

Letter to the Editor

Hunt for the copper penny: A misdiagnosed case of chromoblastomycosis

Shikha Verma¹, Binod Kumar Thakur²

¹Department of Dermatology, North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, ²Department of Dermatology, Nazareth Hospital, Shillong, Meghalaya, India.



***Corresponding author:**

Shikha Verma,
Department of Dermatology,
North Eastern Indira Gandhi
Regional Institute of Health
and Medical Sciences, Shillong,
Meghalaya, India.

shikha.b.thakur@gmail.com

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Dear Sir,

Chromoblastomycosis (CBM) is a chronic, granulomatous subcutaneous infection caused by traumatic inoculation of the dematiaceous fungi into the skin. In 2017, CBM was added to the list of WHO-recognized Neglected Tropical Diseases. CBM poses diagnostic challenges in some cases where classical histopathological findings are not diagnostic. We hereby report an interesting case of misdiagnosed CBM in a 45-year-old man.

A 45-year-old man, a farmer by occupation, from Meghalaya, India, presented with a plaque on the left buttock and adjacent thigh for 3 years. The lesion started as small papules, which gradually enlarged and coalesced to form a 10 × 10 cm sized plaque. The plaque was irregular in shape, erythematous, scaly, with advancing margins and areas of atrophy in a few places [Figure 1a]. There was no history of (H/O) itching or pain, no H/O trauma or insect bite, no H/O cough, fever, or weight loss. Routine blood investigations were within normal limits. Chest X-ray was normal. The Mantoux test was positive. Histopathological examination of the lesion showed hyperkeratosis, acanthosis, and the presence of multiple well-formed tuberculoid granulomas in the upper dermis. Foreign body giant cells with mild foamy changes were also seen. Acid-fast bacillus stain and periodic acid-Schiff stain were negative [Figure 1b]. After clinicopathological correlation, we provisionally diagnosed the case as Lupus vulgaris (Plaque type). Anti-tubercular therapy (ATT) was initiated, and the patient was told to review after 6 weeks. However, the patient did not review after 6 weeks and was lost to follow-up.

The patient reported again after 8 months of the first visit. Despite the completion of 6 months of ATT, the lesion did not show any sign of improvement. Repeat biopsy was done, and the sample was sent for histopathological examination and fungal culture. Epidermis showed hyperkeratosis, acanthosis, and papillomatosis. There was a presence of multiple suppurative granulomas in the dermis with neutrophils, eosinophils, lymphocytes, and Langhans giant cells. A few foreign body giant cells were also seen. Numerous copper penny bodies were present in the dermis [Figure 1c]. There was growth of *Fonsecaea pedrosoi* in fungal culture [Figure 1d].

The case was finally diagnosed as CBM. Oral Itraconazole 200 mg/day was given to the patient for 6 months. The lesion responded well to treatment and healed with scarring and depigmentation, except for some of the margins, which were excised [Figure 2a and b].

The main host defense against CBM is the ingestion and elimination of fungal cells by neutrophils and macrophages of the innate immune system. Furthermore, the severity and

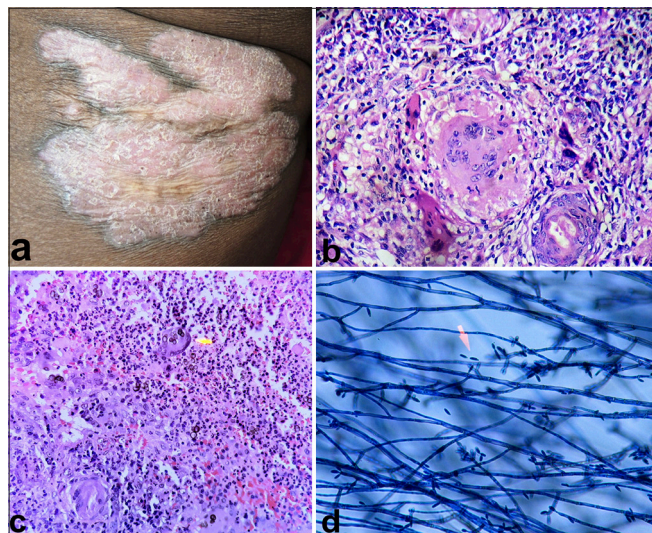


Figure 1: (a) Well-defined, irregular, erythematous, scaly plaque on the buttock with advancing margins and areas of atrophy in a few places. (b) Tuberculoid granulomas, foreign body giant cells with mild foamy changes in the upper dermis (First biopsy specimen) (Hematoxylin and Eosin [H&E] $\times 400$). (c) Suppurative granulomas with numerous copper penny bodies in dermis (Second biopsy specimen) (Arrow) (H&E $\times 400$ X). (d) Elliptical conidia of *Fonsecaea pedrosoi* (Lactophenol cotton blue stain $\times 400$) (Arrow).

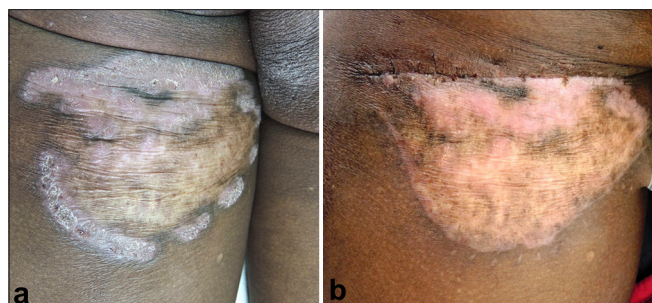


Figure 2: (a) Healing with scarring and depigmentation after 6 months of itraconazole therapy. (b) Final results after excision of non-responsive margins.

clinical morphology of CBM lesions depend on host immune responses as a result of cytokine production from T-helper1 (Th1)/T-helper2 (Th2) cells.^[1-3] The severe and extensive forms of CBM are related to Th2 profile and high fungal load^[2,3], less severe forms (plaque type) are related to Th1 dominant response with compact granulomas.^[2,4]

Carrion classified CBM into five clinical types:^[4] Nodular, verrucous or warty, plaque (infiltrative or erythematous), tumoral, and cicatricial or atrophic types. Plaque-type and cicatricial types are prone to misdiagnosis both clinically and histopathologically due to a predominant Th1 response.

Our case presented clinically with lupus vulgaris-like morphology and with tuberculoid granulomas without any copper penny bodies initially, which led to misdiagnosis.

Due to clinicopathological mimicry to lupus vulgaris, fungal culture was not performed. However, after 8 months, the repeat histopathological examination showed suppurative granulomas with numerous copper penny bodies. Fungal culture was positive for *Fonsecaea pedrosoi*. In this case, we noticed a unique phenomenon where the host tissue is showing a variable histopathological response to the same fungus over a period of time. Furthermore, this case emphasizes the importance of repeated histopathological examination and fungal culture in doubtful cases, especially in the CBM endemic areas. Fungal microscopy and culture are now recognized as WHO essential diagnostic tests, and better training in their application will help improve the situation.

It is hereby concluded that CBM may present with many clinical and histopathological variations. A high index of suspicion is required, especially in endemic areas, to avoid misdiagnosis.

Ethical approval: The Institutional Review Board approval is not required.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for 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.

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