

Tinea corporis due to *Trichophyton mentagrophytes* and *Trichophyton tonsurans* mimicking tinea imbricata

Sir,

Dermatophytoses due to *Trichophyton mentagrophytes* (TM) and *Trichophyton tonsurans* (TT) clinically manifest as erythematous annular plaques or patches with papules or vesicles at the margin. However, they may rarely present with multiple concentric rings with in the plaque resembling tinea imbricata (TI) caused by *Trichophyton concentricum*.^[1]

A 35-day-old baby (case 1) was brought with annular erythematous scaly patch on the left lateral wall of the chest and 22-year-old lady (case 2) presented with annular scaly patch on left shoulder. Family history was negative for dermatomycosis in both the cases and there was no history of any topical application. Case 1 was under treatment for protein energy malnutrition (PEM). Both were found to have single erythematous, circumscribed patch; on the left lateral wall of the chest in case 1 and on the left shoulder in case 2 [Figure 1]. There were two concentric rings of scales within the plaque in both the cases. Hair and nails were normal in them. TI was provisionally diagnosed based on the typical morphology of the lesions. However, Tinea corporis, erythema annulare

centrifugum, granuloma annulare were considered in the differential diagnosis. Potassium hydroxide (KOH) mount of the scrapings taken from the margins of both concentric rings from both patients showed numerous irregular, branched and septate hyphae [Figure 2]. Culture on Sabouraud's dextrose agar in case 1 showed creamish white colony with granular surface and raised center [Figure 2]; reverse showed yellow-brown pigmentation) consistent with TM; culture in case 2 showed yellow, powdery, flat colonies with radial grooves and reverse reddish brown pigmentation consistent with TT. Trichophyтин intradermal test could not be done in both the cases. Both were managed with 1% clotrimazole cream topically for 3 weeks which relieved their symptoms.

Both TM and TT are ubiquitous fungi. Both dermatophytes cause tinea capitis and most likely cause T. corporis. Interestingly the prevalence of T. corporis caused by TM and TT is increasing.^[2]

Although, numerous concentric rings is a characteristic feature of TI, a second wave of centrifugal spread may infrequently occur from initial site with formation



Figure 1: Upper picture showing annular plaque on the left lateral wall of the chest with concentric ring. Lower picture showing annular plaque with central ring of scales on the left shoulder region



Figure 2: Upper picture Potassium hydroxide preparation of scrapings showing numerous irregular, branched and septate hyphae (x40). Lower picture Culture on Sabouraud's dextrose agar showing creamish white colony with granular surface and raised center, characteristic of *Trichophyton mentagrophytes*

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Table 1: Reported cases of tinea corporis presenting with concentric rings

Author	Year	Number of cases	Fungus isolated	Immunodeficiency
Current report	2012	2	<i>Trichophyton mentagrophytes</i> <i>Trichophyton tonsurans</i>	Case 1 PEM Case 2 No
Narang <i>et al.</i> ^[6]	2012	1	<i>Trichophyton tonsurans</i>	HIV positive
Pei-Lun Sun and Hsin-Tsung ^[10]	2006	1	<i>Microsporum gypseum</i>	No
Ouchi <i>et al.</i> ^[5]	2005	1	<i>Trichophyton tonsurans</i>	No
Lim and Smith ^[7]	2003	1	<i>Trichophyton tonsurans</i>	Renal transplant recipient on immunosuppressives
Batta <i>et al.</i> ^[8]	2002	2	<i>Trichophyton tonsurans</i> <i>Trichophyton mentagrophytes</i>	No No
Lee <i>et al.</i> ^[9]	1987	1	<i>Microsporum ferrogenum</i>	No

PEM: Protein energy malnutrition, HIV: Human immunodeficiency virus

of 1 or 2 concentric rings in annular T. corporis. It was thought that villous hair in the involved area may be invaded and the follicle acts as a reservoir of infection.^[1]

It is known that PEM is associated with significant impairment of cell mediated immunity (CMI), phagocyte function, complement system, immunoglobulin A and cytokine production.^[3] Consequently patients with PEM show consistent impairment of cutaneous delayed hypersensitivity and fewer circulating T lymphocytes.^[4] The case 1 under study is a case of PEM; the clinical morphology (concentric rings) due to TM mimicking TI may be explained by the apparent impairment of CMI due to PEM. Review of literature revealed three similar cases reported as tinea pseudoimbricata or tinea indecisiva.^[5] All these cases were caused by TT and had underlying systemic or local immunosuppression. These reports indicate that immunosuppression may perhaps play an important role in the development of the unique clinical features mimicking TI. Narang *et al.*^[6] have also reported a case of T. capitis with underlying systemic immunosuppression (*human immunodeficiency virus* positive); due to TT presenting with concentric rings. Lim and Smith^[7] have described extensive T. corporis caused by TT, resembling TI in a 14-year-old girl; recipient of renal transplant on immunosuppressive therapy.

Batta *et al.*^[8] have also documented two cases of T. corporis due to TT and TM which mimicked TI; they were on cyclical therapy with topical steroid and antifungal. They postulated that prolonged therapy with topical antifungals and corticosteroids may produce lesions that resemble morphologically TI; due to underlying immunosuppression with

topical corticosteroids and reinfection due to early discontinuation of topical antifungals. Lee *et al.*^[9] and Sun and Ho^[10] have reported T. corporis mimicking TI caused by *Microsporum ferrugineum* and *Microsporum gypseum* respectively [Table 1].

To conclude, it may be stated that both immunocompetent and immunosuppressive patients with T. corporis of all ages may present morphologically with concentric rings similar to TI irrespective of the etiological species.

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