Original Research Paper

Volume - 11 | Issue - 09 | September - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Dermatology

RELEVANCE OF TRICHOSCOPY IN ALOPECIA AREATA: A CROSS SECTIONAL STUDY

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ABSTRACT **INTRODUCTION:** Alopecia areata is a common, chronic inflammatory disease causing unpredictable, non-scarring form of hair loss affecting any hairy area of the body. Trichoscopy evolved as a new diagnostic modality for its diagnosis and aids in the determination of prognosis with the advantage of being a simple non-invasive outpatient procedure.

OBJECTIVE OF THE STUDY: To evaluate the various trichoscopic findings of Alopecia areata

MATERIALS &METHODS: Cross sectional observational study in which 40 patients with patchy hair loss were evaluated with predesigned proforma, clinical examination and graded according to SALT scoring. Trichoscopic evaluation and capture of trichoscopic images were performed using Dermlite DL3.

RESULTS: Out of 40 AA cases, yellow dots (70%) were the most common feature followed by broken hair(40%) and short vellus hair (40%). Hair shafts of variable thickness and exclamatory mark hairs were seen in 30%patients each. Black dots and coudability sign were seen in 20% patients.

CONCLUSION: Trichoscopy, a non-invasive, in vivo technique for the microscopic examination of scalp in hair loss has the potential to improve the diagnostic accuracy by ruling out other causes of hair loss. It produces real time images, helps the clinician for assessment of severity, prognosis and guides in the timely management and evaluating therapeutic response by comparing it with pre-treatment images.

KEYWORDS : Trichoscopy, Alopecia areata, Noninvasive diagnostic modality, Patchy hair loss

INTRODUCTION:

Alopecia areata is a common hair loss condition encountered in Dermatology outpatient department. It is a type of unpredictable non-scarring patchy form of hair loss affecting any hairy area of the body and is usually reversible affecting males and females equally, and any age group. Pathogenesis involves inflammatory cells attacking the hair follicle matrix epithelium that is undergoing early cortical differentiation (anagen hair follicles), which are then prematurely induced into catagen phase. Scalp biopsy was the one widely used objective tool for diagnosis and monitoring of severity thus far. Trichoscopy which denotes dermoscopic imaging of hair and scalp evolved as a new diagnostic modality for alopecias, which serves as a valuable link between clinical and histopathological diagnosis. It can be carried out with the aid of classic dermoscopes, stereomicroscopes, dermoscopes connected to digital camera or mobile phones, video dermoscopes like Fotofinder. It aids in the determination of prognosis with advantages of being a simple non-invasive outpatient procedure. It helps to differentiate scarring alopecia from non-scarring alopecia, alopecia areata from other common non-scarring alopecias like androgenetic alopecia and telogen effluvium. The usual magnification is 10-20 X for handheld dermoscopes and 20-160 X for video dermoscopes.

AIM OF THE STUDY:

To evaluate the various trichoscopic findings in Alopecia areata

MATERIALS & METHODS:

A hospital-based study was conducted on patients attending dermatology outpatient department in a tertiary care hospital. Patients were recruited from OPD and study was conducted from August 2019 –February 2020.

STUDY DESIGN:

Cross-sectional observational study

SAMPLE SIZE: A total of 40 patients with Alopecia areata diagnosed clinically were included in the study.

EXCLUSION CRITERIA: All other causes of patchy hair loss were excluded

DATA COLLECTION:

After obtaining the consent from the patient, information was taken as per the pre-designed proforma, enclosed, recorded on the clinical forms. Complete history regarding the onset, progression, family and treatment history is included in the proforma. Clinical examination was performed, and patients were given SALT score. Dermlite DL3N handheld dermoscope (X10 magnification) was employed in the study for trichoscopic evaluation. Iphone was attached with the help of a universal adapter to save the images. Area of hair loss over scalp including vertex, occipital, right and left parietal regions were observed through the eyepiece of dermoscope and the photographs were captured with the help of Iphone for analysis.

PARAMETERS SEEN IN TRICHOSCOPIC EXAMINATION:

Structures to be analyzed are hair shaft, follicular openings, peri-follicular / inter-follicular epidermis and cutaneous vasculature for the following parameters.

1. **Yellow dots:** Yellow colored round or polycyclic dots and they represent distended follicular infundibulum consisting of degenerating keratinocytes and sebum. They constitute the most sensitive feature of AA.
2. **Exclamatory mark hairs:** Also referred to as tapering hairs, are characterized by wider diameter in the distal shaft with tapering towards proximal shaft. This pattern marks presence of lymphocytic inflammatory infiltrate affecting the hair bulb and thus, producing thinner shaft. They are observed in most active cases of AA.
3. **Broken hairs:** Dystrophic hairs with fractured roots and telogen hairs are markers of disease activity
4. **Black dots:** Pigmented points seen in yellow dots and they represent fractured hairs at the level of skin surface. Formerly known as “cadaverized” hairs, BDs are sensitive markers of disease activity as well as severity

5. Coudability sign represents kinking of terminal hair towards proximal end when hairs are pushed perpendicularly and is proposed as a marker of disease activity.
6. Hair shafts of variable thickness
7. Short vellus hairs are sensitive markers of hair re-growth. They appear either as coiled hair or as pigtail hairs or lighter pigmented hairs tapering towards distal end.
8. Upright hairs, tulip hairs, zigzag hairs, monilethrix hairs, found less often.

RESULTS:

Table 1: Trichoscopic findings of patients with Alopecia areata in our study

TRICHOSCOPIC FINDING	NUMBER OF PATIENTS(%)
Yellow dots	28(70%)
Exclamatory mark hairs	12(30%)
Black dots	8(20%)
Broken hairs	16(40%)
Coudability sign	8(20%)
Hair shafts of variable thickness	12(30%)
Short vellus hairs	16(40%)

Figure 1: a) Shows exclamatory mark hair. b) Shows coudability hair

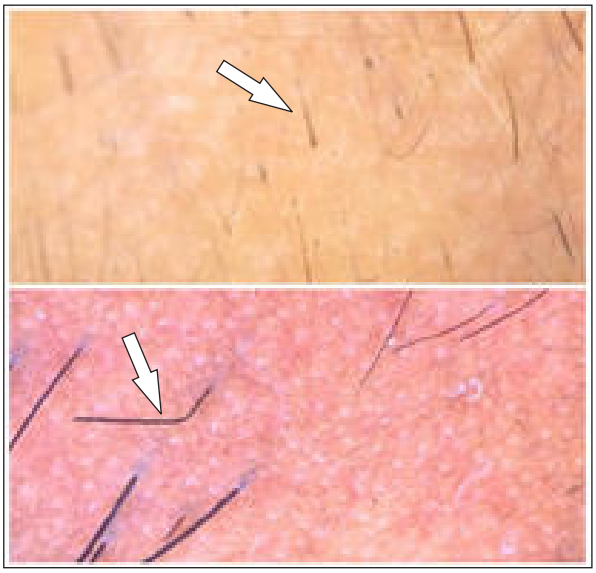
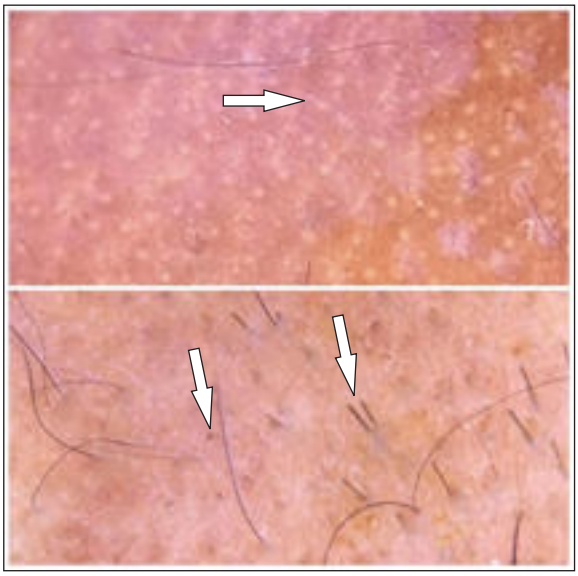


Figure 2: a) Shows multiple yellow dots b) shows broken hair and black dots



DISCUSSION:

Totally 40 patients were included in the study with 20 male and 20 female patients. 15(37.5%) patients belong to the age group of 31-40 which was the highest in our study. The mean age of patients in our study was 32 years, youngest being 3 years old and 55 being oldest. Mean duration of AA was 18 months, shortest being 3 months and longest being 48 months. Majority of patients (65%) had history of atopy. All patients had lesions confined to scalp. Patchy alopecia with single patch was present in 20 (50%) patients. Patients with shorter duration (<6 months) showed EMH and BDs and long standing (>6 months) showed dystrophic hairs. YDs were demonstrated at all stages of AA. The incidence of YDs in our study was 70%, similar to observations of Al-Refu K [11] and constitute the most sensitive feature of AA. Other authors reported 81.8% [5] and 57.3% [6]. EHM were seen in 30% patients in our study consistent with observations of Inui et al. [3] and 12.1% cases by Mane et al [5]. BHs were observed in 40% patients in our study. BHs were demonstrated in varying proportions from 37.33% to 55.4% of AA patients in literature [3,5,6]. BDs were seen in 20% of our patients. Authors of previous studies observed BDs ranging from 44.3% to 67.7% cases of AA [3,5]. Hair shafts of variable thickness were seen in 30% of our patients. Coudability sign was demonstrated in 20% of our patients. SVH were seen in 60% of our patients consistent with previous studies conducted by various authors, where in SVH were observed in 72.7% and 40.9% of cases [3,5]. Short vellus hair appearing as coiled or pigtail pattern was seen in our study.

CONCLUSION:

Trichoscopy evolves as a main tool in the armamentarium of management of alopecias. Being a non-invasive modality, which produces real time images, it helps the clinician for assessment of severity, prognosis and guides in the timely management. EMH, BDs, BH represent severity as well as activity and YDs are observed in every stage of AA. Short vellus hairs represent hair re-growth, and hence they negatively correlate disease activity. These findings can easily be documented which allows the doctor and patient to view the images simultaneously and helps in evaluating a therapeutic response by comparing it with pre-treatment images. Moreover, it is relatively easy to acquire the skill and expertise needed for trichoscopy. It improves the quality of patient care and reduces necessity for scalp biopsies.

REFERENCES:

1. Jain N, Doshi B, Khopkar U. Trichoscopy in alopecias: Diagnosis simplified. International journal of trichology. 2013 Oct;5(4):170.
2. Rudnicka L, Olszewska M, Rakowska A, Slowinska M. Trichoscopy update 2011. Journal of dermatological case reports. 2011 Dec 12;5(4):82.
3. Inui S, Nakajima T, Nakagawa K, Itami S. Clinical significance of dermoscopy in alopecia areata: analysis of 300 cases. International journal of dermatology. 2008 Jul;47(7):688-93.
4. Guttikonda AS, Aruna C, Ramamurthy DV, Sridevi K, Alagappan SK. Evaluation of clinical significance of dermoscopy in alopecia areata. Indian journal of dermatology. 2016 Nov;61(6):628.
5. Mane M, Nath AK, Thappa DM. Utility of dermoscopy in alopecia areata. Indian journal of dermatology. 2011 Jul;56(4):407.
6. Hegde SP, Naveen KN, Athanikar SB, Reshme P. Clinical and dermatoscopic patterns of alopecia areata: A tertiary care centre experience. International journal of trichology. 2013 Jul;5(3):132.
7. Rudnicka L, Olszewska M, Rakowska A, editors. Atlas of trichoscopy: dermoscopy in hair and scalp disease. Springer Science & Business Media; 2012 Dec 15.
8. Madani S, Shapiro J. Alopecia areata update. Journal of the American Academy of Dermatology. 2000 Apr 1;42(4):549-66.
9. Whiting DA. Histopathologic features of alopecia areata: a new look. Archives of dermatology. 2003 Dec 1;139(12):1555-9.
10. Ankad B, Beergouder SL, Panchkattimath VS, Sheik Ahmed M. Trichoscopy of alopecia areata: A diagnostic aide. Hair Ther Transplant. 2014 Jan 1;4(126):2167-0951.
11. Al-Refu K. Clinical significance of trichoscopy in common causes of hair loss in children: Analysis of 134 cases. International journal of trichology. 2018 Jul;10(4):154.