Scholars Journal of Medical Case Reports

OPEN ACCESS

Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com/journal/sjmcr/home

Isolation of *Trichophyton Schoenleinii* in a Case of Favus from a Tertiary Care Center of Tripura, North-Eastern India- A Case Report

Tapan Majumdar[1], Mousumi Paul[2*], Dr. Ankan Chakrabarti[3]

[1]Associate Professor, Department of Microbiology, [2]Postgraduate Trainee, Department of Microbiology, [3]Post Graduate Trainee, Agartala Government Medical College & GBP Hospital, Agartala, Pin no. 799006, Tripura India

DOI: 10.36347/SJMCR.2019.v07i11.014 | **Received:** 16.11.2019 | **Accepted:** 23.11.2019 | **Published:** 25.11.2019

***Corresponding author:** Dr. Mousumi Paul

Abstract **Case Report**

Favus, also known as tinea favosa, is a chronic inflammatory dermatophytic infection usually caused by *Trichophyton schoenleinii* [1-4]. Rarely, favus is caused by *Trichophyton violaceum*, *Trichophyton mentagrophytes* var *quinckeanum* or *Microsporum gypseum* [1]. Favus typically affects scalp hair but also may infect glabrous skin and nail. Favus is a severe clinical form of tinea infection of scalp that usually involves children. This case is reported for its rarity in this part of the country. We report a case of favus caused by *Trichophyton schoenleinii* infection in an otherwise healthy 10 years old girl child from a rural background of Tripura. She was presented with diffuse multiple itchy lesions with yellowish cup like crusts allover scalp and partial alopecia for last 20 days. After a detail microbiological investigation, we have isolated *Trichophyton schoenleinii* from the patient and accordingly she was treated successfully with antifungal medicines. This is the first case report of favus caused by *Trichophyton schoenleinii* from Tripura, a North-eastern state of India.

Keywords: Alopecia, Dermatophytic, Favus, Tinea favosa, *Trichophyton schoenleinii*.

INTRODUCTION

Favus is a rare inflammatory type of tinea capitis, an infection caused by Trychophyton or Microsporum fungi that predominately affects the scalp. This infection usually involves children. It presents clinically as waxy honeycomb-like crust on scalp. It is a chronic inflammatory response of host, principally against the antigens of dermatophyte involved & not to secondary bacterial infection. The etiological agents of favus are- *Trychophyton schoenleinii*, *Trichophyton violaceum*, *Trichophyton mentagrophytes* var *quinckeanum* and *Microsporum gypseum* [1]. It is often misdiagnosed as bacterial infection by the physician. This condition may lead to alopecia and scarring. Favus is prevalent in South Africa, Middle-East, South-Eastern Europe and the Mediterranean regions [1, 5]. It has been reported in Kashmir valley but it is becoming very rare due to an overall increased hygienic standard of the public at large [6]. Although a very few cases of favus have been reported from India, but this is the first case report from Tripura, North-eastern region of India.

CASE HISTORY

A 10 years old school going girl child from a rural background of Tripura was presented to our institute with a 20 days history of diffuse involvement of scalp with multiple yellowish cups like itchy crusts all over the scalp and partial scarring alopecia (Figure-1). She was malnourished but there was no other history of any systemic infections. The lesions were multiple, of varying sizes with yellowish crusts and matted hair. Those lesions were present all over her scalp with cicatricial alopecia. Removal of the crusts left behind red and raw area. No other part of body had such lesions. No lymphadenopathy was detected. At first it was suspected as a case of seborrheic dermatitis with secondary bacterial infection and a course of antibiotic was prescribed by dermatologist but no improvement was noticed. After 7 days of treatment, she was sent to microbiology department for isolation of causative agent.

Fig-1: Diffuse involvement of scalp with multiple yellowish cup like itchy crusts and partial scarring alopecia

Clinical diagnosis

Seborrheic dermatitis

Differential diagnosis

1) Seborrheic dermatitis 2) Tinea capitis 3) Pyogenic infection

Routine blood examination

Routine hematological examination was with in normal limit except rise in eosinophil count (8%) and raised erythrocyte sedimentation rate (118 mm in 1st hour).

Microbiological investigation

Sample was collected by scrapping those lesions after removing crusts following cleaning the site with cotton soaked with normal saline and 70% alcohol. Potassium hydroxide (10% KOH) wet mount was done from the scrapped material and one part of the material was inoculated in 2 pair of Sabourauds dextrose agar media (one pair with cyclohexamide and gentamicin) for fungal isolation. On KOH wet mount multiple short branching hyaline hyphae with terminal swelling were seen (Figure-2). After 10 days incubation, 25^{0}C Sabourauds dextrose agar culture tubes showed the presence of white powdery, leathery heaped up surface on obverse side with no pigmentation on reverse side (Figure-3). But there was no growth at Sabourauds dextrose agar culture tubes of 37^{0}c. For morphological identification of the fungal pathogen in details, slide culture test was performed. After 3 days incubation of slide culture at 25^{0}c Lacto phenol cotton blue (LPCB) mount was performed to identify the organism. LPCB mount was showing characteristic hyphae- long segmented with knobby ends (Favic Chandeliers) (Figure-4). No macroconidia was present but a few microconidia were seen along the side of hyphae. Abundant chlamydospores (both terminal & intercalary) were present (Figure-5). All these microscopic morphological characteristics were suggestive of *Trichophyton schoenleinii*. Hair perforation test and urease test was negative for the isolated fungus (Figure-6).

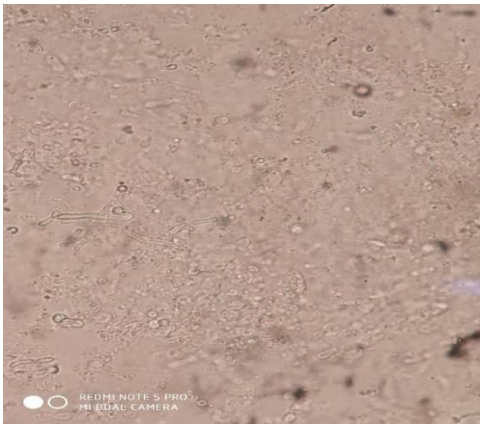

Fig-2: KOH wet mount showing multiple short branching hyaline hyphae with terminal swelling

Fig-3: SDA culture tubes showing white powdery, leathery heaped up surface on obverse side

Fig-4: LPCB mount showing characteristic hyphae- long segmented with knobby ends (Favic Chandeliers)

Fig-5: LPCB mount showing chlamydospores

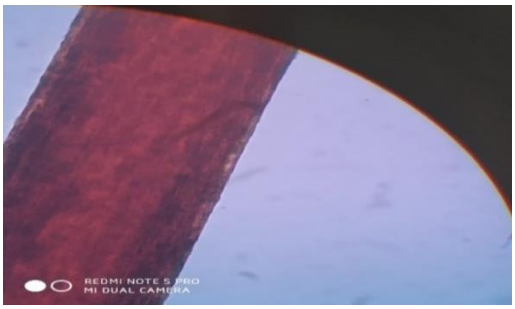

Fig-6: Hair perforation test (negative)

Final diagnosis

From the clinical history, clinical finding, macroscopic & microscopic morphology of the isolate- it was identified as a case of favus caused by *Trichophyton schoenleinii.*

Management

Following the microbiological diagnosis, she was prescribed with tablet Terbinafine 250 mg once daily with 2% Ketoconazole shampoo for local application for duration of 4 weeks. The patient improved with this treatment.

DISCUSSION

Tinea capitis is a dermatophyte infection involving scalp, which predominately affects hair shaft as well as contiguous scalp. Several studies have been published on the clinical and mycological aspects of Dermatophytoses from different parts of India [2-6]. But most of them do not consist of Favic lesions, except studies from Kashmir [6, 7]. A case of favus was reported from Haryana by Nigam *et al*. but in recent past there is no documented case report from India on favus has been found [8]. *Trichophyton schoenleinii* is a rare dermatophyte in India. It is believed to be endemic in Kashmir, Rajasthan and Punjab [9]. In our case we have isolated *Trichophyton schoenleinii* which is an anthropophilic dermatophyte, responsible for chronic persistence dermatophytic infections, from a case of favus. It might be mistaken for bacterial infections such as impetigo, folliculitis. Both conditions display similar clinical features such as inflammation, crust formation & hair loss. Similar to our case, there are reports of favus misdiagnosed as bacterial infection & treated with multiple antibiotics, resulting in delayed definitive diagnosis [3, 5].

CONCLUSION

Favus can easily spread to other areas such as face, if left untreated. It is also contagious and affect other family members. It can lead to long term morbidity such as scarring and alopecia. Thus high index of suspicion and appropriate laboratory test is the needed to diagnose and proper treatment of favus on time.

REFERENCES

1. Jagadish Chander.Dermatophytosis. In: Niranjan nayak. Text book of Medical Microbiology.4th edition. Jypee; 2018: 162-200.
2. Cecchi R, Paoli S, Giomi A, Rossetti R. Favus due to *Trichophyton schoenleinii* in a patient with metastatic bronchial carcinoma. Br J Dermatol. 2003 May. 148(5):1057
3. Khaled A, Mbarek LR, Kharfi M, Zeglaoui F, Bouratbine A, Fazaa B, Barek MK. Tinea capitis favosa due to Trichophyton schoenleinii. Acta dermatovenerologica alpina panonica et adriatica. 2007 Mar 1;16(1):34.
4. Raszeja-Kotelba B, Adamski Z, Pawlowicz A. A case of tinea favosa capitis caused by *Trichophyton schoenleinii*. Przegl Dermatol. 1993, 80:518-24.
5. Siddaramappa B, Hemashettar MB, Patil SC. Favus from South India-A case report. Indian j Dermatol Venereol Leprol. 1991; 57:43-4.
6. Marquis L. Fungi, fragile, fastidious, fastinating. Indian j Dermatol Venereol Leprol. 1986; 52:251261.
7. Hassan I, Rather PA, Sajad P. Favus in an elderly Kashmiri femae: A rare occurrence.Indian j Dermatol. 2013;58(5):411
8. Nigam PK, Pasricha LS, Banarjee U. Favus in a Haryana village. Ind J Dermatol Venereol Leprol.1990; 56:137-8.
9. Dey NC, Grueber HLE, Dey TK. Medical Mycology. 2nd edition.Allied Agency, Calcutta. 1973: 267.