Case Report

Trichophyton schoenleinii causing Tinea corporis: A rare etiological agent

S. Thakur1*, A. sood2

1Senior Resident, 2Assistant Professor Department of Microbiology DRPGMC Tanda.

Abstract

Dermatophytosis is a superficial fungal infection confined to the stratum corneum and appendages of the skin. Health education, timely diagnosis and treatment has brought down the fungal infection rate in developed countries but it is still common in developing countries. Tinea corporis refers to all the dermatophyte infections of the glabrous skin which is caused mainly by Trichophyton rubrum or Trichophyton tonsurans. We here present a rare case report of tinea corporis caused by Trichophyton schoenleinii.

Introduction

Dermatophytoses are considered one of the most prevalent public health problems in economically underdeveloped and developing countries seen in man and animals affecting skin, hair and nails.1 Dermatophytes are hyaline septate moulds with more than 100 species described divided into three main anamorphic genera i.e. Trichophyton, Microsporum and Epidermophyton depending on their morphological characteristics.2 Clinical information such as the site, appearance of the lesion, geographic location, travel history, animal contacts and race is also important, especially in identifying rare non-sporulation species like M. audouini, T. concentricum and T schoenleinii etc.

Trichophyton schoenleinii, ananthropophilic fungus, generally cause tinea capitis favosa, a chronic inflammatory dermatophyte infection of the scalp and is transmitted by contact between humans. Nowadays, the incidence has decreased worldwide, due to improvements in living
conditions and hygiene as well as early appropriate diagnosis and availability of antifungals.\cite{3} Favus of the glabrous skin and nails are reported less frequently than favus of the scalp.\cite{4} We are presenting a rare case report which shows involvement of glabrous skin with *T. schoenleinii*.

**Case report**

A 49 years old male presented to the outpatient Department of Dermatology, Dr. RPGMC Tanda. His chief complaints were erythematous lesions on the dorsum of left arm since past two and a half months. The lesions were intensely itchy and gradually increased in size and number. There was no history of diabetes mellitus or any steroid intake. On examination the lesions were scaly, erythematous and varying from 2-8cm in diameter. Two of the lesions were ulcerated and showed secondary suppuration. History of use of ointments for treatment from local practitioner was obtained. Skin scrapings from the lesions were taken, processed for fungal culture and KOH examination. No involvement of nails and hair was seen in the patient. Ten % potassium hydroxide preparation revealed the presence of septate, branching hyaline hyphae of width 2-3µm. The culture on Sabouraud dextrose agar at 25°C yielded slow growing white limited colonies producing ramifications that submerged into agar. (Fig. 1). On 21 days of inoculation Lactophenol cotton blue preparation revealed the presence of multiple branched hyphae known as favic chandeliers, terminal dilation of hyphae giving a nail head shape known as favic nails and some chlamydoconidia (Fig. 2a and b). It showed colour change on dermatophyte test medium from yellow to red. (Fig 3) and was urease positive (Fig 4). Based on the clinical and mycological data, the diagnosis of tinea corporis by *T. schoenleinii* was made.

**Discussion**
Superficial fungal infections of the skin can be caused by dermatophytes, yeasts and non-dermatophytes. Dermatophytes are still considered as the major public health problem in the world. Tinea corporis is the most common clinical presentation of dermatophytoses and it refers to all the dermatophyte infections of the glabrous skin of trunk, legs, arms, and neck. The most common causative agent of tinea corporis is T. rubrum (incidence ranging from 32% to 60% of cases), followed by T. tonsurans (in 17.7–34.3% of cases). Tinea corporis is more frequent in tropical and subtropical areas. The infections are usually acquired by autoinoculation from other areas of the body such as the feet or scalp or by contact with animals. The differential diagnoses like atopic dermatitis, allergic contact dermatitis, psoriasis, pityriasis versicolor, pityriasis alba, erythema migrans can further interfere in diagnosing and differentiating from fungal infections.

*T. schoenleini* is classically associated with infection of the scalp i.e. favus and the classical favus lesion is the “scutulum”, a concave cup shaped yellow crust on the scalp that is associated with severe alopecia. Only 5% cases of *T. schoenleini* present as atypical tinea favosa e.g. pityroides, psoraisiform, follicular and impetiginous forms that have been observed both on scalp and glabrous skin. This particular species of trichophyton is rarely reported in literature but Kennydy Kumar et al from Chennai have reported 5.9% isolation rate of *T. schoenleini* causing tinea corporis. *T. schoenleini* can also infect the nails as reported by Anna et al and Ahmad et al. This case is rare as the patient had scaly, erythematous, itchy lesions with few ulcers and suppuration on the left arm without any involvement of scalp and hair. This report is the first of its kind from our area.

**Conclusion**
Although a rare isolate *T. schoenleinii* can cause tinea corporis, especially in tropical and subtropical countries. Patient can also have atypical presentation of favus and thus leading to wrong diagnosis and persistence and thus transfer of infection to the near ones. So, correct diagnosis is required at an early stage till species level and then followed by proper treatment. Further long term epidemiological studies can be done to know the prevalent dermatophytes in the given area.

**References**


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Fig 1: Submerged colony of *T. schoenleinii* on Saboraud’s dextrose agar

Fig 2a: Favic chandeliers on Lactophenol cotton blue
Fig2b: Chalmydioconidia

Fig: 3 Colony on DTM

Fig 4: Positive urease test

How to cite this article: Thakur S, Sood A. Trichophyton schoenleinii causing Tinea corporis: A rare etiological agent. International Journal of Epidemiology and Public Health 2016 ;1(1):125-130

Address for correspondence: Suman Thakur, Senior Resident, Department of Microbiology, DRPGMC Tanda Email: suman_thakur13@yahoo.com

Date Received: 28th June 2016 Date Accepted: 30th June 2016