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Case Report

Pathology Section

A Case of Chromoblastomycosis in Healthy Young Patient in Urban Setting: A Rare Presentation

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ABSTRACT

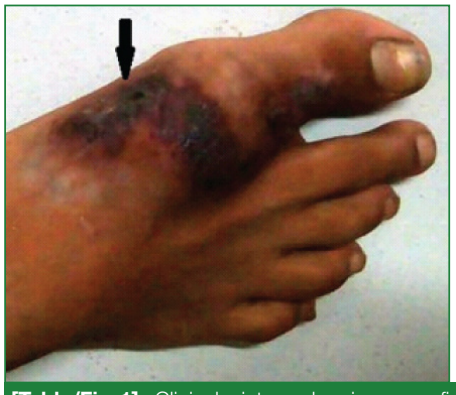
Chromoblastomycosis is a chronic subcutaneous mycosis caused by dematiaceous (black) fungus. The etiologic agent of the disease are dark walled and hence it is named as chromoblastomycosis. The disease is prevalent most commonly in people associated with farming and animal husbandry in rural areas of tropical and subtropical countries. Usually, persons with immunocompromised status have greater predilection for the disease. Here, we describe a case of chromoblastomycosis in a healthy young male without any clinical suspicion of the disease belonging to an urban area and no history of working in farms or animal husbandry or injury to the site.

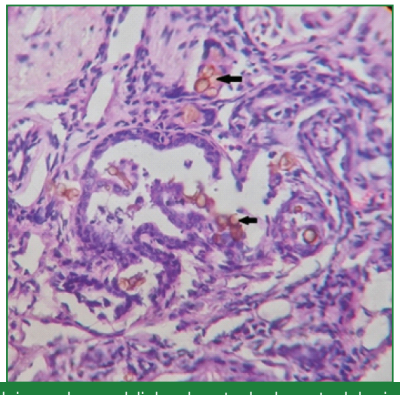
Keywords: Chlamydospores Pigmented fungus, Muriform bodies, Mycetoma

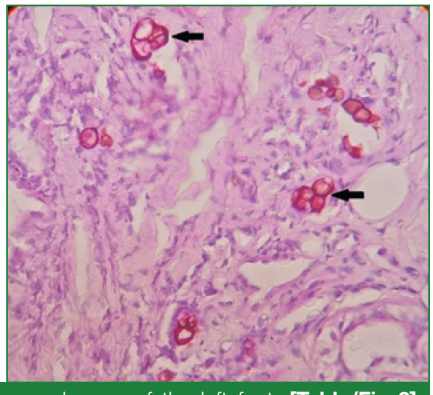
CASE REPORT

A 13-year-old young male patient presented in the Dermatology Department of our institution with the history of a non-healing painful progressive skin lesion over the dorsum of his left foot for the last two years. The lesion was first observed by the patient as a small nodular swelling two years back and gradually progressed over the course of next two years to assume the present status. During the course of illness, patient had consulted clinicians and was prescribed treatment in form of antibiotics but there was no relief. There was no preceding history of trauma to the site. The patient did not have any past history of tuberculosis or any drug intake. There was no significant family history too. The clinical examination of the patient was non-contributory. On local examination, a large superficial irregular reddish elevated ulcerated lesion of the size of 3x2 cm was present over dorsum of the left foot with active pus discharge [Table/Fig-1]. The routine investigations including hemogram, chest X-ray and blood sugar were within the normal limits.

Considering the clinical history and presentation of the patient, a possibility of mycetoma, actinomycosis or a tubercular ulcer was considered. A skin biopsy was performed and the sample was sent for histopathological examination. Simultaneously, sample was taken and subjected to KOH staining and fungal culture. Subsequently, histopathological examination revealed mild to moderate mononuclear inflammation in dermis. No granuloma was reported and staining for acid fast bacilli was negative. In the dermis, there were brownish acropetal septate chlamydospores which raised the suspicion of Chromoblastomycosis [Table/Fig-2]. Staining with Periodic Acid-Schiff (PAS) stain revealed muriform cells [Table/Fig-3]. Thereafter, fungal culture of the specimen also confirmed the diagnosis. The patient was put on oral Itraconazol 200 gm and Terbinafine 500 gm daily,







[Table/Fig-1]: Clinical picture showing superficial irregular reddish elevated ulcerated lesion over dorsum of the left foot. **[Table/Fig-2]:** Histopathological section of dermis showing brownish acropetal septate chlamydospores (black arrows) (400X; Haematoxylin and Eosin). **[Table/Fig-3]:** Histopathological section confirming the brownish acropetal septate chlamydospores (black arrows) (400 X; PAS).

treatment showed mild regression in size of the lesion within a three months of therapy. Later on, patient did not show up for follow-up.

DISCUSSION

Chromoblastomycosis is a chronic subcutaneous fungal infection. It was first described by a Brazilian scientist Alexandrine Pedroso in 1911, when he observed presence of muriform bodies in a patient in San Paulo [1]. The term chromoblastomycosis was coined by Terra F et al., [2]. Thomas E et al., reported it for the first time in India in 1957 from rural areas of Assam [3]. The disease has been reported from different parts of the world with a higher incidence from tropical and subtropical regions. However, nearly 20% of the cases are also reported from regions with temperate climate. Highest incidence is in African countries of Madagascar and a large number of the cases have been reported from Japan [4]. In India, several case reports have been reported from sub-Himalayan belt, Western and eastern coast. The infection occurs most commonly in the age group of 30-50 years with male predominance in 70% cases [5].

The disease is commonly seen in people working in farms or animal husbandry in rural areas. People with immunocompromised status or those suffering from malignant disease are at a greater risk of acquiring infection [6,7].

Chromoblastomycosis is caused by an exogenous darkly pigmented fungus of Dematiaceae family of Hyphomycetes under the phylum Deuteromycetes. *Fonsecaea pedrosoi* is the most common causative agent followed by *Phialophora verrucosa, Cladosporium carrionii*, *Fonsecaea compacta,* and *Rhinocladiella aquaspersa*. The causative agents are found in soil, woods and plants debris. The infection results from inoculation of fungi after penetrating cutaneous injury to the lower extremities thus making it the commonest site. The disease is a slowly progressive localised fungal infection occurring over exposed parts of the body with no tendency for dissemination.

Chromoblastomycosis was classified by Carrion in 1950 into nodular, plaque, tumoral, cicatrical and verrucous types [8]. Nodular, tumoral and verrucous types are common, whereas plaque and cicatrical types are seen rarely. According to severity, the disease is clinically graded into mild, moderate and severe forms. While milder forms included solitary plaque or nodular lesions measuring <5 cm in diameter, moderate lesions are solitary or multiple, nodular, verrucous or plaque type occurring singly or in combination covering one or two adjacent cutaneous regions measuring less than 15 cm. Severe forms include lesions with extensive cutaneous regions whether adjacent or non-adjacent.

Differential diagnosis includes blastomycosis, lobomycosis, prototheocosis, sporotrichosis, keratoacanthoma, tuberculosis verrucosa cutis, Hansen's disease, leishmaniasis, mycetoma, candidiasis, yaws, tertiary syphilis, paracoccidioidomycosis and phaeohyphomycosis. The diagnosis of chromoblastomycosis is made on direct examination of lesion, histopathology and fungal culture. Morphologically, the fungus is characterised by nodular crusted and raised lesions. On microscopic examination, thick walled, brownish, septate sclerotic/muriform bodies of varying size ranging from 5-10 µm are seen which is the pathognomic finding of this fungus. Medlar EA first described these sclerotic bodies in 1915 and used the term Medlar bodies for them [9]. Muriform cells, also known as Medlar bodies are adaptive form of fungus arrested between yeast and hyphae stage. They appear as brown round thick walled sclerotic bodies on PAS and Hematoxylin and Eosin staining. The fungus is viable even 18 months after isolation. The infection is difficult to treat and can lead to secondary bacterial infection, localized lymphoedema elephantiasis and dermal fibrosis. However, squamous cell carcinoma can also developed rarely, late in the course of the disease.

The disease is usually not seen in healthy individuals from urban areas without history of exposure to farms or animal husbandry work. However, few cases have been reported till date in medical literature where the disease has been seen in such a scenario. Panicker NK et al., reported similar presentation in two cases from Maharashtra with urban background and without any prior exposure [10]. Similarly in our case the diagnosis was not suspected initially as the patient hailed from urban area of Delhi and was a factory labourer. However, during the course of investigation and histopathological examination the diagnosis was established.

CONCLUSION

Chromoblastomycosis is commonly found in immunocompromised patients from rural areas, having history of working in farms or exposure to animal husbandry work. However, the possibility of this disease should be considered in differential diagnosis even in healthy patients without any prior history of exposure to farms and animals, and from urban area presenting with chronic non-healing ulcerative lesion.

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