

Trichoscopy in Alopecias

Manmohan¹, Savita Agarwal², Anand Sharma³, Manisha Nijhawan⁴,
Shivi Nijhawan⁵, Subhash Bishnoi⁶

^{1,2,3,4,5,6}(Department of Dermatology, Mahatma Gandhi Medical College & Hospital, Jaipur, Rajasthan-302022, INDIA)
Corresponding Author: Manmohan

Abstract

Background: Alopecia is a common scalp disorder. Now a days trichoscopy is emerging as an important tool in diagnosis of various scalp alopecias.

Objective: To observe trichoscopic findings of various cicatricial and non cicatricial scalp alopecias.

Methods: A hospital based observational study was performed in one hundred consecutive patients with alopecia. Detailed history, clinical examination, investigation and trichoscopy was performed using a non-polarized trichoscope.

Result: Out of one hundred patients majority were Alopecia areata (42%) followed by Androgenetic alopecia (35%), Lupus erythematosus(4%),Tinea capitis(7%), Telogen effluvium(5%) and Trichotillomania(1%). In Alopecia areata yellow dots were the most common finding followed by black dots and exclamation marks. In AGA yellow dots, thin and vellus hair were seen. In Telogen effluvium most common finding was thinning of hair. In lichen plano pilaris perifollicular inflammation and perifollicular silver white scaling was seen. In tinea capitis comma hair was most common finding followed by cadaverised hair. In trichotillomania broken hair and cadaverized hair were seen.

Limitations: the small number of patients in various types of alopecia was a limiting factor.

Conclusions: Trichoscopy is a very simple, cost effective and non invasive diagnostic tool in hair and scalp disorders, help in differentiating some of the difficult cases of alopecia.

Keywords: Alopecia, Trichoscopy, Cicatricial, Non cicatricial.

Date of Submission: 05-01-2019

Date of acceptance: 21-01-2019

I. Introduction

Alopecia is a common scalp condition which is defined as complete or partial loss of hair from scalp and other hair bearing sites of the body¹. Alopecia is broadly classified into non cicatricial and cicatricial². It is sometimes difficult to diagnose alopecia and treat such patients³. Dermatoscope is a modern diagnostic tool which is very simple, non invasive and bedside test used to study the pattern of skin lesions and subsurface skin structures not normally visible to the unaided eye². The basic principle of dermoscopy is transillumination of a lesion¹⁰. Trichoscopy is a term coined for dermatoscopic imaging of scalp and hair⁸.

II. Aims And Objective

This study was conducted to observe the trichoscopic findings of various cicatricial and noncicatricial scalp alopecias and to explore the utility of dermoscopy in the examination and diagnosis of various hair loss disorders.

III. Method

It is a hospital based observational study conducted in dermatology department at Mahatma Gandhi hospital, Jaipur between January 2018 to June 2018. Hundred consecutive patients with alopecia were enrolled in this study after getting permission from ethical committee.

Patients with active secondary bacterial infection, non consenting and uncooperative patient were excluded.

Detailed history including dermatographic data, family history, underlying diseases and clinical examination were done and photographs were taken.

Diagnosis was done clinically and histopathological examination was performed whenever needed. Hair shaft microscopy in case of hair shaft disorders and hormonal profile in case of female pattern hair loss were performed in needed patients.

IV. Results

To Our study included 100 alopecia patients. Maximum number of patients (41%) were in the age group of 20-30 years. Out of 100 patients, 70% were male and 30% were female. Non cicatricial alopecia outnumbered the cicatricial alopecia with the ratio of 9:1. Most common pattern observed was of Alopecia areata seen in 42% patient followed by Androgenetic alopecia (35%), Lichen planopilaris (6%), Discoid lupus erythematosus(4%),Tinea capitis (7%), Telogen effluvium(5%) and Trichotillomania(1%).

Trichoscopic findings in Alopecia Areata (fig 1.) patients were yellow dots (70%), black dots(60%), exclamation mark (50%), vellus hair (40%) and thin hair (33%).



Fig.1 Characteristic Yellow dots, Black dots and Exclamation mark seen in Alopecia areata.

In Androgenetic Alopecia trichoscopy (fig. 2) showed yellow dots (90%), diameter diversity >20% (80%), thin hair (70%) and vellus hair (40%).

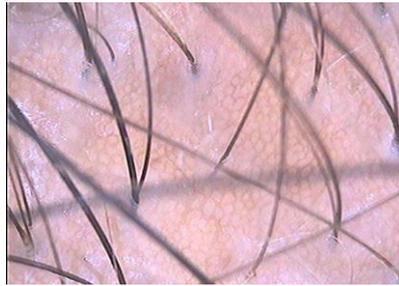


Fig.2 Dermatoscopy of AGA showing thin and vellus hair, hair shaft diameter diversity.

In Telogen Effluvium (fig. 3) findings were thin hair (60%), yellow dots (40%) and regrowing hair (20%).



Fig.3 Dermatoscopy finding showing Thin hairs, Regrowing hair.

In Lichen plano pilaris (fig. 4) findings were perifollicular inflammation (83%), silver white perifollicular scaling (66%), honeycomb pigment network (50%) and yellow dots (50%).



Fig.4 Dermatoscopy of LPP showing silver white perifollicular scaling.

Trichoscopic finding in DLE (fig. 5) patient were loss of follicles (75%), peripilar erythema (25%) and yellow dots (25%).



Fig.5 Characteristic Perifollicular erythema, loss of follicle seen.

In Tinea capitis (fig.6) patients trichoscopic finding were comma hairs (85%), cadaverised hair (70%), black dots (57%), coiled hair (42%) and yellow dots (26%).



Fig.6 Dermatoscopy showing Cadaverised hair, Black dot and Yellow dots.

Trichoscopic finding in patient with trichotillomania (fig. 7) were broken hair and cadaverized hair.



Fig.7 Dermatoscopy showing broken and cadaverized hair.

V. Discussion

Scalp alopecia is a common hair disorder which sometimes create diagnostic dilemma. In such cases apart from clinical examination, trichoscopy is a helpful tool and avoids the need of unnecessary biopsies⁹. Thus showing a link between clinical and histological diagnosis and highlights main findings which helps to make a diagnosis in various type of alopecias⁸.

In our study, most common trichoscopic finding, seen in patient of alopecia areata was yellow dots (70%) which are follicular infundibulum filled with sebum and are round or polygonal in shape, followed by Black dots (60%). Black dots are cadaverized hair which get fractured before emergence from scalp in alopecia areata. Exclamation mark (50%), vellus hair (40%) and thin hair (33%) which is in comparison with other study conducted by vora et al, showing yellow dots(65%), black dots (73%), exclamation mark (75%), vellus hair (29%)². Similarly another study by chiramel et al showed yellow dots (87.5%), black dots (79.2%), exclamation mark (70%), vellus hair (50%) and thin hair (37%)⁵.

In androgenetic alopecia (35%) patients most common finding seen in our study was yellow dots(90%), diameter diversity >20% (80%), thin hair (70%) and vellus hair (40%) while in study by chiramel et al, showed yellow dots (100%), diameter diversity >20% (95%), thin hair (90%) and vellus hair (40%).In a study conducted by Inui et al, showed yellow dots (25%) and diameter diversity >20% (100%)³.

Similarly in tinea capitis (7%) patients trichoscopic finding were comma hairs (85%), cadaverised hair (70%), black dots (57%), coiled hair (42%), yellow dots (26%) as compared to other study by slowinska et al, showing comma hairs (80%), followed by cadaverized hairs (66%), yellow dots (27%), black dots (60%). Chiramel et al conducted a study in 120 patients and showed comma hairs (85%), cadaverized hairs (85%), coiled hairs (57%), yellow dots (28 %) and black dots (28%)⁵.

Most common dermatoscopic finding in patients of LPP was perifollicular inflammation seen in 83% patient followed by silver white perifollicular scaling seen in 66% patients.

Duque Estrada et.al reported perifollicular scaling in all patients with no patient having perifollicular inflammation⁶. In DLE findings were loss of follicles in 75% patients and periaplar erythma and yellow dots in 25%. Chiramel et al demonstrated loss of follicles in 88% cases⁷.

Trichoscopic findings in various scalp alopecias are given in Table 1.

Disease	Trichoscopic findings
AA	Yellow dots, exclamation marks, blackdots, caudability sign, broken hair, vellus hairs
AGA	Yellow dots, hair shaft diameter variation, vellus hair, thin hair
LPP	Peripilar inflammation, perifollicular scaling
DLE	Brown discoloration of skin, large yellow dots.
TINEA CAPITIS	Comma hair, black dots, broken hair
TELOGEN EFFLUVIUM	Thin hair, yellow dots
TRICHOTILLOMANIA	Uneven length, coiled fractured hair

VI. Conclusion

Trichoscopy is a very simple, cost effective and non invasive diagnostic tool in hair and scalp disorders. It help in clinching the diagnosis on basis of its characteristics finding and play an important role in diagnosis and differentiate difficult cases of alopecia areata from trichotillomania and androgenetic alopecia, AGA from telogen effluvium and FPHL, FPHL from telogen effluvium, DLE from Lichen planopilaris.

Acknowledgements

Nil

References

- [1]. Vora RV, Pilani AP, Kota RKS, Singhal RR, Patel TM, Bhavsar ND. Trichoscopic findings in various Scalp Alopecias. Indian Journal of Clinical Dermatology. 2017;1:53-58
- [2]. Nilam Jain, Bhavana Doshi, and Uday Khopkar. Trichoscopy in Alopecias: Diagnosis Simplified. international journal of trichology. 2013;IP:111.93.125.74
- [3]. Inui S, Nakajima T, Itami S. Scalp dermoscopy of androgenetic alopecia in Asian people. J Dermatol 2009; 36: 82-85
- [4]. William Stolz, Peter Bilek, Michael Landchaer, Amandcogneta. Basis of dermatoscopy and skin-surface microscopy. William Stolz, Peter Bilek, Michael Landchaer, Amandcogneta. Color atlas of dermatoscopy. 1st ed. Germany: Blackwell Publications;1994.7-10.
- [5]. Chiramel MJ, Sharma VK, Khandpur S, Sreenivas V. Relevance of trichoscopy in the differential diagnosis of alopecia: A cross-sectional study from North India. Indian J Dermatol Venereol Leprol 2016;82:651-8
- [6]. Duque-Estrada B, Tamler C, Sodre CT, Barcaui CB, Pereira FBC. Dermoscopy pattern of cicatricial alopecias resulting from discoid lupus erythematosus and lichen planopilaris. An Bras Dermatol. 2010; 85 Suppl 2:179-83.
- [7]. Slowinska M, Rudnicka L, Schwartz RA, Kowalska, Oledzka E, Rakowska A, Sicinska J, et al. Comma hairs: A dermatoscopic marker for tinea capitis: A rapid diagnostic method. J Am Acad Dermatol 2008; 59: 77-9
- [8]. Shigeki Inui. Trichoscopy: a new frontier for the diagnosis of hair diseases. ISSN 1746-9872
- [9]. Hamidreza Mahmoudi, Mahdieh Salehi, Saba Moghadas, Narges Ghandi, Amir Teimourpour, and Maryam Daneshpazhooh. Dermoscopic Findings in 126 Patients with Alopecia Areata: A Cross-Sectional Study. International journal of trichology, IP:111.93.125.74.
- [10]. Adriana Rakowska. Trichoscopy (hair and scalp videodermoscopy) in the healthy female. Method standardization and norms for measurable parameters. DOI:10.3315/JDCR.2008.1021.