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# Cutaneous Coccidioidomycosis in India - Report of Second Imported Case from USA

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**Abstract:** ***A young Indian male presented with non - healing ulcerative lesion over the left pre auricular area with cervical lymphadenopathy since 1 year. It did not resolve despite regular treatment with anti tuberculous therapy for 6 months based on the previous biopsy specimen showing evidence of granulomas. He did not have any significant medical comorbidities or high risk behaviours. He had travelled to Arizona, USA for pilot training programme and had stayed there for 8 months with significant outdoor exposure visiting national parks and canyons. With this strong epidemiological link possibility of endemic mycosis was considered and patient was advised for repeat biopsy from the lesion, but the patient was not willing for the same. Careful histopathological slide review of the original biopsy specimen and fungal stains by our institution pathologist showed suppurative granulomatous inflammation with spherules consistent with coccidioidomycosis. He was started on Itraconazole and he started to show clinical improvement. After 4 months of treatment, due to hyperbilirubinemiaitraconazole was changed to fluconazole and 8 months of treatment was completed***

**Keywords:** Coccidioidomycosis, Endemic mycosis, Fungal infection, Granulomatous infection, Skin infection

## 1. Introduction

A handful of cases of Coccidioidomycosis has been reported in the Indian literature so far of which only one case is of isolated cutaneous coccidioidomycosis. We report a case of cutaneous coccidioidomycosis in a young Indian male following a visit to the United States of America (USA). The patient was successfully treated with triazoles. Diagnosis could not have been made in this patient without elicitation of travel history.

## 2. Case Report

A 25 year old Indian male pilot presented with history of ulcerative skin lesion with bloody discharge in his left pre - auricular region with associated cervically mphadenopathy since 1 year on and off. He did not have any other systemic complaints. His significant past medical history included intermittent wheeze, for which he was not on medications. He was an occasional alcohol consumer and denied other addictions.

He had travelled to Tucson, Arizona of the USA the previous year and stayed there for around 8 months for his pilot training programme. During the course of stay, he had had significant outdoor exposure including national parks and canyons. His skin lesion was managed initially with multiple courses of antibiotics without any significant response. Six months earlier, skin biopsy done elsewhere had evidence of granulomas and he was started on empiricalantituberculous therapy (ATT) consisting of isoniazid, rifampicin, ethambutol and pyrazinamide initially for 2 months and then isoniazid and rifampicin alone.

He presented to our institution with persisting skin lesion despite adherence to ATT for 6 months. Examination showed an erythematous ulcerative lesion in left pre - auricular region (Fig 1). Systemic examination was unremarkable. His blood counts, urea, creatinine and liver function tests were within normal limits. HIV ELISA was non - reactive and PPD showed no induration. CT scan of chest and ultrasonogram of abdomen did not reveal any abnormalities.

Poor response to antituberculous therapy and the background travel history to Arizona in the USA prompted us to think of endemic mycosis as a diagnostic possibility. Careful histopathological slide review of the original biopsy specimen showed suppurative granulomatous inflammation with spherules consistent with coccidioidomycosis (Fig 2)

He was started on a loading dose of itraconazole (600mg in 3 divided doses) for initial three days followed by 200mg twice daily. Four months after initiation of itraconazole there was good resolution of the skin lesion, but he started to develop asymptomatic mild unconjugated hyperbilirubinemia and mild hypertension. Itraconazole was replaced with fluconazole and it was continued for 8 months. The patient showed excellent resolution of the skin lesion during follow up visits.

## 3. Discussion

Coccidioidomycosis is an endemic mycosis of the America and is caused by *C. immitis*, a dimorphic soil dwelling fungus that grows as a mycelium in the soil and produces a spherule form in the host. It is endemic in certain parts of Arizona, California, Nevada, New Mexico, Texas and Utah of the United States. Outside the United States, coccidioidomycosis is endemic in Northern Mexico and scattered parts of Central and South America. [1, 2]

With increasing international travel, coccidioidomycosis has been documented in non - endemic countries also. Fourteencases of coccidioidomycosis from Japan have been documented. [3]To the best of our knowledge *C. immitis* has not been documented in Indian soil so far. All thecase

reports of coccidioidomycosis from India, had documented travel history to endemic areas. [4, 5]

Clinical presentation of Coccidioidomycosis may be eitherprimary pulmonary ordisseminated disease.60% of cases with acute primary coccidioidomycosis are asymptomatic. The rest 40% usually present as an influenza - like illness with fever, cough, sputum, headache, rash andmyalgia [1]. Serious complications include severe pneumonia, lung nodules, and meningitis. Dissemination outside the thoracic cavity, affecting the meninges, soft tissues, bone and joints occurs in lessthan 1% of infected individuals with intact immune system. In order of decreasing risk, people of Filipino, African, Native American, Hispanic, and Asian descent are susceptible to the disseminated form of the disease. [6]Men, pregnant women, and immune - compromised individuals are more susceptible to develop severe disease. [7]

Our patient most likely had primary isolated cutaneous coccidioidomycosis, since he had localized skin lesion and workup for disseminated disease was negative.

Coccidioidomycosis can be diagnosed by microscopic detection ofspherules in infected body fluid specimens and biopsy specimens of skin lesions or organs. The presence of a mature spherule with endospores as seen in our caseis the pathognomonic feature.

*C. immitis*grows within 3–7 days at 37°C on a variety of artificial media. It can be detected in culture by morphological identification or by using molecular probes that hybridize with *C. immitis* RNA. In our patient, culture of the specimen from the lesion could not be done as he was not willing for further procedures. An indirect demonstration of fungal infection can be made by serologic testing but it was not done due to unavailability in India.

Triazole antifungals - Itraconazole or fluconazole is the drug of choice for localised and milder form of the disease whereas amphotericin B is the initial drug of choice for disseminated and severe form the disease. [11]Treatment is usually prolonged; atleast 6 - 12 months of therapy, with a good outcome as in our patient.

## 4. Conclusion

Our case highlights the importance of travel history in diagnosing non - endemic infections. It also illustrates the importance of communicating clinical details to the pathologist for making a correct histopathologicaldiagnosis.

## 5. Images

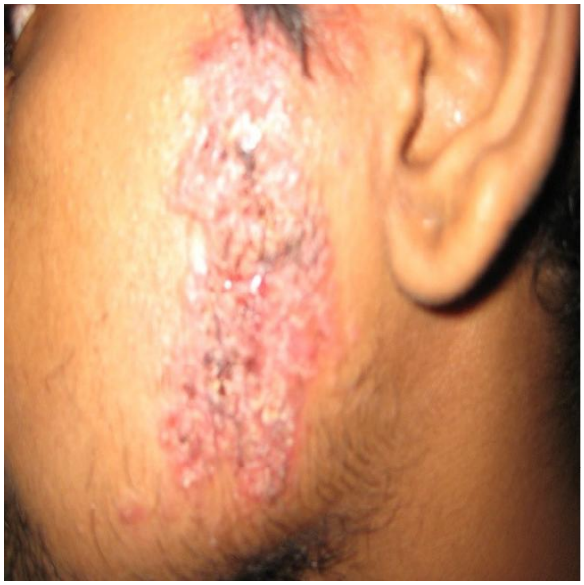

**Figure 1:** Ulcerative skin lesion in left pre - auricular region

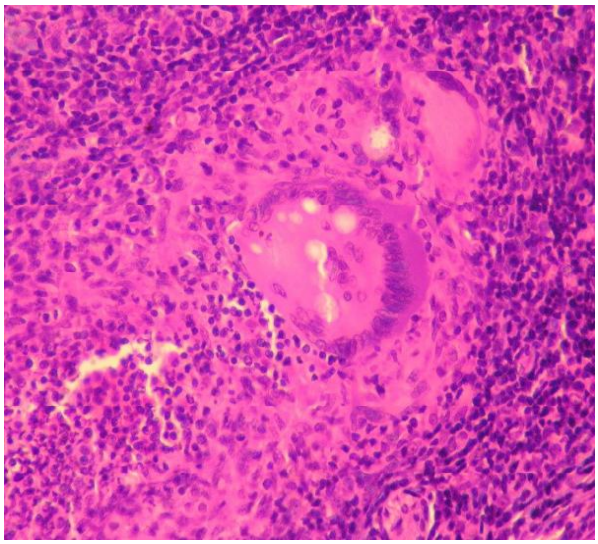

**Figure 2:** Skin biopsy specimen hematoxylin and eosin stain showing granulomas & spherules with endospores

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