

Trichoscopy For Eyelash Involvement in Lichen Planopilaris: A Pilot Prospective Study

Kelati Awatef¹, Wassim Halli¹, Soumiya Chiheb¹

¹ Dermatology Department, University Hospital Cheikh khalifa, and the University Hospital Mohammed VI. Faculty of Medicine, Mohammed VI University of Health and sciences (UM6SS), Casablanca, Morocco

Key words: Trichoscopy, Dermoscopy, Eyelashes, Eyebrows, Hair disorders, Lichen planopilaris

Citation: Kelati A, Halli W, Chiheb S. Trichoscopy For Eyelash Involvement in Lichen Planopilaris: A Pilot Prospective Study. *Dermatol Pract Concept*. 2024;14(4):e2024274. DOI: <https://doi.org/10.5826/dpc.1404a274>

Accepted: July 1, 2024; **Published:** October 2024

Copyright: ©2024 Kelati et al. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (BY-NC-4.0), <https://creativecommons.org/licenses/by-nc/4.0/>, which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Kelati Awatef, Dermatology Department, University Hospital Cheikh khalifa, and the University Hospital Mohammed VI. Faculty of Medicine, Mohammed VI University of Health and sciences (UM6SS), Casablanca, Morocco.
E-mail: akelati@um6ss.ma / awatkelati@gmail.com

Introduction

Available data regarding eyelash involvement in cicatricial alopecia concern only frontal fibrosing alopecia [1]; no data are available concerning lichen planopilaris (LPP). In this study, we aimed to investigate the clinical and trichoscopic involvement of the eyelashes in patients with LPP.

Case Presentation

This prospective study was approved by the ethics committee of the University Mohammed VI of Health and Sciences of Casablanca.

Disease activity assessment (scalp involvement) was performed using the LPP activity index (LPPAI) [2].

Clinical evaluation of eyelash hair loss was based on the clinician-reported outcomes (ClinRO), which was first used for alopecia areata [3]. The extent of eyelash hair involvement was assessed based on the percentage of the area affected per dermoscopic field (AADF) (< 50%, ≥ 50%).

A total of 30 patients were examined, and 75 images were evaluated (Table 1). The average patient age was 42.8 ± 14.4 years, and females were predominant (73.3%). A classical pattern of LPP was present in 14 patients, while a diffuse variant of LPP was described in 16 patients. None of the patients complained of reduced lashes.

Eyelash involvement was not clinically visible in the majority of patients (24 patients with a ClinRO scale score of 1 (80%)); only six patients had a ClinRO score of 2, with eyelashes that are not evenly spaced along the eyelids.

Eyebrow involvement was noticed in all the patients, with an affected surface area between 10% and 30% (20 patients, 66.6%).

Twelve patients (40%) had an AADF of more than 50%. Peripilar white halo, peripilar casts, visualization of hair bulbs through the skin, and telangiectatic vessels were significant trichoscopic signs associated with LPP activity ($P=0.001$, $P=0.032$, $P<0.001$, and $P=0.05$, respectively).

Peripilar scaling of two or more hairs from the same follicle was associated with peripilar white halos of the eyelashes

Table 1. Analysis of the Patients' Clinical and Trichoscopic Characteristics.

Variables	Number	Percentage (%)	Significant associations	p-value
Sex	F: 22 M: 8	73.3 26.7		
Scalp involvement	30	100		
-With visible alopecia (Classical LPP)	14	46.6		
-Without visible alopecia (Diffuse variant of LPP)	16	53.3		
LPP clinical subtype	14	46.6		
Classical pattern	16	53.3		
Diffuse variant				
Body hair involvement	6	20	Male sex and family history of the disease	<0.001
Eyelash visible involvement (ClinRo score of 2)	6	20	Clear phototype (III/IV)	0.004
Trichoscopic evaluation (AADF)	18	60		
< 50%	12	40		
≥ 50%				
Peripilar scaling	30	100		
Peripilar scaling of two or more hairs from the same follicle	27	90	-Vellus hair in the eyebrows -Peripilar white halo in the eyebrows -Peripilar white halos in eyelashes	0.024 0.003 0.04
Peripilar casts	15	50	Disease activity	0.032
Peripilar white halo	29	96.6	-Family history of the disease -Disease activity	0.025 0.027
Diffuse white background	16	53.3		
Visualization of hair bulbs through the skin	6	20	-Disease activity -Active eyebrow involvement Severe eyelash involvement (ClinRO score of 2)	<0.001 0.005 <0.001
Telangiectatic vessels	25	83.3	Disease activity	0.05

Abbreviations: AADF: Area affected per dermoscopic field; ClinRO: Clinician-reported-outcome scale.

($P=0.04$) and trichoscopy findings of vellus hair and peripilar white halos on the eyebrows ($p=0.024$ and $P=0.003$, respectively).

Visualization of hair bulbs through the skin was significantly associated with active eyebrow and eyelash involvement ($P=0.005$ and $P < 0.001$, respectively).

Eyelash hair disorders are less studied than scalp and eyebrow diseases [4–6]. However, trichoscopic findings of the eyelashes such as peripilar white halos, peripilar casts, and telangiectatic vessels could be of great help in the early diagnosis of the disease and in assessing the disease activity, as we have found in our study (Figure 1).

Interestingly, trichoscopy can also predict the prognosis of eyelash LPP based on visualization of hair bulbs through the atrophic skin, and peripilar scaling of two or more hairs

from the same follicle that was significantly associated with fibrosis expressed as peripilar white halos of the eyelashes and eyebrows. Thus, trichoscopy may also help select treatment options based on the extent of the surface involved, including the eyelashes.

Visualization of hair bulbs through the atrophic skin has already been described in a study of eyelash involvement in patients with frontal fibrosing alopecia and was significantly noticed on the upper eyelid [1].

Study limitations were the small sample size and the absence of a control group.

In conclusion, trichoscopy could be an interesting non-invasive tool for the diagnosis of eyelash LPP, in addition to predicting the prognosis of eyelash involvement at an early stage.

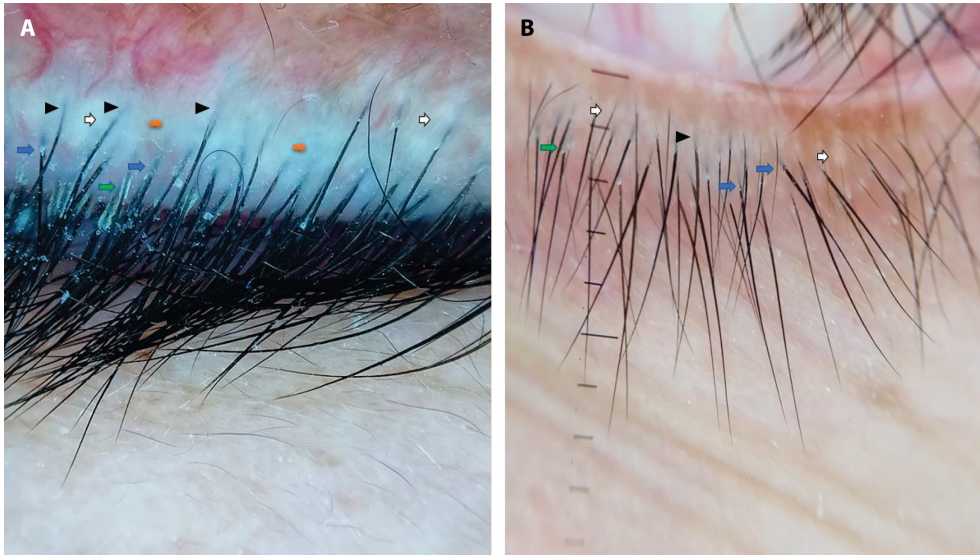


Figure 1. Trichoscopy image of eyelash involvement in a patient with active lichen planopilaris. A: upper eyelashes. B: lower eyelashes. Peripilar scaling of two or more hairs from the same follicle (blue circle), peripilar casts (green arrow), peripilar scaling (blue arrow), peripilar white halo (white arrow), diffuse white background (orange arrow), visualization of hair bulbs through the skin (black arrow).

References

1. Salas-Callo CI, Tosti A, Stohmann D, Contarini P, Pirmez R. Eyelash involvement in frontal fibrosing alopecia: A prospective study. *J Am Acad Dermatol.* July 2022;87(1):232-4. DOI: 10.1016/j.jaad.2021.07.063.
2. Chiang C, Sah D, Cho BK, Ochoa BE, Price VH. Hydroxychloroquine and lichen planopilaris: Efficacy and introduction of Lichen Planopilaris Activity Index scoring system. *J Am Acad Dermatol.* 1 Mar 2010;62(3):387-92. DOI: 10.1016/j.jaad.2009.08.054.
3. Wyrwich KW, Kitchen H, Knight S, et al. Development of Clinician-Reported Outcome (ClinRO) and Patient-Reported Outcome (PRO) Measures for Eyebrow, Eyelash and Nail Assessment in Alopecia Areata. *Am J Clin Dermatol.* Oct 2020; 21(5):725-32. DOI: 10.1007/s40257-020-00545-9.
4. Mumford BP, Eisman S, Yip L. Acquired causes of eyebrow and eyelash loss: A review and approach to diagnosis and treatment. *Australas J Dermatol.* Feb 2023;64(1):28-40. DOI: 10.1111/ajd.13947.
5. Na JI, Kwon OS, Kim BJ, et al. Ethnic characteristics of eyelashes: a comparative analysis in Asian and Caucasian females. *Br J Dermatol.* Dec 2006;155(6):1170-6.
6. Nguyen B, Hu JK, Tosti A. Eyebrow and Eyelash Alopecia: A Clinical Review. *Am J Clin Dermatol.* Jan 2023;24(1):55-67. DOI:10.1111/j.1365-2133.2006.07495.x