

TRICHOSCOPIC FINDINGS IN VARIOUS SCALP ALOPECIAS

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Abstract

Background: Many patients of alopecia are encountered in our daily practice with diagnostic dilemma. Dermatoscopy is evolving as an important tool which aids our clinical diagnosis. **Aims:** To explore the utility of dermoscopy and to study the dermatoscopic findings in Cicatricial and Non Cicatricial Alopecias of the scalp. **Method:** An Observational study was conducted at rural based tertiary centre in Gujarat, India, during the period of June 2013 to May 2014 after getting ethical clearance. **Results:** Amongst 194 enrolled,142(73.12%) were males and 52(26.80%) were females. 45.36% were diagnosed to have Alopecia Areata(AA) with the most common finding being exclamation marks found in 75% patients.35.05% were diagnosed to have alopecia Androgenic (AGA) with the most common finding being thin and vellus hairs found in 83.82% patients.6.19% were diagnosed to have Psoriasis with red dots ,globules and silvery scales seen in 100% patients. 5.15% were diagnosed to have Tinea Capitis with corkscrew hairs seen in 100% patients. 3.6% were diagnosed to have Discoid Lupus Erythematosus with scattered dark brown discoloration of skin being the commonest finding was seen in 85.71 patients. 2.58% were diagnosed to have Seborrheic dermatitis with yellow scales seen in 100% patients. 2.06% were diagnosed to have Lichen Plano Pilaris with perifollicular inflammation seen in 100% patients. **Conclusions:** Dermoscopy has been shown to enable the visualization of sub-macroscopic morphologic structures invisible to the naked eye. Trichoscopy is used as a diagnostic aid in differential diagnosis of hair loss and scalp diseases.

Key Words- Trichoscopy, Alopecia, Lichen plano pilaris, Scalp Psoriasis, Seborrheic Dermatitis, Discoid Lupus erythematoses, Tinea Capitis

Introduction

A dermoscope (dermatoscope) is a non-invasive, diagnostic tool which visualizes subtle clinical patterns of skin lesions and subsurface skin structures not normally visible to the unaided eye. The basic principle of dermoscopy is transillumination of a lesion and studying it with a high magnification to visualize subtle features.^[1] Some dermoscopic patterns are observed consistently with certain diseases and these then could be used for their diagnosis. Skin surface microscopy of the scalp is termed as Trichoscopy.

Structures which may be visualized by trichoscopy include Hair shafts, Hair follicle openings, Perifollicular epidermis, Cutaneous microvessels. Trichoscopy allows analyzing acquired and congenital hair shaft abnormalities^[2,3,4]. Normal hair shafts are uniform in shape and color with continuous, interrupted, fragmented or absent medulla^[5]. About 10% of normal human scalp hairs are short, hypopigmented vellus hairs^[3,4]. Trichoscopy may distinguish whether hair follicle openings are normal, empty, fibrotic or containing biological material, such as hyperkeratotic plugs or hair residues.

"Dots" is a common term for hair follicle openings seen by trichoscopy.^[5]

Black dots ("cadaverized hairs") represents pigmented hairs broken or destroyed at scalp level.^[5] They are observed in alopecia areata,^[6] dissecting cellulitis, tinea capitis,

chemotherapy - induced alopecia, and trichotillomania, but may be incidentally observed also in other diseases and after laser depilation or trichogram.

Yellow dots are follicular infundibula with keratotic material and/or sebum variable in color, shape and size. Yellow dots are present in alopecia areata(AA),^[6] discoid lupus erythematosus (DLE) and androgenic alopecia(AGA).^[7] The predominance of yellow dots in the frontal area compared to the occipital area favors the diagnosis of (female) AGA.^[7]

White dots represent areas of perifollicular fibrosis and are observed most commonly in LPP. Another type of white dots, the small, regular pinpoint white dots are observed in sun exposed areas and in dark skin phototypes regardless of hair loss. They correspond to empty hair follicles or to the eccrine sweat duct openings.

Red dots represents blood vessels and is commonly seen in Psoriasis in "honeycomb pattern". Also seen in DLE and are believed to be a positive prognostic factor.^[8]

Brown or brown-gray dot are the characteristic finding in the eyebrow area of patients with frontal fibrosing alopecia(FFA). It is a favorable prognostic factor for eyebrow regrowth.

The word "alopecia" comes from the Greek word "alopex" for "fox.", which means hair loss when afflicted with a skin disease (the "mange"). Alopecia is defined as complete or partial loss of hair from scalp and other hair bearing sites of the body^[9].

Male and female pattern baldness are androgen dependent alopecia. It is very common in males that about 80 %. In males, it clinically presents as recession of frontal hairline, bitemporal baldness or a vertex pattern of hair loss. Occipital scalp is relatively spared. In females, pattern baldness is noticed more in the pubertal, perimenopausal and postmenopausal age groups; in the form of thinning of hair leading to widening of the central partition in a Christmas tree pattern. The diagnosis is mostly made clinically. In doubtful cases dermoscopy can help. The dermoscopic findings of AGA as variation of hair diameter more than 20% in all the cases and in late cases there can be a predominance of yellow dot^[10] There is perifollicular pigmentation called peripilar sign in all patients but it could be documented only in 66 % of Asian patients probably because of the confounding skin colour^[11].

Alopecia Areata commonly presents as round or oval patches of non-scarring hair loss. Short 'exclamation mark' hairs (i.e. distal end broader than the proximal end) can often be seen, particularly at the margins of areas of alopecia. Dermoscopy can be particularly useful to distinguish AA from other types of alopecia. The dermoscopic findings include yellow dots, black dots, broken hairs, short vellus hairs, tapering hairs, coudable and cadaverised hairs.^[12]

Tinea Capitis is an infection of the scalp and hair caused by the dermatophytes *Microsporum* and *Trichophyton*. It is most common in infants and rare after puberty. Its dermatoscopic finding is characterized by a pigmented, homogeneously thickened and sharp slating ended hair shaft. The comma hairs and the corkscrew hairs appear to be specific dermatoscopic findings of dermatophytosis of the scalp^[13] regardless of the etiological agent.

Seborrheic Dermatitis is a common type of non-atopic dermatitis with red, mildly itchy skin seen particularly on the scalp, T-zone of the face (especially the melo-labial fold) and skin folds, such as the axillae and groin. On Dermoscopy seborrheic dermatitis (SD) was characterized by arborizing vessels and atypical red vessels^[14]. Featureless areas devoid of any particular vascular patterns were also frequently observed. Scales were observed commonly, there was no significant difference in the frequency and characteristics of the scales when they were observed using dermoscopy.

Psoriasis is common erythematous-squamous dermatoses that may present with scaly erythematous patches on the scalp. The most significant dermoscopic features of scalp psoriasis were red dots and globules, twisted red loops, and glomerular vessels all arranged in honeycomb pattern^[14].

DLE produces alopecia probably because of the inflammation of the infundibular region of the hair follicle. Patches on scalp are often itchy in the form of areas of scarring erythema and scaling with follicular plugging. In extensive cases: extensive areas may be involved resembling pseudopelade of Brocq. Involvement of the scalp commonly produces a scarring alopecia,^[15] but there has been an increase in incidence of alopecia areata among patients with LE.^[16] Dermoscopic findings described in DLE include peripilar erythema and scaling, White patch, branching capillaries, keratin plugs and decrease in number of follicular ostia.

Lichen planopilaris presents with patches of hair loss showing violaceous papules erythema and scaling of the underlying scalp.

Table 1: Types of alopecia with their causes

Cicatricial alopecia				Noncicatricial alopecia			
Disorder	Males	Females	total	Disorder	Males	Females	total
LPP	1	3	4(2.1%)	ALOPECIA	55	33	88(45.3%)
				AREATA			
DLE	2	5	7(7%)	ANDROGENIC	67	1	68(35.0%)
				ALOPECIA			
				PSORIASIS	8	4	12(6.2%)
				SEBORRHEIC	4	1	5(2.6%)
				DERMATITIS			
				T. CAPITIS	5	5	10(5.2%)
Total: males-3, Females-8, Total - 11				Total	139	44	183

Papules get replaced later by follicular plugs and scarring. Hair pull test is positive in the margins. In the fibrotic stage of lichen planopilaris the dominating features are big, irregular (classic) white dots, which merge into milky-red (strawberry icecream color) or white areas.^[17]

Aim

This study was conducted to study the dermatoscopic findings of various Cicatricial and Non Cicatricial scalp alopecias, To explore the utility of dermoscopy in the examination and diagnosis of various hair loss disorders.

Methods

The study was conducted at Skin opd, Shree Krishna Hospital during the period of June 2013 to May 2014 after getting ethical clearance from Institutional Human Resource and ethics Committee.

All consenting male and female patients, with alopecia, attending the Skin Department were enrolled. Hair loss occurring due to any external injury, chemotherapy, other drugs, any Systemic cause or Hair Shaft deformity were excluded.

194 patients were enrolled during the period of one year after written informed consent. In every case detailed history was elicited and clinical examination was carried out following which dermoscopy was done with a non polarised dermatoscope to correlate our clinical findings and aid to our diagnosis. Diagnosis was done clinically and histopathological examination was performed whenever in doubt

Results

Total of 194 patients of alopecia were enrolled out of which 142 (73.12%) were males and 52 (26.80%) were females.(table 1)The most common age group affected was 21-30 with 78(40.20%) patients. Total 88 (45.36%) patients were diagnosed to have AA.(Table 1) Most common dermatoscopic finding was exclamation marks seen in 66 (75%) patients followed by black dots seen in 65 (73.86%) patients. Caudability sign, sparing of white hairs can also be observed dermatoscopically. (Figures 1a,1b,1c)(Table2)

Total 68 patients (35.05%) were diagnosed to have AGA.(Table 1) Most common dermatoscopic finding was thin and vellus hairs seen in 57 (83.82%) patients, followed by yellow dots seen in 51 (75%) patients.(Figures 2a,2b) (Table 2) Family history was positive in 43 (63.24%) patients out of whom 36 (83.72%) patients had positive paternal history, 5 (11.63%) patients had

Table 2: Trichoscopic findings of various scalp alopecias

Disorder	Findings	Number(%)	Males(%)	Females(%)
Alopecia areata (N=88)	EXCLAMATION MARKS	66 (75)	39(70.91)	27(81.82)
	TAPERED HAIRS	60 (68.18)	41(74.55)	19(57.58)
	BLACK DOTS	65 (73.86)	42(76.36)	23(69.67)
	YELLOW DOTS	58 (65.90)	36(65.45)	22(66.67)
	UPRIGHT REGROWING HAIR	38 (43.18)	14(25.45)	24(72.73)
	VELLUS HAIRS	26 (29.54)	17(30.91)	9(27.27)
Androgenic alopecia (N=68)	BROKEN HAIRS	46 (52.27)	27(49.1)	19(57.58)
	THIN AND VELLUS HAIRS	57(83.82)	56(83.58)	1(100) (Female pattern)
	HAIR SHAFT THICKNESS HETEROGENEITY	47(69.11)	47(70.15)	0
	PERIFOLLICULAR DISCOLORATION	32(47.05)	32(46.27)	0
Lichen plano pilaris (N=4)	YELLOW DOTS	51(75)	50(74.63)	1(100) (Female pattern)
	SILVER WHITE PERIFOLLICULAR SCALING	3(75)	0	3(100)
	PERIFOLLICULAR INFLAMMATION	4(100)	1(100)	3(100)
	CONCENTRIC BLOOD VESSELS	1(25)	1(100)	0
	VIOLACEOUS BLUE INTERFOLLICULAR AREAS	1(25)	0	1(33.33)
Discoid lupus erythematosus (N=7)	WHITE DOTS OVER RED BASE	3(75)	1(100)	2(66.67)
	LARGE YELLOW DOTS	5(71.42)	1(50)	4(80)
	THICK ARBORIZING VESSELS	3(42.85)	1(50)	2(40)
Psoriasis (N=12)	SCATTERED DARK BROWN DISCOLORATION OF SKIN	6(85.71)	2(100)	4(80)
	RED DOTS AND GLOBULES	12(100)	8(100)	4(100)
	TWISTED RED LOOPS	7(58.33)	5(62.5)	2(50)
Seborrheic dermatitis (N=5)	SILVERY SCALES	12(100)	8(100)	4(100)
	THIN ARBORIZING VESSELS	3(60)	3(75)	0
Tinea capitis (N=10)	YELLOW SCALES	5(100)	4(100)	1(100)
	COMMA HAIRS	8(80)	3(60)	5(100)
	CORKSCREW	10(100)	5(100)	5(100)

positive maternal history, 2 (4.65%) patients had positive family history both paternally and maternally.

Amongst 194 enrolled, 4 (2.06%) were diagnosed to have LPP.(Table 1) Most common dermatoscopic finding was perifollicular inflammation seen in 4 (100%) patients, followed by silver white perifollicular scaling seen in 3 (75%) patients. (Figures 3) (Table 2)

Total 7 (3.6%) were diagnosed to have DLE.(Table 1) Most common dermatoscopic finding was scattered dark brown discoloration of skin seen in 6 (85.71) patients followed by large yellow dots seen in 5 (71.42) patients. (Figures 4a,4b) (Table2)



Figure 1(a,b,c): **1a.** Dermatoscopy (50x) of alopecia areata showing Exclamation Mark Hair. **1b.** Dermatoscopy (200x) of alopecia areata showing sparing of White Hair. **1c.** Dermatoscopy (200x) of alopecia areata showing Coudability Sign.

Out of 194 enrolled, 12 (6.19%) were diagnosed to have Psoriasis.(Table 1) Most common dermatoscopic finding was red dots and globules seen in 12 (100%) patients and silvery scales in 12 (100%) patients. (Figures 5a,5b) (Table 2)

Five patients were diagnosed to have SD.(Table1) Most common dermatoscopic finding was yellow scales seen in 5 (100%) patients followed by thin arborizing vessels seen in 3 (60%) patients. (Table2)

Total 10 (5.15%) out of 194 were diagnosed to have TC.(Table 1) Most common dermatoscopic finding was corkscrew hairs seen in 10 (100%) patients, followed by black dots seen in 9 (90%) patients. (table2).

Discussion:

Scalp alopecias reflect a broad spectrum of heterogeneous diseases and are among the most common dermatologic disorders. A careful history and a thorough clinical examination are usually adequate to establish the correct diagnosis. In some cases, eg, cicatricial alopecia, a scalp biopsy may be necessary. However, the histopathologic features are not always diagnostic^[5]. Consequently, new diagnostic methods are required. Scalp dermatoscopy is a promising way to facilitate the diagnosis of scalp and hair disorders.^[18] Trichoscopy may represent an important link between clinical and histologic diagnoses.^[19]

Hair loss can have significant effects on patients' quality of life, and a prompt diagnosis of the different types of alopecias and an early intervention is needed. This review highlights the main dermoscopic findings in the different types of Scalp Dermatoses associated with alopecia. We believe that this important tool has demonstrated to help dermatologists in highlighting minute details thus avoiding unnecessary biopsies.

The prevalence of alopecia in our country has been measured for the major groups of Alopecias. But there is no literature regarding the percentage distribution of each diagnosis. AGA is considered to be the commonest cause of alopecia worldwide^[20]. The approximate prevalence of AA worldwide is around 0.1-0.2%.^[21] In our study the prevalence of alopecia was 0.58% of the out patient population. These two are considered as the commonest causes of alopecia. In a large hospital based study by Sharma et al in north India in 808 patients, AA patients comprised 0.7% of the outpatient population.^[22] In our study, AA was the commonest diagnosis madewith 88 (0.26%) patients followed by AGA 68(0.20%) patients.

In our study, amongst 194 enrolled, 142 (73.12%) were males and 52 (26.80%) were females.The study conducted by Vivek V.et al at Sir Takhtasinh Hospital, Bhavnagar, India included a



Figure 2 a. Dermoscopy (50x) of androgenic alopecia showing Thin and Vellus hair, Hair shaft thickness Heterogeneity



Figure 2 b. : Dermoscopy (50x) of androgenic alopecia showing Empty hair follicles.

total 112 patients in 2 years out of which 58 patients (51.7%) were males and 54 patients (48.21%) were females.^[23]

Most common dermatoscopic finding seen in our study was exclamation marks seen in 66 (75%) patients followed by black dots seen in 65 (73.86%) patients. The dermatoscopic finding in AA in our study shows sparing of gray hair which consolidates the established autoimmune theory of AA which states CD8 T cells are directed against follicular melanocytes.

Lacarrubba and colleagues^[24] investigated 200 patients with alopecia areata, subdivided into acute and chronic disease. This study identified 3 features of acute AA: micro-exclamation marks, black dots, and vellus hairs. Inui and colleagues^[6] identified similar markers of disease activity (black dots, tapering hairs, and broken hairs) based on trichoscopy performed in 300 patients with AA. In this study, vellus hairs were found to be a marker of longlasting, inactive disease. Ross and colleagues^[18] divided 58 patients with AA into the following subgroups: patchy, ophiasis, diffuse, and alopecia totalis / universalis. Trichoscopy features were similarly expressed in all investigated subgroups. The authors' experience^[9,25] shows that black dots are a most constant marker of disease activity in AA.

In our study males were commonly affected with male: female ratio of 1.66:1; in comparison with study conducted by Inui et

al., where male: female ratio was 2.57:1.^[6]

Exclamation marks were seen in 31.7% (95/300) cases of AA by Inui et al.^[6] and 12.1% (8/66) cases by Mane et al.^[26] Exclamation mark sign, which is specific finding of alopecia areata, was seen in 75% of patients in our study.

Black dots seen in our study was 65 (73.86%) patients while, Inui et al.,^[6] demonstrated Black dots in 44.3% (133/300) cases of AA and Mane et al. demonstrated Black dots in 67.7% (44/66).^[26] Yellow dots were seen in 58 (65.90%) of cases in contrast to Ross et al.'s study where 94.8% cases with Alopecia had Yellow Dots (55/58 cases)^[5]. Mane et al.,^[26] reported an incidence of 81.8% among 66 patients. This differences could be explained by the shampooing practices of the patients.

Broken hairs were seen in 46 (52.27%) patients in our study, Inui et al.^[6] demonstrated Dystrophic hairs in 45.7% (137/300) of alopecia cases. 55.4% patients had dystrophic hairs in the study conducted by Mane et al.^[26] Our study findings are consistent with the above study findings.

Vellus hairs seen in 26 (29.54%) patients while study by Inui et al.,^[6] Small villous hairs (SVH) were observed in 72.7% (218/300) of cases. Mane et al.,^[26] demonstrated SVHs in 40.9% of patients.

AGA is characterized by hair diameter diversity due to miniaturization of the hair follicles. Variability in hair shafts diameter of more than 20% is diagnostic of this condition^[25] In early AGA, it is common to see peripilar brown depressions described as peripilar signs^[27]. In patients with advanced androgenetic alopecia, yellow dots can be observed and the sun-exposed scalp often shows the honeycomb pigment pattern. Yellow Dots in AGA are thought to be the result of sebaceous hypertrophy and lagooning in glands as a result of end-organ hypersensitivity^[7]. The characteristic trichoscopic findings of AGA are known as Heterogenous hair density and Perifollicular pigmentation^[4] Perifollicular pigmentation is thought to be the result of dermal infiltrates in AGA^[25,27]

Total 68 (35.05%) were diagnosed to have AGA. Hair shaft thickness heterogeneity, tapered hairs were seen in 47(69.11%) patients, while study by Inui et al, Hair Shaft Thickness heterogeneity and thin hair was observed in 100% of patients and Yellow Dots were seen in 25.4% of patients. Ross et al^[5] emphasized Yellow Dots being higher in late AGA in their

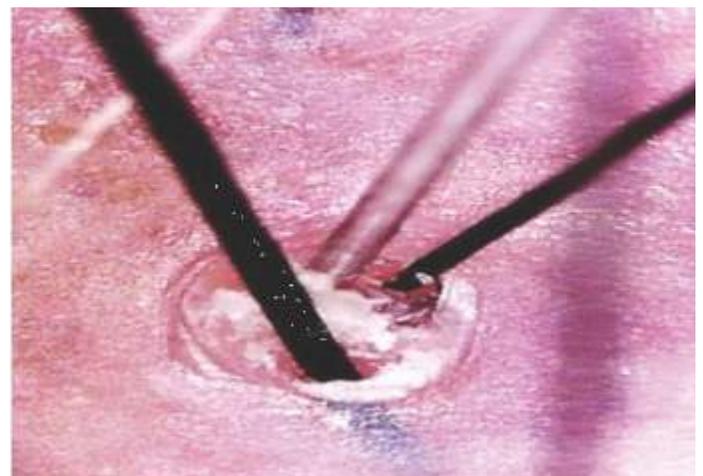


Figure 3. : Dermoscopy (200x) of LPP showing Silver White Perifollicular Scaling



Figure 4 a. (50x) of DLE showing Thick Scaling with Yellow Dots



Figure 4 b. : Dermoscopy (200x) of DLE showing Thick Arborizing Vessels (with paraffin)

study and Lacarrubba et al.^[24] underlined miniaturization as being higher in early AGA.

Perifollicular pigmentation was first described by Deloche et al.^[27] Inui et al.^[28] reported Perifollicular pigmentation in almost all patients with alopecia who had fair skin. While in our study perifollicular pigmentation was seen in only 2(47.05%) patients as the study was done in Asian population.

In our study Family history was positive in 43 (63.24%) patients. Sawant et al reported that 51.3 % of the patients of androgenic alopecia had Positive family History at the time of presentation.^[29]

LPP commonly affects women and its variant FFA significantly affects older women. The typical age of onset is 40 - 60 years. In LPP, dermoscopy reveals absence of follicular openings and the presence of characteristic perifollicular scales (peripilar casts) at the periphery of the patch. Perifollicular erythema characterized by the presence of arborizing vessels around the follicular ostia is also observed. Blue-grey dots may be found in some patients, especially those with dark skin. A peculiar pattern of round perifollicular blue-grey dots “target pattern” may be observed in some dark patients with LPP.^[30] Usually, LPP spares some terminal hair follicles inside the alopecic patches.^[31]

Most common dermoscopic finding in patients of LPP was perifollicular inflammation seen in 4 (100%) patients followed by silver white perifollicular scaling seen in 3 (75%) patients. As per a

study Duque Estrada et al, Perifollicular scales were seen in 100% of patients with no patient having perifollicular inflammation. Coiled capillaries and branching capillaries were not seen in any patient. Pigment network and white patches were seen in 50% patients and Blue gray dots were seen in 25% of patients.^[32]

DLE is considered as a chronic form of cutaneous LE and may be seen alone or as a part of SLE. It is the commonest form of cutaneous LE.

The most characteristic trichoscopy features of DLE of the scalp are thick arborizing vessels and large yellow dots. Scattered brown discoloration of the skin may be observed in some patients. Yellow dots with radial, thin arborizing vessels emerging from the dot are considered characteristic for discoid lupus erythematosus. This feature is sometimes referred to as “red spider in yellow dot.”^[9] Red dots, described by Tosti and colleagues,^[8] are considered a good prognostic factor for of hair regrowth.

Most common dermoscopic finding in patients of DLE was scattered dark brown discoloration of skin seen in 6 (85.71) patients followed by large yellow dots seen in 5 (71.42%) patients.

In Duque-Estrada et al study, Perifollicular scales and inflammation (0%) were not seen in any cases of DLE while Coiled

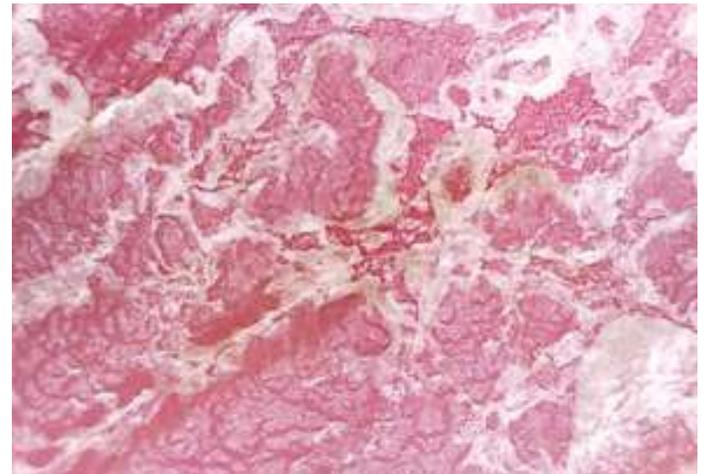


Figure 5 a. : Dermoscopy (200x) of psoriasis showing Silvery Scales.

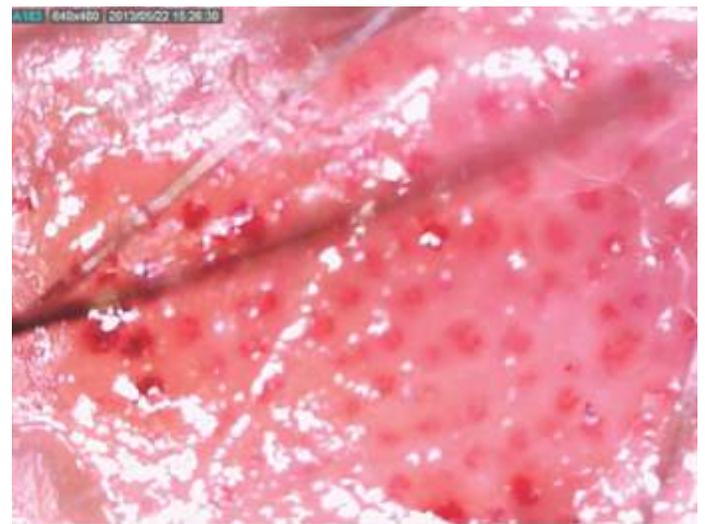


Figure 5 b. : Dermoscopy (50x) of psoriasis showing Red Dots and Globules in Honeycomb Pattern after removing scales (with paraffin)

capillaries and Branching capillaries were seen in 20% and 100% cases. Pigment Network and blue gray dots were observed in 40% of patients.^[30] Our findings are consistent with the above study.

The most significant findings scalp psoriasis are: red dots and globules, twisted red loops, and glomerular vessels. In scalp psoriasis, within the typical scaly plaques, twisted red loops are observed at higher magnification. Twisted loops are also seen to a limited extent in unaffected psoriatic scalp as well as in newly treated psoriatic scalp.

Most common dermatoscopic finding was red dots and globules and silvery scales in all 12 patients of psoriasis followed by twisted red loops in 7 (58.33%) patients in our study.

According to Ross, Dermatoscopy is very useful to distinguish scalp seborrheic dermatitis from scalp psoriasis based on the vascular pattern.^[5,33] The vascular pattern of psoriasis is characterized by twisted loops (100% of the cases)^[5]. Kimet al^[34] recently evaluated with dermatoscopy 55 patients with scalp psoriasis. In psoriasis they describe red dots and globules (most common in their series), twisted red loops, and glomerular vessels. It is, however, important to keep in mind that twisted loops appear as dots on low magnification (up to 320).^[35]

Seborrheic Dermatitis (SD) is characterized by presence of thin arborizing vessels and atypical red vessels. In seborrheic dermatitis, arborizing red lines, which have a wider caliber than the loops, can be observed. This may be helpful in differentiating it from psoriasis. However, capillary loop density seems to be similar in patients with psoriasis, SD and healthy scalp skin, and sometimes twisted loops are observed in seborrheic dermatitis like forms of SD^[5]

Most common dermatoscopic finding in SD was yellow scales seen in 5 (100%) patients followed by thin arborizing vessels seen in 3 (60%) patients in our study.

Kimet al recently evaluated dermatoscopy of 41 patients with SD. In SD the most common patterns are arborizing vessels and atypical red vessels in the absence of red dots and globules.^[34]

Tinea Capitis (TC) usually affects children and is commonest in the 3-7 year age group. It rarely affects adults and has a female preponderance. Comma hairs and corkscrew hairs were found to be characteristic for TC. They have to be distinguished from corkscrew hairs observed in ectodermal dysplasias. Additional findings in TC are broken hairs, damaged hairs and black dots.

According to a study by Slowinska, In tinea capitis distinctive dermatoscopic markers include black dots, broken hair and comma hair.

In our study most common dermatoscopic finding was corkscrew hairs seen in 10 (100%) patients followed by black dots seen in 9 (90%) patients, comma hairs in 8 (80%) patients, broken hairs in 7 (70%) patients. Slowinska et al. reported comma hair in 80% to be a distinctive marker for TC, followed by broken (66%) and black dots (dystrophic hair) (60%).^[36] Comma hair, corkscrew hair and pigtail hair^[37] were all observed only in patients of tinea capitis, thus forming specific features.

Conclusion: Dermoscopy has been shown to enable the visualization of sub-macroscopic morphologic structures invisible to the naked eye. Trichoscopy is used as a diagnostic

aid in differential diagnosis of hair loss and scalp diseases. Hair and scalp disease show distinct patterns in most cases narrowing down the clinical differential diagnosis. Certain aspects of hair and scalp disorders can be better appreciated with dermoscopy than with the naked eye thus avoiding invasive procedures like Biopsy.

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