Original Article

To Study Clinical and Dermoscopic Picture of Steroid Modified Tinea Infection in a Tertiary Care Teaching Hospital

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Abstract

Background: Topical corticosteroid misuse can obscure and alter classical dermatophytosis, producing steroid-modified tinea (tinea incognito) that complicates diagnosis. Dermoscopy may reveal characteristic bedside patterns that facilitate recognition in routine care. **Material and Methods:** An observational, descriptive, cross-sectional study was undertaken in a tertiary-care dermatology service. Consecutive patients with clinical diagnosis of steroid- modified tinea who provided consent for dermoscopy were enrolled. A structured proforma captured demographics, comorbidities, lesion size/morphology, prior tinea history, discoloration, infection duration, steroid misuse duration, and clinical type. Dermoscopy recorded diffuse erythema, marginal scales, brown/black globules, black dots, and other follicular/vascular signs. IBM SPSS v23 was used for descriptive statistics (frequency, percentage; mean ± SD). **Results:** A total of 220 patients were included (male 134, 60.9%; female 86, 39.1%); mean age 33.45 ± 13.24 years. Most were 15–29 years (45.5%) and 30–44 years (32.7%). Clinical morphology was dominated by ill-defined erythematous-to-hyperpigmented plaques with fine white scales (73.6%), with the same morphology with striae in 26.4%. Dermoscopy commonly showed diffuse erythema + brown globules + marginal scales (73.6%), and the same with black dots (26.4%). Past tinea history was frequent (67.3%); hypopigmentation occurred in 8.6%. Predominant types were tinea cruris (46.4%) and tinea corporis (38.2%). Infection and steroid- misuse durations most often clustered at 6–12 months (34.6%). **Conclusion:** In routine practice, steroid-modified tinea presents with consistent clinical (ill- defined plaques with fine scales) and dermoscopic patterns (diffuse erythema, brown globules, marginal scales ± black dots). Integrating dermoscopy with systematic history of steroid exposure can speed recognition and guide management and patient counseling.

Keywords: Steroid-modified tinea; Tinea incognito; Dermoscopy; Dermatophytosis; Topical steroid misuse.

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Introduction

Steroid-modified tinea (tinea incognito) arises when topical corticosteroids suppress inflammation and distort lesion morphology, masking classical active margins and delaying diagnosis.[1,2] Dermoscopy provides a rapid, non-invasive adjunct that highlights reproducible features erythema, marginal scaling, and pigment/follicular clues useful when clinical borders are ill-defined.[3,4] This cross-sectional study describes the demographic profile, clinical morphology, and dermoscopic features of steroid-modified tinea in a tertiary-care setting.

Materials and Methods

Study design and setting: Observational, descriptive, cross-sectional study in a tertiary-care dermatology service (out-patient and in-patient, hospital-based).

Participants: Consecutive patients of any age/sex with a clinical diagnosis of steroid-modified tinea who consented to dermoscopy were included. Exclusions: refusal for dermoscopy/procedures or unrealistic expectations regarding treatment outcomes.

Sample size and sampling: Convenience sampling targeting n = 220, estimated using a prevalence-based formula (P ≈ 17.3%, d = 5%, Z = 1.96).

Data collection: A structured proforma documented age, sex, residence, occupation, education, religion, family type, comorbidities, lesion size and morphology, prior tinea history, discoloration (e.g., hypopigmentation), infection duration, steroid-misuse duration, and clinical type (tinea cruris/corporis/faciei/manuum/barbae/pedis/capitis).

Dermoscopy: Handheld dermoscope (polarized/non-polarized) with smartphone capture. Features recorded included diffuse erythema, marginal scales, brown/black globules, black dots, telangiectasias, and hair changes.

Outcomes

Primary: distribution of clinical morphologies and dermoscopic patterns. Secondary: exposure histories (infection and steroid durations), clinical types, and comorbid profiles.

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Statistical analysis: IBM SPSS v23; descriptive statistics (frequency, percentage; mean ± SD). Ethical considerations Written informed consent was obtained. Identifiers are withheld to preserve blinding.

Results

Participant characteristics: We included 220 patients; 134 (60.91%) were male and 86 (39.09%) female. Mean age was 33.45 ± 13.24 years. Age groups were 15–29 y: 100 (45.45%), 30–44 y: 72 (32.73%), 45–59 y: 34 (15.45%), ≥60 y: 12 (5.45%), and 0–14 y: 2 (0.91%) [Figure 1].

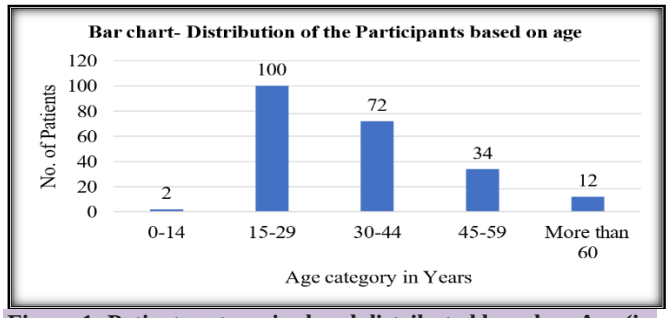

Figure 1: Patients categorised and distributed based on Age (in Years)

Most participants resided in Moradabad 83 (37.73%) and Pakbara 71 (32.27%), followed by Amroha 32 (14.55%), Sambhal 29 (13.18%), Majhola 4 (1.82%), and Hapur 1 (0.45%). By occupation, homemakers 68 (30.91%) and students 60 (27.27%) predominated; others were labourers 48 (21.82%), farmers 26 (11.82%), business 14 (6.36%), and retired 4 (1.82%). Educational status was secondary 74 (33.64%), middle 68 (30.91%), senior-secondary 60 (27.27%), primary 32 (14.55%), and graduation+ 22 (10.00%). Religion was Muslim 134 (60.91%) and Hindu 86 (39.09%); family type was joint 134 (60.91%) and nuclear 86 (39.09%).

Comorbidities and lesion profile: Most had no systemic illness 188 (85.45%); comorbidities included diabetes mellitus 16 (7.27%), hypertension 10 (4.55%), both DM+HTN 4 (1.82%), and hypothyroidism 2 (0.91%) [Table 1]. Lesion size was most often 3–4 cm 92 (41.82%) and 2–3 cm 74 (33.64%), with 4–5cm 28 (12.73%), 1–2 cm 14 (6.36%), <1 cm 8 (3.64%), and 5–6 cm 4 (1.82%) [Figure 2].

Clinically, ill-defined erythematous-to-hyperpigmented plaques with fine white scales were seen in 162 (73.64%) [Figure 3, 4], and the same morphology with striae in 58 (26.36%). A past history of tinea was present in 148 (67.27%). Hypopigmentation was noted in 19 (8.64%); no discoloration in 201 (91.36%).

Table 1: History of systemic illness of the Patients

History of Systemic Illness	No. of Patients	Percentage
Diabetes Mellitus	16	7.27%
Hypertension	10	4.55%
Hypertension and Diabetes	4	1.82%
Hypothyroidism	2	0.91%
No significant History reported	188	85.45%
Grand Total	220	100.00 %

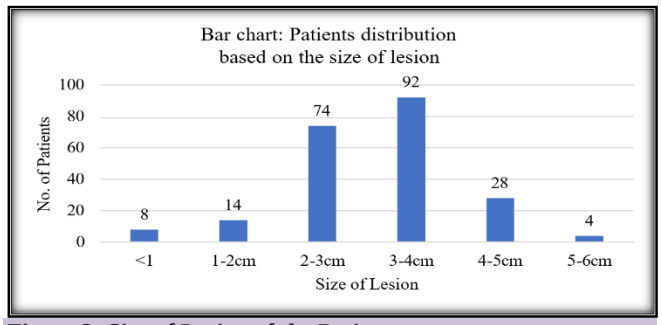

Figure 2: Size of Lesion of the Patients

Figure 3: Ill defined; (a) hyperpigmented plaque with fine white scales present over right side of the face; (b) erythematous to hyperpigmented plaque involving left pre auricular, auricular, post-auricular and neck region with fine scales present over the dorsum of right upper limb

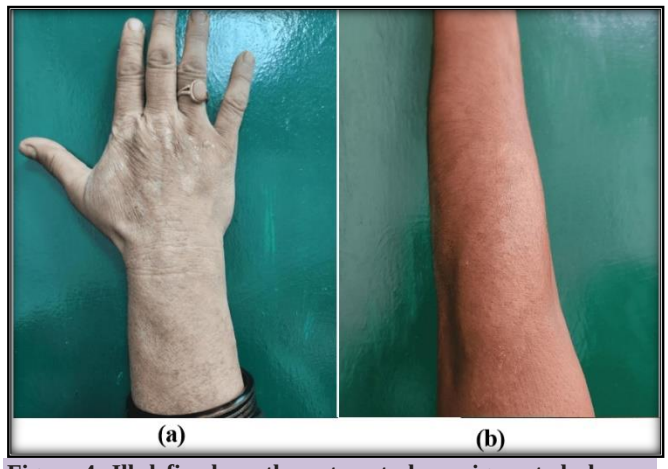

Figure 4: Ill defined, erythematous to hypopigmented plaque; (a) mild fine white scales present over dorsum of right upper limb; (b) with fine scales present over the dorsum of left upper limb

Dermoscopy, durations, and clinical types: On dermoscopy, diffuse erythema + brown globules + marginal scales were observed in 162 (73.64%), and the same with black dots in 58 (26.36%) [Figure 5, 6].

Infection duration most commonly clustered at 6–12 months 76 (34.55%), followed by 1–2 years 41 (18.64%), 1–3

months 30 (13.64%), 3–6 months 30 (13.64%), >3 years 18 (8.18%), <1 month 12 (5.45%), and 2–3 years 13 (5.91%) [Table 2].

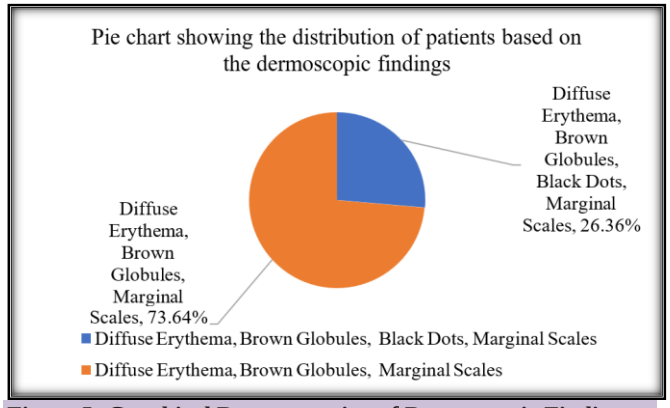

Figure 5: Graphical Representation of Dermoscopic Findings

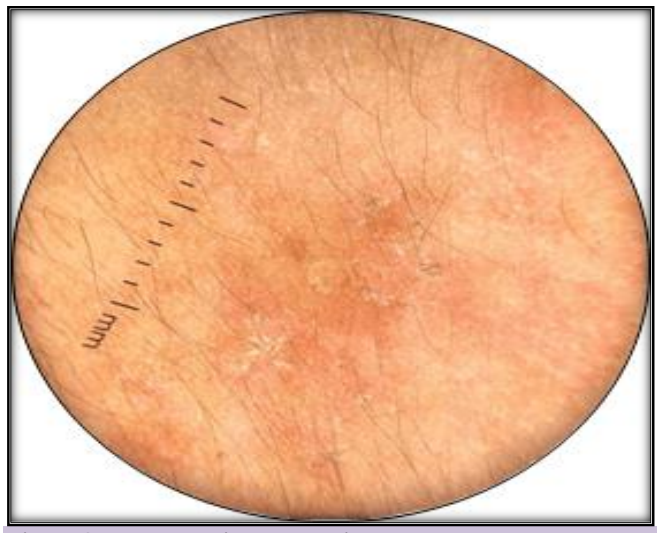

Figure 6: Dermoscopic Presentation.

Table 2: Duration of Tinea Infection

Duration of Tinea Infection	No. of Patients	Percentage
< 1 month	12	5.45%
1- 3 months	30	13.64%
3- 6 months	30	13.64%
6-12 months	76	34.55%
1-2 Years	41	18.64%
2-3 Years	13	5.91%
> 3 Years	18	8.18%
Grand Total	220	100.00%

Steroid-misuse duration followed a similar pattern, with 6–12 months 76 (34.55%) most frequent. Predominant clinical types were tinea cruris 102 (46.36%) and tinea corporis 84 (38.18%); less frequent were tinea faciei 16 (7.27%), tinea manuum 10 (4.54%), tinea barbae 4 (1.82%), tinea pedis 2 (0.91%), and tinea capitis 2 (0.91%) [Table 3].

Table 3: Type of Tinea

Type	No. of Patients	Percentage
T. Corporis	84	38.18%
T. Cruris	102	46.36%
T. Capitis	2	0.91%
T. Faciei	16	7.27%
T. Manuum	10	4.54%
T. Genitales	0	0%
T. Barbae	4	1.82%
T. Unguium	0	0%
T. Pedis	2	0.91%
Grand Total	220	100%

Discussion

In this hospital-based cross-sectional cohort (n = 220), steroid-modified tinea presented with a tight clinic-dermoscopic signature: ill-defined erythematous-to-hyperpigmented plaques with fine white scales predominated (162/220, 73.6%), and dermoscopy most often showed diffuse erythema with brown globules and marginal scales (162/220, 73.6%), with black dots in a substantial minority (58/220, 26.4%). The burden was concentrated in younger adults (15–29 years: 45.5%) with male predominance (60.9%) and prolonged symptom and steroid-misuse durations (most commonly 6–12 months, 34.6%). Clinically, tinea cruris (46.4%) and tinea corporis (38.2%) were the leading types, and hypopigmentation was documented in 8.6%. Taken together, these data indicate a sizeable, clinically meaningful disease load with features that remain reproducible despite steroid masking.

These patterns are biologically and clinically coherent. Topical corticosteroids suppress inflammation and attenuate the raised, scaly borders of dermatophytosis, yielding tinea incognito with blurred margins while allowing fungal persistence; the observed dermoscopic triad (erythema, marginal scale, brown globules ± black dots) is consistent with residual perifollicular inflammation and pigment change under steroid influence.[5] The predominance of intertriginous disease (tinea cruris) aligns with occlusion, humidity, and friction that favor dermatophyte growth, while longer misuse windows plausibly contribute to chronicity and recurrence. Taken together, the data support

routine point-of-care dermoscopy and a brief, structured history of steroid exposure at first contact, with immediate counseling to discontinue unsupervised steroid combinations and to initiate guideline-based antifungal therapy.

Strengths include predefined eligibility, systematic capture of clinical morphology, dermoscopic features, and exposure histories, and a sizeable real-world sample from a tertiary setting. Limitations include single-center scope, descriptive (non-comparative) design without routine mycological confirmation, absence of inter-observer reliability for dermoscopic signs, and convenience sampling. Future work should adopt prospective designs with standardized dermoscopic scoring, mycological correlation, inter-observer agreement, and response-to- therapy endpoints after steroid cessation; community education and stewardship around topical steroid combinations may further reduce misuse and disease burden.[6-8]

Conclusion

Steroid-modified tinea in routine practice presents with typical clinical morphology (ill-defined plaques with fine scales) and reliable dermoscopic patterns (diffuse erythema, brown globules, marginal scales ± black dots). Embedding a brief steroid-exposure history and point-of-care dermoscopy into first-contact evaluation can expedite diagnosis, curb mismanagement, and support counseling against unsupervised steroid use; broader awareness and stewardship are recommended to mitigate disease burden.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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