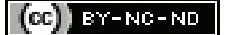**Original Article**

Dermatology Section

Trichoscopic Patterns of Scalp Dermatoses: An Observational Cross-sectional Study

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ABSTRACT

Introduction: Trichoscopy is a well-acclaimed diagnostic tool for numerous dermatoses. Scalp disorders contribute to a significant percentage of daily visits to the outpatient dermatology department, and a multitude of trichoscopic signs have been documented in the literature. The consistency and repeatability of these signs add weight to their diagnostic value.

Aim: To determine the various trichoscopic patterns observed in classical cases of scalp dermatoses and to differentiate between different scalp disorders.

Materials and Methods: The present observational cross-sectional study included 100 newly diagnosed cases of scalp dermatoses attending the Dermatology Outpatient Department at Sree Balaji Medical College and Hospital, Chennai, India. The study was conducted over a period of six months (180 days) from December 2021 to May 2022. After obtaining a thorough history and conducting clinical examinations, patients underwent trichoscopy. Photographs were taken, and the data obtained were systematically tabulated. The scalp disorders studied included Androgenetic Alopecia (AGA), Alopecia Areata (AA), Telogen Effluvium, Tinea Capitis, Trichotillomania (TTM), Seborrhoeic Dermatitis, Scalp Psoriasis, Discoid Lupus Erythematosus (DLE), Lichen Plano-Pilaris (LPP), and scalp verruca. All data were entered into Microsoft excel and analysed using Statistical Package for Social Sciences software.

Results: Trichoscopic findings from the 100 cases were categorised and tabulated according to pattern and condition for better understanding and comparison. Trichoscopic patterns observed were categorised as dots, vessels, shaft patterns, and changes in the inter and perifollicular areas. Out of the 100 patients, 67 presented primarily with alopecia, of which 56 patients (83.5%) had non scarring alopecia and 11 patients (16.4%) had scarring alopecia. The highest number of cases was observed in alopecia areata (n=20), where exclamation mark hairs were seen in all individuals, followed by coudability sign, yellow dots, and black dots. Among the androgenetic alopecia cases (n=18), anisotrichosis, pearly white dots, yellow dots, and an increased vellus-to-terminal hair ratio were observed in 100% of cases.

Conclusion: While certain signs/findings are specific, most trichoscopic patterns overlap in various skin conditions. Therefore, dermatologists should be aware of the patterns observed in trichoscopy and the need to stay updated with the latest findings.

INTRODUCTION

Dermoscopy, also known as epiluminescence microscopy is a non invasive, in-vivo technique, which can be utilised to visualise skin surface structures as well as subsurface skin structures not always visible to the naked eye [1]. It runs on the principle of transillumination of a lesion as the light falling on the skin undergoes reflection, refraction, diffraction and absorption and thus studying the resulting image under high magnification with enhancement of the underlying subtle structures [1]. Trichoscopy, i.e., dermoscopy of the scalp and hair, as a term was first coined by Lidia Rudnicka and Malgorzata Olszewska in 2006 and it essentially implies dermoscopy done of hair bearing areas of the body, especially the scalp [2]. The scalp is a notorious site for presentation of a wide range of dermatoses involving the scalp and hair which have a significant psychosocial impact. Localised and diffuse patterns of Alopecia with some producing cicatrisation impose serious distress on patients. Furthermore, diagnosis of a scaly and itchy scalp may range from pediculosis to LPP [3]. A manual dermoscope with 10x magnification or a videodermoscope with lenses ranging from 20x to 1000x magnification can be of much use in examination of scalp dermatoses [4]. Trichoscopy can often provide clues which aid in distinguishing clinical mimickers like AA and trichotillomania and though it may not always help in avoiding a skin biopsy, it can aid in providing a site to perform it.

The following factors such as mode of polarisation, focus of the trichoscope, area of the scalp to be analysed, choice of contact or non-contact trichoscopy and caution of covering the trichoscope in infectious conditions need to be considered before a trichoscopic examination [1].

Scalp disorders contribute to a greater percentage of the daily skin outpatient department and a multitude of trichoscopic signs have been illustrated in literature. Consistency and repeatability of these signs add weightage to their diagnostic value and it is imperative that the clinician keep abreast of the latest findings. The aim of the present study was to determine the various trichoscopic patterns in classical cases of scalp dermatoses and the objective was to differentiate between the different scalp disorders.

MATERIALS AND METHODS

The present cross-sectional study was conducted in the Dermatology Outpatient Department at Sree Balaji Medical College and Hospital, Chennai, India over a period of six months from December 2021 to May 2022, after obtaining approval from the Institutional Ethical Committee (Ref.No. 002/SBMC/IHEC/2020/1376). The selection of patients was purposive in nature and involved 100 individuals attending the dermatology outpatient department who were diagnosed with untreated scalp dermatoses during the six-month period.

Inclusion criteria: The study included newly diagnosed patients with scalp disorders who visited the dermatology outpatient department during the six-month period. Approximately 100 such cases were identified during this specific time frame.

Exclusion criteria: Patients who had previously received topical or systemic medications were excluded from the study.

Study Procedure

A thorough history and clinical examination were conducted, followed by trichoscopic analysis. The clinical examination involved assessing the skin and hair under natural light with the aid of a magnifying lens, when necessary. The clinical diagnosis was generally straightforward, but in certain cases of scarring alopecia, a biopsy was performed to confirm the diagnosis, and the histopathological impression was correlated with the clinical diagnosis. Trichoscopic analysis involved observing patterns, categorising the findings as dots, vessels, hair shaft patterns, changes in the inter and perifollicular area, and any additional miscellaneous findings.

A hand-held trichoscope (Illuco IDS 1100) with a mobile-phone attachment was used. Photographs of all patients were taken primarily at 20x to 30x magnification, using both polarised and non polarised modes. The polarised mode was used to visualise structures in the interfollicular area related to pigmentation and vasculature, while the non polarised mode helped differentiate different conditions, with the assistance of a mobile phone attached to the dermoscope. These photographs were stored, studied, and subsequently analysed with data tabulation.

The following steps were followed during the trichoscopic examination [4]:

1. **Mode of polarisation:** It is crucial to view the scalp through both non polarised and polarised modes, as they provide valuable information for identifying pathologies. The polarised mode offers better visualisation of the scalp skin, while the non polarised mode is helpful in defining hair shaft abnormalities.

2. **Focus the trichoscope:** Focusing the scalp skin can be challenging due to the presence of thickly pigmented hairs, which tend to obscure the focus over the scalp.

3. **Analyse the entire scalp:** While trichoscopy may initially be focused on areas where the patient experiences the most complaints, it is important for the clinician to scan the entire scalp under the trichoscope, as it may provide valuable clues. Dividing the scalp into 4-5 quadrants and analysing each area may also be sufficient.

4. **Non-contact vs. contact trichoscopy:** In this study, non-contact trichoscopy was the primary method utilised.

5. Covering the trichoscope with a clear plastic film is advisable when examining infectious pathologies such as viral warts or tinea capitis.

The differentiation between scarring and non scarring alopecia was primarily based on clinical examination, with atrophy and absent follicles observed in the scarring type. Additionally, specific dermoscopic findings associated with scarring alopecia were discussed in this study.

STATISTICAL ANALYSIS

All the data obtained were entered into Microsoft excel, and the data were analysed using SPSS software.

RESULTS

The 100 cases considered in the study were categorised into non scarring alopecias, scarring alopecias, and miscellaneous scalp dermatoses based on clinical presentation [Table/Fig-1]. The non scarring alopecic disorders (48 patients) included in the study were AA 20 (41.7%), AGA 18 (37.5%), and the black dot type of tinea capitis 10 (20.8%). On the other hand, the 11 cases of scarring/ cicatricial alopecias consisted of DLE 6 (54.5%) and LPP 5 (45.5%). In addition to the aforementioned disorders, 41 cases of other scalp dermatoses included scalp psoriasis 15 (36.6%), seborrhoeic dermatitis 12 (29.3%), trichotillomania 8 (19.5%), and viral wart 6 (14.6%) [Table/Fig-1].
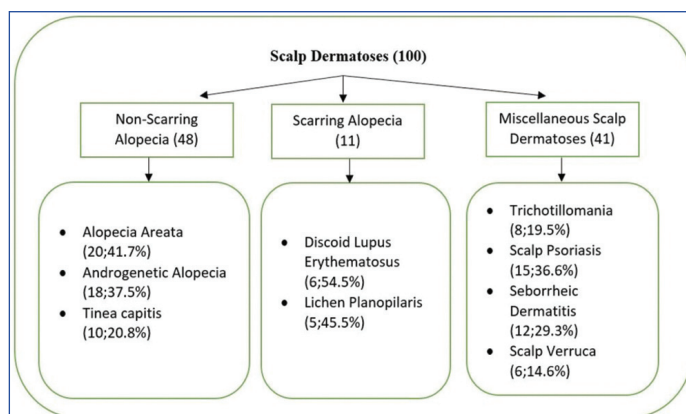
[Table/Fig-1]: Classification of scalp dermatoses in the present study.

Findings based on trichoscopic patterns: Trichoscopic findings were categorised and tabulated pattern-wise and condition-wise for better understanding and comparison. Trichoscopic patterns noted were classified as dots, vessels, shaft patterns, changes in the inter and perifollicular area, along with miscellaneous findings.

Dots: There was a varied presentation of dots with the presence of black (24 cases), white (13 cases), pearly white (18 cases), brown (9 cases), yellow (53 cases), and red dots (6 cases). Black and yellow dots were observed in AA, brown dots indicated Seborrhoeic dermatitis, and black and white dots were typically seen in tinea capitis. Pearly white dots were only observed in AGA. The red dots were classically noted in verruca, representing blood vessels [Table/Fig-2]. Yellow dots were also observed in DLE, Seborrhoeic dermatitis, and AGA.

S. No.	Pattern observed	Conditions	Number of cases
1	Black dots	Alopecia Areata (AA), tinea capitis	24
2	Yellow dots	Alopecia Areata (AA), DLE, Seborrhoeic dermatitis, Androgenetic Alopecia (AGA)	53
3	White dots	Tinea capitis, lichen planopilaris	13
4	Pearly white dots	AGA	18
5	Brown dots	Seborrhoeic dermatitis	9
6	Red dots	Verruca	6

[Table/Fig-2]: Dots on trichoscopy.

Hair Shaft Patterns

Various hair shaft changes were noted in AA and trichotillomania. AA exhibited features such as the exclamatory mark sign in 20 cases (20%), coudability sign in 19 cases (95%), and Pohl Pinkus sign in 12 cases (60%). Trichotillomania displayed a variety of patterns including trichoptillosis in 8 cases (100%), hair breakage at different levels in 7 cases (87.5%), tulip hair in 5 cases (62.5%), V hair in 5 cases (62.5%), corkscrew hair in 4 cases (50%), mace hair in 2 cases (25%), and the burnt match stick sign in 3 cases (37.5%). The shaft findings in tinea capitis included comma hair in 4 cases (40%), morse code hair in 2 cases (20%), and the telephone handle sign in two cases (20%). LPP and DLE only displayed follicular plugging in 10 cases (90.8%) [Table/Fig-3].

S. No.	Patterns	Conditions	n (%)
1	Exclamation mark hair	Alopecia Areata (AA) (n=20)	20 (100%)
2	Coudability sign	Alopecia Areata (AA) (n=20)	19 (95%)
3	Anisotrichosis	Androgenetic Alopecia (AGA) (n=18)	18 (100%)
4	Vellus: terminal hair	Androgenetic Alopecia (AGA) (n=18)	18 (100%)
5	Pohl pinkus constrictions	Alopecia Areata (AA) (n=20)	12 (60%)
6	Follicular plugging	Lichen planopilaris (n=5) Discoid Lupus Erythematosus (DLE) (n=6) (total=11)	10 (90.9%)

7	Trichoptilosis	Trichotillomania (n=8)	8 (100%)
8	Hair breakage at multiple levels	Trichotillomania (n=8)	7 (87.5%)
9	Tulip hair	Trichotillomania (n=8)	5 (62.5%)
10	V hair	Trichotillomania (n=8)	5 (62.5%)
11	Comma hair	Tinea capitis (n=10)	4 (40%)
12	Corkscrew hair	Trichotillomania (n=8)	4 (50%)
13	Burnt match sign	Trichotillomania (n=8)	3 (37.5%)
14	Morse code hair	Tinea capitis (n=10)	2 (20%)
15	Telephone handle hair	Tinea capitis (n=10)	2 (20%)
16	Mace hair	Trichotillomania (n=8)	2 (25%)

[Table/Fig-3]: Hair shaft abnormalities on trichoscopy.

Peri and Interfollicular Areas

Contrary to the scarce shaft patterns, DLE showed white structureless areas in 6 cases (6%), white rosettes in 6 cases (6%), and a diffuse background of erythema in 4 cases (4%). Peripilar cast was seen in 5 cases (5%) and perifollicular erythema in 4 cases (4%), which are classical findings in LPP. Perifollicular haemorrhage, which is a distinguishing factor between trichotillomania and AA, was evident in all trichotillomania patients in the current study. Interestingly, a honeycomb pattern of pigmentation was observed in 9 cases (9%) of Seborrhoeic dermatitis. The silvery white scale seen in 13 cases (13%) of psoriasis and the micro Auspitz sign were flawlessly exhibited in psoriasis. Perifollicular scaling was observed in 24 cases (24%) across different conditions such as tinea capitis, DLE, and Seborrhoeic dermatitis [Table/Fig-4].

S. No.	Pattern	Conditions	Number of cases out of 100
1	Perifollicular scaling	Tinea capitis, Discoid Lupus Erythematosus (DLE), Seborrhoeic dermatitis	24 (24%)
2	Silvery white scales	Psoriasis	13 (13%)
3	Honeycomb pattern of pigmentation	Seborrhoeic dermatitis	9 (9%)
4	Perifollicular haemorrhage	Trichotillomania	8 (8%)
5	White rossettes	Discoid Lupus Erythematosus (DLE)	6 (6%)
6	White structureless areas	Discoid Lupus Erythematosus (DLE)	6 (6%)
7	Peripilar cast	Lichen planopilaris	5 (5%)
8	Perifollicular erythema	Lichen planopilaris	4 (4%)
9	Diffuse pink background of erythema	Discoid Lupus Erythematosus (DLE)	4 (4%)

[Table/Fig-4]: Peri and interfollicular area on trichoscopy.

Vessels: Dotted vessels, arborising vessels, and telangiectasia were documented in the present study. DLE displayed dotted vessels in 4 cases (66.6%) and telangiectasia in 3 cases (50%) out of 6 cases. Arborizing vessels, a branching pattern with a primary stem-like vessel, were documented in 8 cases (8%), observed in verruca and LPP [Table/Fig-5].

S. No.	Pattern	Conditions	Number of cases out of 100
Vessels			
1	Dotted vessels	Discoid Lupus Erythematosus (DLE), scalp psoriasis	19 (19%)
2	Arborising vessels	Lichenplanopilaris, verruca	8 (8%)
3	Telangiectasia	Discoid Lupus Erythematosus (DLE)	3 (3%)
Miscellaneous findings			
1	Papillary projections	Verruca (6)	6 (6%)
2	Pustules	Tinea capitis (10)	4 (4%)

[Table/Fig-5]: Vessels and miscellaneous findings on trichoscopy.

Miscellaneous: Papillary projections were conspicuous in all six cases (100%) of scalp verruca [Table/Fig-5]. Among the 10 cases of tinea capitis that were screened, 4 cases (40%) showed pustules.

Findings based on the clinical condition: As mentioned earlier, the findings were also tabulated based on the clinical conditions [Table/Fig-6-8]. A total of 100 patients were examined, of which 59 presented primarily with alopecia. Among them, 48 patients (81.4%) had non scarring alopecia and 11 patients (18.6%) had scarring alopecia.

Androgenetic Alopecia (AGA) (n=18)		n (%)
1.	Anisotrichosis	18 (100%)
2.	Pearly white dots	18 (100%)
3.	Increased vellus: terminal hair ratio	18 (100%)
4.	Yellow dots	18 (100%)
5.	Peripilar sign	Not seen
Alopecia Areata (AA) (n=20)		
1.	Exclamation mark hair	20 (100%)
2.	Coudability sign	19 (95%)
3.	Black dot	18 (90%)
4.	Yellow dot	19 (95%)
5.	Pohl pinkus constrictions	12 (60%)
6.	Tapering hair	Not seen
7	Cadaverised hair	Not seen
8	i-hair	Not seen
9	Pigtail/circle hair	Not seen
10	Pinpoint white dots	Not seen
11	Interfollicular honeycomb pigmentation	Not seen
Tinea capitis (n=10)		
1.	Black dots	6 (60%)
2.	Perifollicular scaling	6 (60%)
3.	Comma hairs	4 (40%)
4.	Corkscrew hairs	4 (40%)
5.	Morse code hair	2 (20%)
6.	White dots	8 (80%)
7.	Pustules	4 (40%)
8.	Telephone handle hair	2 (20%)
9.	Zigzag hair	Not seen
10.	Broken hair/i-hair	Not seen
11.	Yellow dots	Not seen
12.	Perifollicular scaling	Not seen
13.	Bent hair	Not seen

[Table/Fig-6]: Trichoscopic findings of non scarring alopecic disorders.

Discoid Lupus Erythematosus (DLE) (n=6)		n (%)
1.	Perifollicular scaling	6 (100%)
2.	White rosettes	6 (100%)
3.	White structureless areas	6 (100%)
4.	Dotted vessels	4 (66.6%)
5.	Telangiectasias	3 (50%)
6.	Yellow dots	4 (66.6%)
7.	Diffuse pinkish background of erythema	4 (66.6%)
8.	Red dots	Not seen
9.	Arborising vessels	Not seen
10.	Bluish white veil	Not seen
Lichen Plano-Pilaris (LPP) (n=5)		
1.	Perifollicular erythema	4 (80%)
2.	Peripilar casts	5 (100%)
3.	Arboriform vessels	3 (60%)

4.	Irregular whitish dots	5 (100%)
5.	Follicular plugging	5 (100%)
6.	Perifollicular blue grey dots	Not seen
7.	Interfollicular Honeycomb pigmentation	Not seen

[Table/Fig-7]: Trichoscopic findings of scarring alopecic disorders.

Trichotillomania (n=8)		n (%)
1.	Perifollicular haemorrhage	8 (100%)
2.	Hair breakages at multiple levels	7 (87.5%)
3.	Tulip hair	5 (62.5%)
4.	V hair	5 (62.5%)
5.	Trichoptillosis	8 (100%)
6.	Burnt match stick sign	3 (37.5%)
7.	Mace hairs	2 (25%)
8.	Question mark hair	Not seen
9.	Yellow dots	Not seen
10.	Flame hair	Not seen
11.	Hair powder	Not seen
Scalp psoriasis (n=15)		
1	Dotted vessels	15 (100%)
2	Silvery white scales	13 (86.6%)
Seborrhoeic dermatitis (n=12)		
1	Perifollicular scaling	12 (100%)
2	Yellow dots	12 (100%)
3	Brown dots	9 (75%0)
4	Honeycomb pattern of interfollicular pigmentation	9 (75%)
5	Arborising red lines, twisted red loops, atypical vessels	Not seen
Verruca (Viral wart) (n=6)		
1	Papillary projections	6 (100%)
2	Arborising vessels	5 (83.3%)
3	Red dots	6 (100%)

[Table/Fig-8]: Trichoscopic findings of miscellaneous scalping disorders.

Alopecia Areata (AA): AA cases were detected maximally (n=20) with exclamation mark hairs seen in all individuals (100%), followed by coudability sign, yellow dots in 19 cases (95%), and black dots in 18 cases (90%). Pohl Pinkus hair was noted only in 12 cases (60%). Tapering hair, cadaverised hair, i-hair, pigtail/circle hair, pinpoint white dots, and interfollicular honeycomb pigmentation, which are newer additions to the trichoscopic pattern of AA, were not detected in the present study [Table/Fig-6].

Tinea capitis: Although tinea capitis showed a variety of findings, no single pattern was 100% consistent. White dots were observed in eight cases (80%), which was the finding with the highest consistency in the present study. Black dots and perifollicular scaling were documented in six cases (60%), while comma hairs, corkscrew hairs, and pustules were noted in 4 cases each (40%). The least consistent findings were morse code hair and telephone handle hair, each observed in 2 cases (20%). Zigzag hair, i-hair, yellow dots, and bent hair were not observed in the present study [Table/Fig-6].

Among the 11 cases of scarring alopecia, there were 5 cases (45.5%) of LPP and 6 cases (54.5%) of DLE [Table/Fig-7].

Discoid Lupus Erythematosus (DLE): The most consistent and reliable findings in DLE were white rosettes, white structureless areas, and perifollicular scaling, observed in all 6 cases (100%). Dotted vessels, yellow dots, and a diffuse pinkish background of erythema were next on the list with 66.6% consistency (four cases). Telangiectasia was noted in only 50% of cases.

Lichen Plano-Pilaris (LPP): Peripilar casts, irregular white dots, and follicular plugging were documented in 100% of cases. Perifollicular

erythema (80%) and arborising vessels (60%) were also observed in this study. Perifollicular blue-grey dots and interfollicular honeycomb pigmentation were not seen in the present study.

Trichotillomania: Trichoscopic findings in trichotillomania, namely perifollicular haemorrhage and trichoptilosis, were observed in all 8 cases (100%). Hair breakage at multiple levels was noted in 7 cases (87.5%). Tulip hair and V hair were seen in 5 cases (62.5%) each. Mace hair was noted in only 25% of cases (four patients), and the burnt matchstick sign in 3 patients (37.5%). The question mark sign, yellow dots, flame hair, and hair powder mentioned in the literature were not identified in these eight cases studied [Table/Fig-8].

Scalp psoriasis: Dotted vessels in a regular pattern 100% (15 patients) and silvery white scale 86.6% (13 patients) were the observed patterns [Table/Fig-8].

Seborrhoeic dermatitis: Perifollicular scales and dilated prominent yellow dots were seen in all 12 cases (100%). The honeycomb pattern and brown dots were seen in 9 cases (75%) [Table/Fig-8].

Scalp verruca: Papillary projections and red dots were the most consistent findings 6 patients (100%). Arborising vessels were seen in five out of the 6 patients (83.3%) [Table/Fig-8].

DISCUSSION

Disorders of the scalp can be elusive and create overlapping patterns, making it vital for dermatologists to be aware of the various clinical signs seen on the scalp. Trichoscopy plays a crucial role in confirming a diagnosis and avoiding unnecessary procedures or medications. This was particularly true in the current study, where classical cases such as AA and AGA were confirmed using trichoscopy. Additionally, scarring alopecias like lichen planopilaris and DLE showed characteristic features that enabled quick diagnosis. Trichoscopy was very helpful in differentiating between scarring and non scarring alopecias, as these conditions require different management approaches. Trichoscopy of alopecias has been extensively studied in the literature, with the description of several diverse signs.

As mentioned earlier, AA was extensively examined in the present study, and findings such as black dots, cadaverised hairs, and tapering hairs were observed. These findings are considered more specific to the diagnosis of AA and can be associated with disease severity. However, the presence of the exclamation mark hair sign is not exclusive to AA, as it can also be seen in trichotillomania. In the present study, exclamation mark hairs were observed in all cases of AA (100%; 20 cases), followed by the coudability sign and yellow dots (95%; 19 cases), and black dots (90%; 18 cases). Pohl pinkus hair, or monilethrix-like hair, was noted in only 12 cases (60%). [Table/Fig-9a] depicts the trichoscopic image of AGA and [Table/Fig-9b-d] show trichoscopic images of AA. Tapering hair,
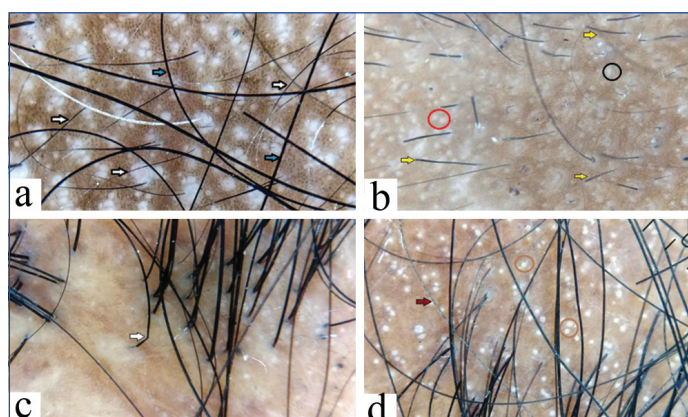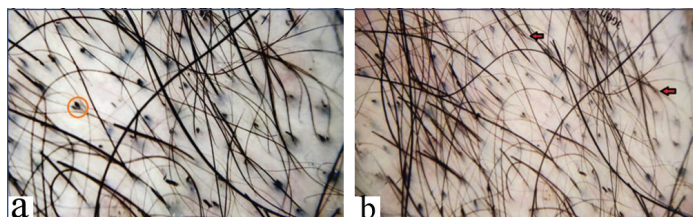

[Table/Fig-9]: (Polarised mode; 20x magnification): a) Androgenetic alopecia: blue arrows: terminal hairs, white arrows: vellus hairs; multiple yellow and white dots can be seen; b) Alopecia areata: yellow arrows: exclamation mark hairs; black circle: yellow dot; red circle: white dots; c) Alopecia areata: white arrow shows positive coudability sign; d) Alopecia areata: brown arrow: Pohl pinkus hair; red circle: white dots.

cadaverised hair, i-hair, pigtail/circle hair, pinpoint white dots, and interfollicular honeycomb pigmentation, which are newer additions to the trichoscopic pattern of AA, were not detected in the present study but were reported in a study by Rudnicka L et al., along with other classical findings observed in the current study [3].

The diagnosis of AGA can be firmly established through trichoscopy by observing the miniaturisation of hair shafts with diameter variability (anisotrichosis), an increase in the number of vellus hair shafts, and the presence of pearly white dots representing hypertrophied sebaceous glands and yellow dots. To appreciate the increase in the vellus to terminal hair ratio, it is wise to compare the occipital area with the bald scalp. Anisotrichosis, pearly white dots, yellow dots, and an increased vellus to terminal hair ratio were observed in all 18 cases (100%) of AGA, regardless of their grades, in the present study. These findings are in accordance with the findings reported by Jain N et al., [4]. The peripilar sign mentioned by De A [5] and Jain N et al., was not observed in any of the cases in the current study [4].

Trichotillomania can be difficult to identify due to its clinical similarity to AA. However, the revelation of definite trichoscopic signs can aid in the diagnosis of TTM. Perifollicular erythema and haemorrhage were seen in all the cases studied. Hair breakages at multiple levels, as depicted in [Table/Fig-10a,b], are an important parameter. Ankad BS et al., described several signs in trichotillomania (e.g., tulip hairs, mace hairs, V-hairs, burnt matchstick sign, etc.), and it is not uncommon to see multiple such signs in a single patient [6]. [Table/Fig-8] shows that a few of the listed trichoscopic features of TTM were not seen in this study.

[Table/Fig-10]: (Polarised mode; 20x magnification) Trichotillomania: a) orange circle: V-sign; b) red arrows: perifollicular erythema. Hair breakages at multiple levels can be seen in both the images.

Tinea capitis, specifically the non inflammatory form, shows characteristic features such as corkscrew hairs, comma hairs, and morse-code hairs, which are considered pathognomonic according to Elghblawi E and were seen in 40%, 40%, and 20% of cases in this study, respectively [7]. The telephone handle hair sign, recently described by Michelle V et al., was observed in 2 cases (20%) in the current study [8]. Additionally, the present study also documented white dots, black dots, and perifollicular scaling. [Table/Fig-11a] shows the image of black-dot tinea capitis.
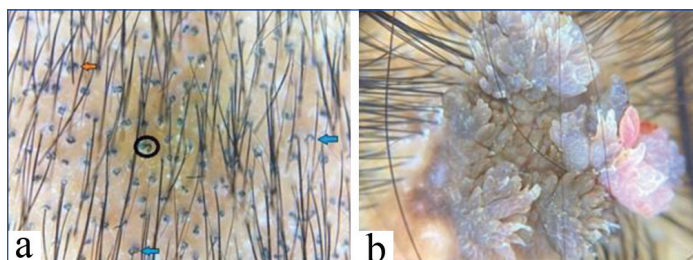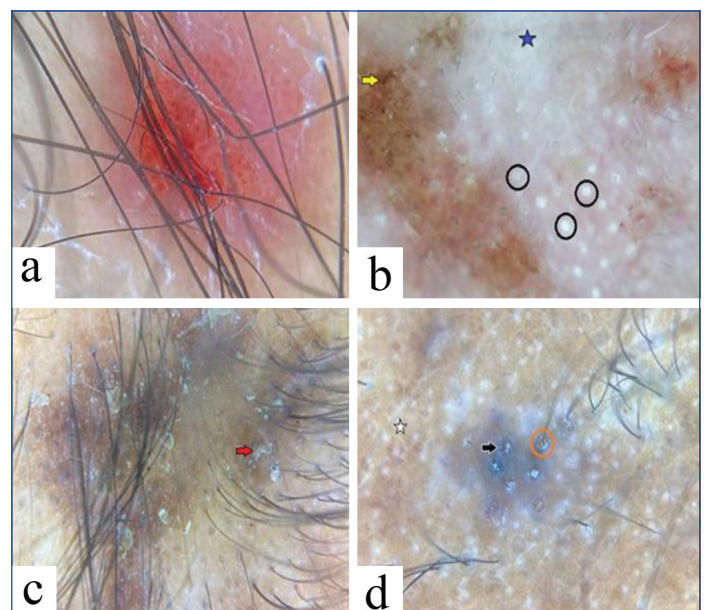

[Table/Fig-11]: (Polarised mode; 20x magnification) a) Tinea capitis: orange arrow: comma hairs; blue arrow: corkscrew hairs; black circle: telephone handle hairs; b) Viral wart: featuring papillary projections and red dots.

The DLE in the current study presented with some degree of cicatrisation. The features of DLE vary depending on the clinical stage, with acute lesions showing features such as erythema, telangiectasia, arborising vessels, and perifollicular halo. Late lesions mainly present with features of scarring alopecia, including loss of follicular ostia, white structureless areas, and peppery

brown pigmentation [9]. 'White rosettes', considered a trichoscopic hallmark by Ankad DS et al., were documented in all the cases in the present study, as shown in [Table/Fig-12b] [10]. Additionally, white structureless areas and perifollicular scales were observed.

Erythema, telangiectasia, and arborising vessels indicating acute pathology were noted in 50-66% of the cases in the present study. LPP can present with multiple areas of pigmentation, scarring, and follicular plugging of the scalp. 'Peripilar casts', indicative of the condition, were seen in all the cases in the present study, along with follicular plugging and irregular white dots. These findings were consistent with the findings reported by Friedman P et al., Lajevardi V et al., and Eftekhari H et al., [11-13]. [Table/Fig-12c,d] shows the trichoscopic features of LPP. The classical findings of silvery white scales and dotted vessels in a regular arrangement were consistently noted in all the cases of psoriasis in the current study [Table/Fig-12a]. Golińska J et al., reported similar findings and also reported bushy vessels and twisted loops as additional findings [14].

[Table/Fig-12]: (Polarised mode; 20x magnification): a) Scalp psoriasis: Regular arrangement of dotted vessels with diffuse white scales; b) Discoid lupus erythematosus (late stage): black circles: white rosettes; blue star: white structureless area; yellow arrow: peppery-brown pigmentation; c,d) Lichen plano-pilaris: red arrow: perifollicular scaling. Perifollicular pigmentation can also be seen; Orange circle: perifollicular casts; black arrow: follicular plugging; white star: irregularly placed white dots.

Seborrhoeic Dermatitis can present with various arrangements of vascular structures, such as arborising red lines, twisted red loops, and even atypical vessels, as reported by Widaty S et al., [15]. In this study, no vascular pattern was documented, but pigmentary changes (yellow, brown, and honeycomb pattern) and scaling were conspicuous. Additionally, Ruiz-Arriaga LF et al., reported additional novel findings such as "Dandelion" vascular conglomerate, "cherry blossom" vascular pattern, and intrafollicular oily material [16]. In the current study, papillary projections and red dots signifying capillaries were classically seen in all cases of scalp verruca [Table/Fig-11b], which is consistent with the findings reported by Bhat YJ et al., [17]. Based on the findings of the present study, the trichoscope could be of great help in aiding dermatologists in diagnosing scalp disorders. This can prevent the need for invasive techniques such as skin biopsies and expedite the treatment process. However, further larger studies are required to refine the identification process, as newer presentations and signs are becoming more common in the field of medicine.

Limitation(s)

The small sample size restricts the analysis of the present study.

CONCLUSION(S)

Trichoscopy has proven to be an important instrument in the diagnosis of numerous scalp dermatoses and should be included

in a dermatologist's armamentarium. While certain signs/findings are specific, most of the trichoscopic patterns overlap in various skin conditions. The authors, through the present study, hope to keep dermatologists apprised of the various patterns seen on trichoscopy and make them aware of the need to stay abreast of the latest findings.

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