BRIEF ARTICLES

Lichen Planopilaris Associated with Spray-on Sunscreen

Timothy J. Orlowski, MD,[1] H. Harris Reynolds, MD,[2] Boni E. Elewski, MD[2]

[1]479th Flying Training Group, Aviation Medicine Department, Naval Hospital Pensacola, Pensacola, FL USA
[2]University of Alabama at Birmingham, Department of Dermatology, Birmingham, AL USA

ABSTRACT

Lichen Planopilaris (LPP) and Frontal Fibrosing Alopecia (FFA) have been linked to many cosmetic products that contain ultraviolet (UV) filters and new evidence points to an association with UV filters in hair-care products.1-3 We present a case report with clinical findings of a LPP/FFA overlap associated with spray-on sunscreen use. Underlying the basis of this association are the similar trichoscopic and histologic findings of LPP and FFA, as well as, the possible association with regular use of facial sunscreen.

CASE REPORT

A 49 year old female was referred to our university-based dermatology outpatient clinic for a three year history of scarring hair loss affecting her anterior hairline and extending centrally in her part area (Figure 1). Exam was remarkable for patchy alopecia along the anterior hairline with posterior extension through the part line. Decreased follicular density, perifollicular erythema, and perifollicular scale were noted on trichoscopy. The patient's eyelashes and eyebrows were not affected. A punch biopsy was performed at the active edge of erythema. Histopathology revealed scarring cicatricial alopecia consistent with lichen planopilaris. A complete blood count, comprehensive metabolic panel, and anti-nuclear antibody titer were unremarkable. She was started on hydroxychloroquine 400mg daily, minoxidil 5% foam daily, finasteride 2.5mg daily, and topical clobetasol 0.05% ointment daily.

At her follow-up visit, our patient brought photos of a spray-on sunscreen she had been applying for one to two years prior to the onset of her hair loss. This sunscreen was applied directly to the areas of hair loss visible on physical exam. She had been applying the sunscreen to her central scalp, as this area was often exposed to sunlight due to the way her hair was parted. Notably, this product contained homosalate and octisalate, two salicylates that act as chemical UV absorbers (Table 1). We recommended she discontinue this product. Follow-up was pending at the time of publication.

Figure 1. Scarring alopecia extending posteriorly along the part area, corresponding with areas of sunscreen application.

Table 1. Active ingredients in implicated spray-on sunscreen.

Sunscreen	Active Ingredients	Inactive Ingredients
Banana Boat Sport Quik Dri Scalp Spray Sunscreen SPF 30, 6 Ounces	Avobenzone (1%), Homosalate (8.78%), Octinoxate (7.5%), Octisalate (5%), Oxybenzone (5%)	SD Alcohol 40, C12 15 Alkyl Benzoate, Diethylhexyl 2 6 Naphthalate, Acrylates/Octylacrylamide Copolymer, Fragrance, Aloe Vera (Aloe Barbadensis) Extract, Retinyl Acetate (Vitamin A), Tocopherol (Natural Vitamin E)

DISCUSSION

Our patient's regular, direct application of this sunscreen only to areas with visible disease preceded the onset of her scalp symptoms by one to two years. Furthermore, some of this sunscreen's active ingredients, namely homosalate and octisalate, are in the same family of chemical UV absorbers as the active ingredients reported by Canavan et al. Their case report parallels our patient presentation—Caucasian females who developed LPP in the setting of spray-on scalp sunscreen use.[1] Both patients had a long history of sunscreen application to their frontal scalp and hair part as well as similar histologic findings on scalp biopsy.[1] To our knowledge, this is one of only several case reports of LPP associated with scalp sunscreen use that has been reported in the literature.[1-4] Although further studies are needed to establish causality, these similar patient presentations could indicate potential correlation between regular sunscreen use and lichen planopilaris. Large scale epidemiologic studies may be useful in shedding further light on the potential association between the use of chemical sunscreens and the development of LPP/FFA.

Conflict of Interest Disclosures: Dr. Orlowski was active duty Air Force at the time of submission. The views expressed are those of the authors and are not to be construed as official or as representing those of the US Air Force or the Department of Defense. Dr. Orlowski was a full time federal employee at the time portions of this work were completed. They are in the public domain.
Dr. Elewski and Dr. Reynolds have no conflicts of interest to declare.

Funding: None

Corresponding Author:
Timothy Jay Orlowski
101 E Romana Street
Apt 355
Pensacola, FL 32502, USA
Tel: 847-370-7347
Email: torlowski13@gmail.com

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