation demonstrated with haematoxylin and eosin staining under microscopy is diagnostic of coccidioidomycosis.[3] which is very clearly present in this case.

H and E staining can easily distinguish typical morphological structures of coccidioidomycosis spherules and can also differentiate it from budding yeast forms of Blastomyces, Histoplasma, or Cryptococcus. In our patient, morphological features on histology confirmed the diagnosis for coccidioidomycosis. There is no original case report of this disease in India till date; however, four imported cases have been reported from Mumbai, Chennai, Bengaluru and Ludhiana.[6,7,8]

CONCLUSION: Coccidioidomycosis is extremely rare in India and most of them have a history of travel to endemic regions. This report emphasises the importance of occurrence of this unusual exotic disease in Jharkhand where patient had no history of travel to endemic regions. It is also important to know that Coccidioides can rarely thrive in the soils of non-arid regions and manifest the disease.

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