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CASE STUDY

TINEA CRURIS RESURGENCE IN MALE GENITALIA: A CASE REPORT

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ABSTRACT

Tinea infection is a very common disease, but that of the male genitalia is said to be rare. We present a 45 year old male patient suffering from tinea cruris, with lesions extremely chronic and progressive. The patients gave history of empirical treatment and under dosage of antifungal agents with resurgence of the infection. Culture of scrapings from the lesion yielded *Epidermophyton floccosum*. The case resolved completely with topical tioconazole and oral administration of 50mg fluconazole 3 times a week for six weeks. Patient's treatment should therefore be guided by laboratory diagnosis and patients should comply with prescribed dosage for better results.

Key words: *Tinea cruris*, *Resurgence*, *Epidermophyton floccosum*, *Treatment*.

INTRODUCTION

Tinea cruris is a superficial infection of the groin occurring predominantly in adolescent and young adults. It is predominantly caused by anthropophilic dermatophytes. *Epidermophyton floccosum* and *T. rubrum* are the most common cause of tinea cruris. Other species include *M. nanum*, *T. mentagrophytes* and *T. raubitschekii*. Burning and pruritus are common symptoms (Andrews and Burns 2008; Nweze, 2004). The exact incidence of tinea cruris is difficult to determine. It is not a reportable disease, and patients are able to recognize it and treat it until it is cured. In one study, investigators in São Paulo, Brazil, discovered that 13.9% of dermatophytoses were tinea cruris (Chinelli *et al*, 2003). Traditionally, tinea cruris has not been considered common in prepubertal children; however, a study of 137 Brazilian children younger than 12 found 10 cases of tinea cruris (Fernandes *et al*, 2001). There is widespread agreement that males are the most common victims of tinea cruris infection (Martin and Elewski, 2002). This has been confirmed by studies in Brazil (with a 4:1 ratio of males: females affected) (Silva-Tavares *et al*, 2001).

Tinea cruris (jock itch) is a special form of tinea corporis involving the crural fold. The typical lesion is a pruritic-ringed plaque, which is usually erythematous, scaling, and with clearly outlined margins. Small papules or pustules may be at the outer margins of the plaque, and the plaque is usually bilateral (Trent *et al*, 2001). The source of the infecting fungus is usually the patient's own tinea pedis with or without onychomycosis. Obesity predisposes to tinea cruris, as do diabetes and immunodeficient states (Seebacher *et al*, 2008; Ameen, 2010).

Wearing occlusive, wet clothing would also create the ideal conditions for fungal growth. This finding also explains the preference for male patients. Male genitalia have more skinfolds. In addition, female clothing (e.g., skirts, dresses) typically allows evaporation more readily than a tight pair of men's pants (Hainer, 2003).

Here we describe a chronic and progressive case of tinea cruris with resurgence as a result of under dosage of antifungal chemotherapy. To the best of our knowledge this is the first case report of tinea cruris with extensive lesions in our institution.

CASE REPORT

A 45-year old male factory worker presented at the Microbiology/Parasitology department of the University of Calabar Teaching Hospital (UCTH) with a history of recurrent tinea cruris for three years. The day zero of the case is the first day of the symptom. His habits were reasonably hygienic. There was no consanguinity with his family. The patient presented with an erythematous patch on the inner aspect of both thighs opposite the scrotum. It spread centrifugally, with partial central clearing and a slightly elevated, erythematous, sharply demarcated border with tiny vesicles that were visible only with a hand glass. The scrotum was spared. He was empirically treated by repeated administration of topical clotrimazole in addition to an oral antifungal agent which the patient took for one week. There was continuous resurgence of the infection before he decided to visit UCTH, which is a referral center. Diagnosis was based on 20% KOH examination of scrapings from the lesion which showed segmented hyphae and arthrospores characteristic of all dermatophyte infections. Highest yields were obtained from material taken from the active border of the lesion. Samples were cultured on Sabouraud dextrose agar containing 0.05 mg/ml of chloramphenicol and 0.5 mg/ml of cycloheximide. The plates were incubated at 25°C for 1–3 weeks. Culture yielded growth of *Epidermophyton floccosum* confirmed by gross morphologic and microscopic features of the fungal isolate (Fig. 1). The patient was placed on 150mg/week of fluconazole for 6weeks with topical application of tioconazole. He showed gradual improvement and complete resolution after six weeks. Currently 7 months after the end of therapy the patient is free from jock itch.

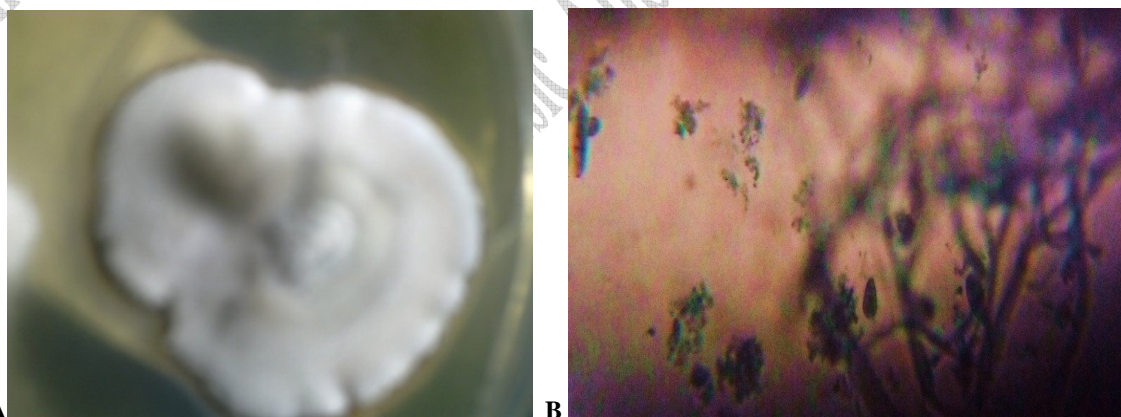


Fig.1(A) Colonial morphology of *Epidermophyton floccosum* on sabouraud dextrose agar after 14 days of growth at 25°C showing cream woolly colony. (B) Septate hyphae with macroconidia (x40)

DISCUSSION

We presented a case of a 45 year old male with tinea cruris. He had an urban background, was immunocompetent, non diabetic and practiced hygienic habits. There was no report of any skin disease in the family, and the wife. When tinea pedis is not present, another site of fungus infection acting as reservoir is usually identifiable (Pielop and Rosen, 2001). But in our patient no site was involved, the toe webs and nails were all free from tinea. This is a new finding, for in all other reported cases of tinea cruris there was a consort with tinea pedis (Mukhopadhyay, 2005; Das *et al*, 2009).

The incidence of tinea cruris is traditionally accepted to be very rare. Even though dermatophytes are known to grow best in warm and humid environments and are, therefore, more common in tropical and subtropical regions like Africa, infections of the male genitalia is said to be uncommon (Nelson *et al*, 2003; Odom *et al*, 2000). In our institution this is the first report of a progressive tinea cruris in a male. The patient reported because of the failure of the empirical treatment and the resurgence of the infection. It is possible that some of the patients with tinea cruris refuse to report in the health facility because of shame and embarrassment.

Preventive behavioral changes reduce the risk for future recurrences. Tinea cruris, is reported to be associated with the use of tight undergarment that occludes the areas between penis and thighs (Pandey *et al*, 1981). Our patient used similar undergarments, and usually wore tight jeans as a factory worker for long hours of work. This could have caused occlusive effect with sweating resulting in a warm and moist environment that encourages tinea infection. He was however advised to do away with his old undergarment to avoid reinfection and to keep off tight undergarments.

Tinea cruris in males typically spares the scrotum. This is an important clinical distinction between tinea cruris and candidal intertrigo, as candidiasis in males often involves scrotal skin (Pielop and Rosen, 2001; Mukhopadhyay, 2005). In our case the lesion was extensive, involving the inner aspect of both thighs; opposite the scrotum. It spread centrifugally, with partial central clearing and a slightly elevated, erythematous, sharply demarcated border, but the scrotum was spared.

Topical antifungal therapy is usually a sufficient treatment for tinea cruris. Therapies include terbinafine (Lamisil) cream or spray applied once daily for one week and butenafine (Mentax) 1% cream applied once daily for two weeks. The cream should be applied to the lesion and a 2-cm area surrounding the lesion once daily for approximately 14 days (Andrews and Burns 2008). In Nigeria, there are varying reports of dermatophytosis in different cities and communities considering its human and socioeconomic diversity and the staggering population (Nweze and Okafor, 2005). Many patients cannot afford the cost of conventional antifungal antibiotics but use local medicinal plants to treat the infections (Nweze *et al*, 2004). Nystatin is not effective for the treatment of tinea cruris (Akinwale, 2000). Lesions resistant to topical medications can be treated with griseofulvin by mouth, 250 mg three times daily for 14 days, or any of the other systemic agents (Akinwale, 2000). Our patient was treated with topical tioconazole (Trosyd) cream alongside with oral administration of 50mg fluconazole 3 times a week for 6 weeks. The cream was applied to the lesion and a 2-cm area surrounding the lesion twice daily for approximately 28days. The case resolved completely as confirmed by the patient seven months after treatment.

Daily application of talcum or other desiccant powders to keep the area dry do help prevent recurrences. Patients should also be advised to avoid hot baths and tight-fitting clothing; men should be advised to wear boxer shorts rather than briefs, and women to wear cotton underwear and avoid tight-fitting pants (Pandey *et al*, 1989).

CONCLUSION

Tinea cruris is possibly underestimated. Factors such as clothing, systemic disease, and a reservoir of fungus in the body are said to act alone or in tandem to cause tinea of the male genitalia in general. Patients treatment should be guided by laboratory findings.

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AUTHOR(S) CONTRIBUTION

Ogba M.O. carried out the laboratory studies, Ogba, O.M. and Abia-Bassey, L.N., drafted the manuscript, read and approved the final version.