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RESEARCH ARTICLE

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Fungi associated with Razor Bumps in Sokoto Metropolis, Nigeria

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ABSTRACT

25 Sample were collected from of individuals affected with razor bumps from Sokoto metropolis and brought to mycology laboratory of Usmanu Danfodiyo University, Sokoto. Different fungi were isolated and identified from the sample collected. The fungi isolate were identified based on morphological and cultural characteristics, the fungal species includes: Trichophyton verrucosum, Microsporum ferrugineum, Trichophyton schoenleinii, Trichophyton rubrum, Trichophyton concentricum, Trichophyton soudanense, Microsporum canis, and Microsporum gypseum. Among these fungal isolates, T.schoenleinii and T. rubrum was found to have higher frequency of occurrence of 17.64% while Microsporum ferrugineum, Trichophyton concentricum, and Microsporum gypseum with least frequency of 5.88% respectively.

INTRODUCTION

Tinea barbae, also called tinea sycosis, is a mycosis usually caused by zoophilic and anthropophilic dermatophytes. The infection is more common in rural areas, and usually involves the hair and hair follicles of the beard and mustache. It is an exceptional tinea, limited only to adult males, and occurs in two modalities: mild superficial, very similar to the common tinea, and deep, which typically causes pustular folliculitis or severe kerion-like inflammation [8], [14]. Tinea barbae is a rare dermatophytic infection that is limited to the beard area of the face and neck [4]. Infection occurs almost exclusively in males – teenagers and adults. Typical clinical symptoms are severe pustular eruption, deep inflammatory plaques or non-inflammatory superficial patches [17], [16]. This problem is common among colored race including African, Caribbean, Afro American and Hispanics. In medicine, it is termed as persistent irritation caused by shaving [13].The most common cause of bumps can be attributed to the use of infected and un-sterilized blades, clippers, bad and blunt chipper blades. Generally tinea barbae is infrequent, but it is more common in areas where weather conditions are tropical, characterized by high temperature and humidity [15]. Almost exclusively adult males are affected because this dermatophytosis is localized in the hairs and hair follicle of the beard and mustache.

Tinea barbae is caused by zoophilic and antropophilic fungi. Zoophilic dermatophytes – *Trichophyton mentagrophytes* and *Trichophyton verrucosum* are most often responsible for inflammatory Kerion-like plaques and infection caused by them was more severe. Infections caused by other zoophilic fungi example *Microsporum canis* and *Trichophyton mentagrophytes* are rare [14], [7]. In recent years some authors described similar lesions caused by the antropophilic fungus *Trichophyton rubrum* [9].

MATERIALS AND METHODS

Sample collection

Cotton wool and methylated spirit was used to surface sterilizes the identified position. The methylated spirit was left for some minute to dry up. Razor blade was used to scrape up the identified position. The sample collected was inoculated into culture media and labeled appropriately. Vaseline was used to cover the injured position. It was then brought to the mycology laboratory in the Department of Biological Sciences of Usmanu Danfodiyo University, Sokoto for laboratory analysis.

Media preparation

The media used in this research was Potato's Dextrose Agar (PDA). The media was prepared in accordance to the manufacturer's instructions. Thirty nine grams (39g) of Potato's Dextrose Agar (PDA) was weighed together with Streptomycin solvent (to prevent bacteria growth) and dissolved in 1000ml of distilled water, with adjusted pH of about (5.6), the media was well shake and then autoclaved at 121^0C for fifteen (15) minutes. The sterile medium was allowed to cool down to 45^0C before it was poured aseptically into sterile Petri-dish [5].

Isolation of Fungi

The samples was sterilized for 60 seconds in 1% sodium hydro chlorite and rinsed in three changes of sterile distilled water. Segment of the sterilized isolate of 5mm in diameter were placed on Potato's Dextrose Agar (PDA) [2], and incubated at room temperature (28 ± 2) for 21 days at which time, the development and growth of the fungi was evident of the medium.

Sub-Culturing

Small portion of each of the different fungal colonies was aseptically placed in the center of the Potato's Dextrose Agar (PDA) plate and allowed to be incubated at room temperature (28 ± 2^0C) for 21 days, in order to obtain pure culture of each isolate. The developing fungal colonies were sub-cultured repeatedly on same fresh medium until pure culture of the isolate was obtained [6].

Fungal Identification

The pure cultures of the isolate each of different coloration were subjected to microscopic examination with the view to identify the organisms present. Clean grease free glass slide was used for identification. A drop of water was placed in the center of the slide and a small portion of the fungal pure isolate was cut out aseptically with a sterile inoculating needles. The piece was placed on the water droplet and teased out and covered with a cover slip. The slide was mounted on the microscope for observation. The viewing was done with the lower magnification (X_{40}) objective. The nature of the mycelia, the types of fruiting bodies and the spore structures served as the criteria for the identification of the isolates. The isolates were compared and confirmed with that of mycological atlas, (Fisher, 1988).The isolates were identified based on morphological and culture characteristics in accordance with [3], [1].

RESULTS

Fungal Associated with Razor Bumps

Mycological analysis of the razor bumps revealed it was infected with fungi. Eight different fungal species were isolated from the razor bumps. These isolated fungal species are:-*Trichophyton verrucosum, Microsporum ferrugineum, T. schoenleinii, T. rubrum, T. concentricum, T. soudanense, M. canis* and *M. gyseum.*

Frequency of Occurrence of the isolated fungi

Out of these isolated fungi, *T. schoenleinii* was the most frequently isolated fungus with 23.52% of occurrence, followed by *T. rubrum* and *M. canis* with 17.64%, and the least isolated fungi were *M. ferrugineum*,*T. concentricum* and *M. gypseum* each with 5.88% respectively as shown in the Table 1 below.

Table 1: Frequency Occurrence Of Fungi Identified From Razor Bumps.

Fungi Identified	Frequency of Occurrence	Percentage Of Occurrence (%)
Trichophyton verrucosum	2	11.76
Microsporum ferrugineum	1	5.88
Trichophyton schoenleinii	4	23.52
Trichophyton rubrum	3	17.64
Trichophyton concentricum	1	5.88
Trichophyton soudanense	2	11.76
Microsporum canis	3	17.64
Microsporum gypseum	1	5.88

DISCUSSION

Eight different species of fungi were isolated and identified from the sample collected of razor bumps, *Trichophyton verrucosum, T. shoenleinii, T. concentricum, T. rubrum, T.soudanense, Microsporum ferrugineum, M. canis,* and *M. gypseum.* This result was in conformity with the findings of [11], [12], who isolated different species of fungi from tinea capitis and tinea sycosis which includes *Trichophyton schoenleinii, Microsporum gallinae, T. mentagrophyte, T. tonsurans, T. yaoundei, T. rubrum* and *M. gypseum* from Kano and Plateau state of Northern part of Nigeria. [10], also isolated *Microsporum audouinii, M.ferrugineum* and *T. mentagrophyte* from tinea capitis in Anambra state which was the same with the result from the present work.

CONCLUSION

From the result, it is seen that *Trichophyton schoenleinii* was more frequently isolated than other fungi isolates and *Microsporum ferrugineum, Trichophyton concentricum* and *Microsporum gypseum* were less isolated which shows that they were less common. From the result, it is therefore recommended that the use of sterilized barbing tools such as barbing clippers should be observed. Individuals are also strongly advised to obtain their own barbing tools to avoid being exposed.

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