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Tinea cruris and Tinea genitalis: Clinical manifestations and diagnostic challenges

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Abstract

Identification of dermatophyte causing Tinea cruris and Tinea genitalis by culture, biochemical and morphological characteristics in 260 cases during past six months, from February 1 to July 30, 2016.

METHODS: Patients suffering from Tinea cruris or Tinea genitalis were scrapped from the affected area after cleaning the part with 70% alcohol. Potassium Hydroxide (KOH 20%) were prepared for microscopy to see the fungal elements. Cultures were set up to study the morphological characteristics and for performing the biochemical tests and in vitro hair perforation test.

RESULTS: All two hundred and sixty isolates were positive for microscopy and culture and were identified as *Trichophyton interdigitale* (former *Trichophyton mentagrophyte*) was found to be the only species responsible for all the cases of tinea infection. More males were affected than females. Few single females were suffering from the tinea infection. Most of the married females, who had Tinea cruris or Tinea genitalis, gave the history of their spouses having acquired the infection first.

KEY WORDS: *Trichophyton interdigitale*, Tinea cruris, Tinea genitalis

Introduction

Tinea cruris and Tinea genitalis are superficial dermatophyte infections and occur all over the world, but more common in tropical counteries. Commonly, this is called ringworm. In Tinea cruris, there is dermatophyte infection of groin, but genitalia are usually spared even if the infection is extensive, whereas in Tinea genitalis, scrotum and penis are affected (Figure 1) and in females, labia majora and mons pubis are involved (Figure 2). Until now, *Trichophyton rubrum* has been the most frequently isolated species, followed by *Trichophyton mentagrophyte*, *Epidermophyton floccosum* and *Trichophyton verrucosum*.

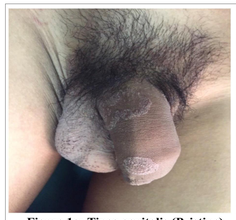

Figure 1a: Tinea genitalis (Pristine)

Figure 1b: Tinea corporis et Tinea cruris with Tinea genitalis

Figure 1c: Tinea genitalis

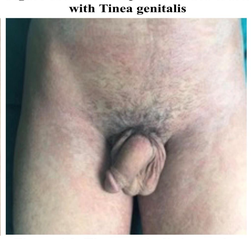

Figure 1d: Tinea genitalis incognito

Figure 2a: Tinea genitalis (Pristine)

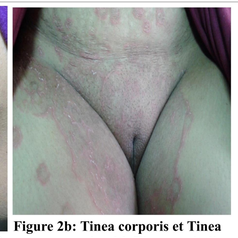

Figure 2b: Tinea corporis et Tinea cruris with Tinea genitalis

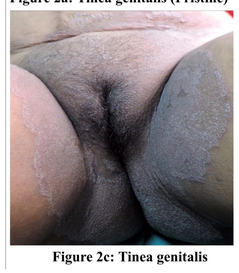

Figure 2c: Tinea genitalis

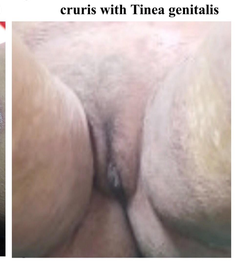

Figure 2d: Tinea genitalis incognito

Methods

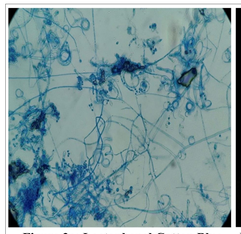

Figure 3a: Lactophenol Cotton Blue (LPCB) mount

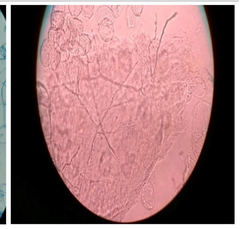

Figure 3b: Potassium hydroxide (KOH) mount

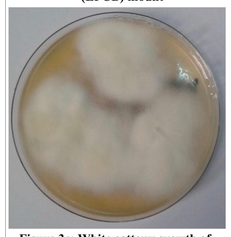

Figure 3c: White cottony growth of T. interdigitale

Figure 3d: Various combinations of topical steroid creams and antifungal agents

The study was conducted from February 1, 2016 to July 30, 2016 at a tertiary care hospital of Western Uttar Pradesh, India. A total of 260 cases either with Tinea cruris or Tinea genitalis were enrolled for the study.

Skin scrapings were taken from the affected areas in groin or from genital lesions, after thoroughly cleaning the lesions with 70% alcohol. Scrapings were also taken from any concomitant lesions elsewhere, e.g. toe nail, Tinea pedis, Tinea corporis, if any and was processed and cultured separately in order to differentiate between autoinfection or mixed infection.

All the samples were examined for fungal elements in KOH 20% (Figure 3b) mount under high power of the microscope for fungal hyphae. Sabouraud's Dextrose Agar supplemented with cycloheximide and chloramphenicol was used and plates were incubated at 30◦C. Both positive and negative samples were incubated on Sabouraud's Cycloheximide.

Results

Table 1

Age in Years	Tinea cruris		Tenia genitalis with Tinea cruris		Pristine Tinea genitalis	
	Male	Female	Male	Female	Male	Female
15-25	62 (36.9%)	16 (17.4%)	14 (8.3%)	05 (5.4%)	01 (0.6%)	02 (2.2%)
26-35	36 (21.4%)	28 (30.4%)	20 (11.9%)	07 (7.6%)	01 (0.6%)	01 (1.1%)
36-45	14 (8.3%)	08 (8.7%)	06 (3.6%)	06 (6.5%)	-	
46-55	14 (8.3%)	20 (21.7%)	-	-	-	
TOTAL	126 (75%)	71 (77.1%)	40 (23.8%)	18 (19.6%)	02 (1.2%)	03 (3.3%)

In the present report, we reviewed a total of 260 cases of Tinea cruris and Tinea genitalis. A total of 126 (75%) Tinea cruris in males, 71 (77.1%) in females, 40 (23.8%) Tinea genitalis with Tinea cruris in males, 18 (19.6%) in females and 02 (1.2) Pristine Tinea genitalis in males and 03 (3.3%) in females were observed (Table 1 and Figure 4).

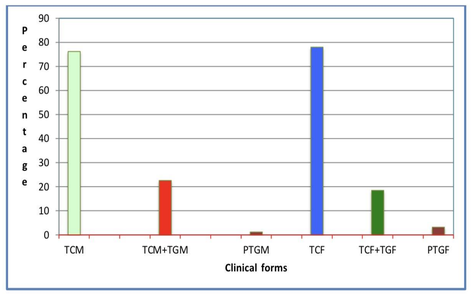

Figure 4

TCM - Tinea cruris male
TCM + TGM - Tinea cruris male + Tinea genitalis male
PTGM - Pristine Tinea genitalis male
TCF - Tinea cruris female
TCF + TGF - Tinea cruris female + Tinea genitalis female
PTGF - Pristine Tinea genitalis female

Conclusions

Tinea cruris is common in hot and humid climate of tropical countries with higher incidence in males. Genital dermatophytosis has been considered rare by most Western authorities. However, to the contrary, Indian reports have shown a higher prevalence of genital dermatophytosis due to overcrowding, lack of hygiene and misuse of creams containing Topical corticosteroids (TS). The typical lesions of Tinea infection include annular, erythematous plaques with raised scaly margins and central clearing.

All the patients with Tinea cruris, especially males should be properly examined for the presence of Tinea genitalis. Pubic shaving helps in proper identification of the lesions. Penile shaft should be lifted up and one should look for the lesions on scrotum and dorsal side of penis. Patients should be asked to bring the topical creams used by them.

Recently Indian scenario has changed due to inadvertent use of various broad spectrum steroid antifungal and antibacterial creams containing one or more antifungal and antibiotic in addition to potent corticosteroid, mainly Clobetasol Propionate. These drugs are sold over the counter because of misinterpretation of the law and lax implementation of existing laws and due to which local immunity gets affected and most of our patients (70%) (Figure 3d) presented with atypical presentation: loss of active borders, studded with pustules and without central clearing.

Drug regulatory units should amend the Schedule H of the Drugs and Cosmetics Act and ensure that no topical steroid can be sold over the counter legally.

Bibliography

1. Verma SB, Vasani R. Male genital dermatophytosis- clinical features and the effects of the misuse of topical steroids and steroid combinations- an alarming problem in India. Mycoses. 2016; 59: 606-14
2. Kumar B, Talwar P, Kaur S (1981) Penile tinea. Mycopathologia 75: 169-72
3. Pillai KG, Singh G, Sharma BM (1975) Trichophyton rubrum infection of the penis. Dermatologica 150: 252-4
4. Dekio S, Qin L, Kawasaki Y et al (1990) Tinea of scrotum: report of a case presenting as lichenified plaques. J Dermatol 17: 448-51.
5. Nenoff P, Kruger C, Shaller J, et al (2014) Mycology- an update part 2: dermatomycoses: clinical picture and diagnostics. J Dtsch DermatolGes 12: 749-77
6. Larone DH. Deramtophytes. In: Medically Important Fungi: A Guide to Identification, 4th ed, Washington DC: American Society for Microbiology (ASM) Press; 2002: 229-253
7. Luchsinger I, Bosshard PP, Kasper RS, Reinhardt D, Lautenschlager S (2015) Tinea genitalis: a new entity of sexually transmitted infection? Case series and review of literature. Sex Transm Infect. 0: 1-4
8. Pandey SS, Chandra S, Guha PK et al (1981) Dermatophyte infection of penis; association with particular undergarments. Int J Dermatol 20: 112-114