



Cutaneous Chromoblastomycosis Mimicking Tuberculosis Verrucosa Cutis: Look for Copper Pennies!

Tüberkülozis Verrükoza Kutisi Taklit Eden Kutanöz Kromoblastomikoz

Arghya BANDYOPADHYAY¹, Kaushik MAJUMDAR², Mimi GANGOPADHYAY¹, Sabyasachi BANERJEE³

Department of ¹Pathology and ³Dermatology, North Bengal Medical College, WEST BENGAL, INDIA

²Department of Pathology, G B Pant Hospital, NEW DELHI, INDIA

ABSTRACT

Chromoblastomycosis is a rare chronic fungal infection of skin and subcutaneous tissue. It is primarily a disease of tropical and subtropical regions and affects mainly the agricultural workers following trauma with vegetable matter. Cutaneous Chromoblastomycosis may clinically mimic cutaneous tuberculosis as both the condition usually presents with hyper pigmented verrucous lesion of skin.

Here in we report a case of chronic cutaneous Chromoblastomycosis in a middle aged woman from north eastern part of India, who was initially misdiagnosed as Tuberculosis verrucosa cutis. In histopathology characteristic brown colored spores of the fungus (also known as copper pennies) were seen within dermal abscess. The organism isolated from culture of the biopsy material was *Fonsecaea pedrosoi* thus confirming our diagnosis of cutaneous chromoblastomycosis. The patient responded well to oral Itraconazole.

The dermatologists and pathologists should be aware of this condition especially when dealing with verrucous lesion of the skin. The pathologists should search for fungal spores in cutaneous lesion with pseudoeplitheliomatous hyperplasia and dermal abscess.

Key Words: Chromoblastomycosis, Dermatomycoses, Infectious skin diseases

ÖZ

Kromoblastomikoz, deri ve subkutan yumuşak dokunun nadir kronik mantar enfeksiyonudur. Öncelikle tropikal ve subtropikal bölgelerdeki tarım işçilerinde bitkilerle oluşan travma sonrası gelişir. Kutanöz kromoblastomikoz, her ikisinde de görülen hiperpigmente verrüköz deri lezyonları nedeniyle, klinik olarak deri tüberkülozunu taklit eder.

Bu makalede, Hindistan'ın kuzeydoğu bölümünde yaşayan ve başlangıçta tüberkülozis verrükoza kutis yanlış tanısı alan kronik kutanöz kromoblastomikozlu orta yaşlı bir kadın hasta sunulmuştur. Histopatolojik olarak dermal abseler içinde "bakır metelik" olarak da bilinen karakteristik kahverengi mantar sporları görüldü. Biyopsi materyalinden hazırlanan kültürde *Fonsecaea pedrosoi* izole edildi ve kutanöz kromoblastomikoz tanımız doğrulandı. Olgu, oral Itraconazol tedavisine iyi yanıt verdi.

Dermatolog ve patoloğların derinin verrüköz lezyonlarını değerlendirirken uyanık olması, özellikle psödoepitelyomatöz hiperplazi ve dermal abse içeren lezyonlarda patoloğların mantar sporlarını özenle araması gereklidir.

Anahtar Sözcükler: Kromoblastomikoz, Dermatomikozlar, İnfeksiyöz deri hastalıkları

INTRODUCTION

Chromoblastomycosis is a localized chronic infection of skin and subcutaneous tissue caused by any of the several related dematiaceous (pigmented) fungi (1). Cases have been documented from several states of India (1-5). The characteristic lesions are warty papules, verrucous plaques or solid nodules developing in the skin at the site of traumatic implantation of the fungus, usually at an extremity (6). Diagnosis depends on demonstration of the fungus in histopathological section or in culture (1). The condition is often misdiagnosed as it is clinically indistinguishable from cutaneous tuberculosis (1, 3). Here in we report a case of cutaneous Chromoblastomycosis from

sub-Himalayan region of West Bengal, India, presenting with multiple hyperpigmented verrucous plaques and was initially misdiagnosed as tuberculosis verrucosa cutis and offered treatment for the same.

CASE REPORT

A 50-year-old lady who was an agricultural worker presented to the dermatology outpatient department of North Bengal Medical College hospital with multiple hyperpigmented verrucous plaques in her right arm (Figure 1). The lesions initially appeared erythematous, and gradually became verrucous during a period of one and half years. She had no regional lymphadenopathy. Cutaneous tuberculosis

was diagnosed in a rural health centre and subsequently treated with anti-tubercular drugs for 6 months, without any response. Her routine hematological and biochemical parameters were within normal limits. Direct KOH mount for fungus were negative. Histopathology (HP) section of the skin lesion revealed marked acanthosis with pseudoepitheliomatous hyperplasia. Dermis showed inflammatory infiltrate comprising of neutrophils, lymphocytes, histiocytes and foreign body giant cells. At places, microabscess formation along with multiple round thick walled dark brown sclerotic bodies resembling “copper pennies”, in accordance with the morphology of chromoblastomycosis were seen (Figure 2). These fungal spores were 5-12 μm in diameter, present in singles, small chains and small clusters (Figure 3). The spores also showed intracellular wall formation, that indicates reproduction. Ziehl-Neelsen (ZN) stain for acid fast bacilli (AFB) was negative. The organism isolated from culture of the biopsy material was *Fonsecaea pedrosoi* thus confirming our diagnosis of cutaneous chromoblastomycosis. The patient responded well to Itraconazole 100 mg twice daily and she was on monthly follow up. The lesion gradually subsided by 6 months.

DISCUSSION

Chromoblastomycosis was first described in 1914 by Max Rudolph in Brazil (2). Subsequently Medlar described the characteristic histological appearance of sclerotic bodies, which thereafter were named as ‘Medlar bodies’. Other synonyms are “copper-pennies” or “mauriform” cells (2). Chromoblastomycosis is belong to phaeohyphomycosis group and caused by dematiaceous (naturally pigmented) fungi such as *Fonsecaea pedrosoi*, *Phialophora verrucosa*, *Fonsecaea compactum*, *Cladophialophora carrionii*, *Exophiala*

jeanselmei, *E. castellanii* and *Rhinocladiella aquaspersa*. *Fonsecaea pedrosoi* is the most common causative agent of this condition (1, 7).

Chromoblastomycosis is an indolent cutaneous infection, which can present as nodular, plaque like, verrucous, or cicatricial lesions (6). The disease is cosmopolitan in distribution but most cases are encountered in tropical or sub-tropical regions. Mode of transmission is inoculation of soil or vegetable matter contaminated by the pigmented fungi though minor trauma (8). Our patient being an

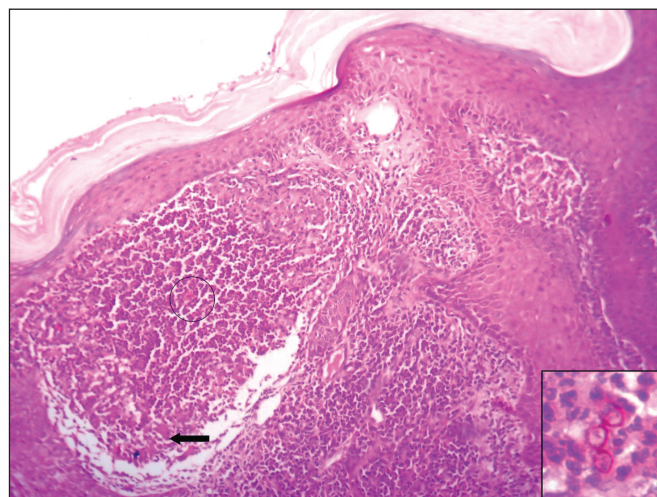


Figure 2: Scanner view of the histopathology section showing pseudoepitheliomatous hyperplasia, dermal abscess formation, collection of multinucleated giant cells (arrow) and barely visible fungal profiles (encircled) in this magnification (H&E stain, x40) Inset: Brown-colored spores of Chromoblastomycosis (copper pennies) (H&E stain, x400).



Figure 1: Hyperpigmented verrucous lesion in the arm.

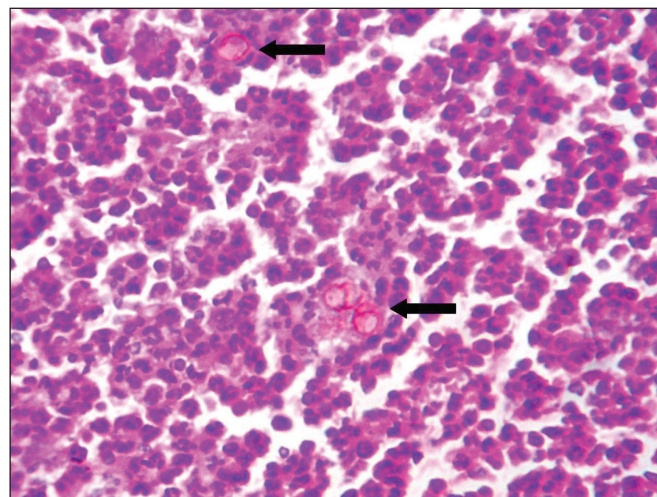


Figure 3: Higher magnification showing brown-colored spores of Chromoblastomycosis (copper pennies) within dermal microabscess (H&E stain, x400x).

agricultural worker, may have encountered a similar trivial injury which she could not recollect.

Primary lesions develop at the site of injury and remain localized for many years (8). New lesions develop by autoinoculation or through propagation by lymphatic vessels causing elephantiasis; hematogenous spread can also occur rarely. Development of squamous cell carcinoma had also been reported in the long standing cases (9). The HP of cutaneous Chromoblastomycosis reveals pseudoepitheliomatous hyperplasia, dermal abscess formation, chronic granulomatous inflammation with multinucleated giant cells and diagnostic 'copper penny' bodies (1, 2, 10). In this case though well defined granuloma was not observed, histiocytes and foreign body giant cells were noted. As the spores are naturally pigmented with melanin, diagnosis can be made on morphology alone; no special stains are required to demonstrate the fungi (10). The brown colored sclerotic bodies are best demonstrated in H&E sections and easily identified in colorless background of unstained or de stained sections (10). Thus examination of unstained or de stained sections for spores after their detection in H&E section provides confirmation of diagnosis without the use of unnecessary special stains (10). Causative agents of chromoblastomycosis can be distinguished in culture but their tissue forms are identical. Culture of the organism show slow growing green to black colonies, and microscopic appearance of the conidia formation identifies the species (1, 4).

Clinically the condition may simulate tuberculosis verrucosa cutis, squamous cell carcinoma, plomplantar psoriasis and sporotrichosis (1,2,3). This case was misdiagnosed as tuberculosis verrucosa cutis clinically and undergone treatment for the same, with no response. Pradeepkumar et al. (1) and De et al. (3) also reported cases of Chromoblastomycosis mimicking cutaneous tuberculosis.

Treatment of Chromoblastomycosis is not well established (3). Previously radical, often mutilating surgery was considered as the optimal approach (4). Recently itraconazole (200-400mg/ day) has been effectively used with 80-90% success rate (3). This patient also responded well to itraconazole, with resolution of lesion within 6 months.

In conclusion, physicians, dermatologists and pathologists should consider chromoblastomycosis as one of the differentials during work up of verrucous lesions of the skin. The pathologists should purposefully search for the fungal profiles and 'copper pennies' in verrucous cutaneous lesions with pseudoepitheliomatous hyperplasia and dermal abscess.

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