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Lichen planopilaris with significant post-inflammatory pigmentary alteration

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Abstract

Lichen planopilaris is an uncommon dermatological manifestation of lichen planus of the scalp and results in cicatricial alopecia. We present a patient with lichen planopilaris and significant post-inflammatory pigmentary alteration, confirmed by histopathology. The patient's case represents a clinically important variation from an expected typical pattern of dyschromia at periphery of alopecic zones in lichen planopilaris.

Keywords: lichen planopilaris, lymphocytic scarring alopecia, post-inflammatory pigmentary alteration, skin of color

Introduction

Lichen planopilaris is a dermatological manifestation of lichen planus of the scalp, resulting in cicatricial alopecia. Although the exact cause of lichen planopilaris is unknown, it is believed to have an autoimmune etiology involving T-lymphocytes [1]. Herein, we report and discuss a patient presenting with lichen planopilaris and significant reticulated post-inflammatory pigmentary alteration.

Case Synopsis

A 33-year-old man with a history of adult acne and atopic dermatitis presented with a 3-month history of hyperpigmented patches. The patient first noticed the lesions when he shaved his head because of

itchiness. The macules first started on the lateral aspects of the scalp and spread throughout the entire scalp, with new patches appearing on the left jaw line (**Figure 1**). The patient reported that the lesions were mildly and intermittently pruritic, particularly when first appearing. Accompanying cicatricial alopecia was noted.

The patient had a history of scalp scarring as a result of injuries sustained in civil wars throughout his life in Afghanistan. There was no reported fever, pain, swelling, redness, or discharge. Examination of the shaved scalp revealed hyperpigmented scaling macules coalescing into hyperpigmented patches in a reticulate pattern on the scalp. Other areas of the body including mucous membranes, axillae, and groin were negative for new lesions, rash, or hair loss.

A left occipital scalp punch biopsy was performed and revealed lichenoid folliculitis with perifollicular fibrosis (**Figure 2A**) and pigmentary alteration (**Figure 2B**). These histological findings were consistent with a diagnosis of lichen planopilaris. Baseline complete blood count and liver function tests were ordered and were within normal limits. The complete blood count and hepatic function panel test results were within normal limits. A diagnosis of lichen planopilaris was made and the patient was initiated on hydroxychloroquine sulfate 200 milligrams twice per day by mouth. Sun protection to prevent exacerbation of hyperpigmentation was also advised. An ophthalmology examination was scheduled to track for possible ocular side effects of the medication.

Upon returning after therapy for 54 days, slow improvement was seen as dark brown-to-tan scaling

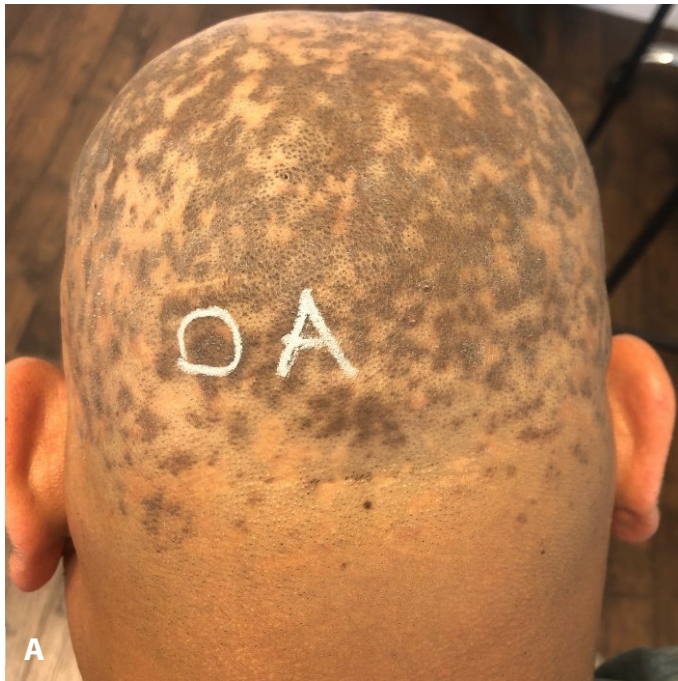


Figure 1. A) Occipital view of the scalp of patient at initial presentation showing diffuse reticulated perifollicular inflammation with associated post-inflammatory hyperpigmentation. Areas of clearing of areas of cicatricial alopecia are present and lack follicular ostia. Biopsy area circled by white marker and labeled site "A." **B)** View of the crown and vertex of the scalp of patient at initial visit (before treatment).

hyperpigmented macules coalescing into patches on the patient's scalp had lightened since the previous visit. Slight new hair growth was noted in the previously inflamed areas of the vertex scalp (**Figure 3**). There was still significant itching immediately post-showering, for which topical clobetasol 0.05% was started for affected areas. Hydroxychloroquine was continued.

Case Discussion

Classic lichen planopilaris clinically presents as scalp lesions that are patches that can be pruritic, tender, scaling, and burning; increased hair loss may be

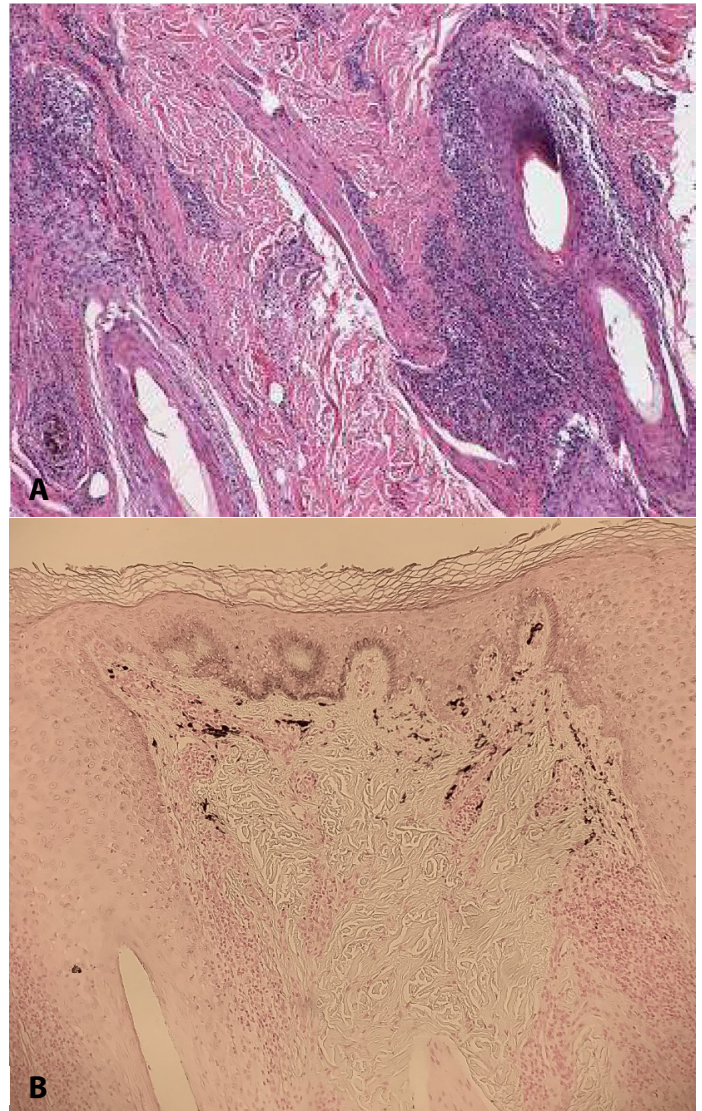


Figure 2. Histopathology of punch biopsy from hyperpigmented and actively inflammatory lesion of the left occipital scalp shows A) lichenoid folliculitis with perifollicular fibrosis, and B) dermal melanin deposition with Fontana-Masson stain.



Figure 3. Crown of patient's scalp post-treatment (with hydroxychloroquine 200mg twice a day) 68 days after initial presentation and 54 days after treatment initiation. Some patchy hair regrowth seen in previous areas of active inflammation.

noted. The scalp lesions can be singular or multiple. Classically these involve the vertex and present as centrifugal patches in other regions of the scalp including parietal and frontal regions [2]. Our patient had diffuse scalp involvement with reticulated distribution. Systemic treatment was indicated owing to rapid progression, scarring, and diffuse involvement. Hydroxychloroquine was deemed to be a suitable alternative to systemic corticosteroids because of its lesser side effect profile. It should be noted that hyperpigmentation is not an uncommon side effect of hydroxychloroquine although that was not seen in this particular case.

Upon presentation, differential diagnoses included lichen planus, cutaneous lupus erythematosus, and

coexisting seborrheic dermatitis. On dermatopathology examination of an inflammatory region, the typical features of lichenoid folliculitis and perifollicular fibrosis characteristic of lichen planopilaris were seen [3]. Fontana-Masson stain additionally showed melanin deposition consistent with post-inflammatory pigmentary alteration. However periodic acid–Schiff and Grocott-Gomori methenamine silver stains showed absence of fungus. Additionally, Alcian blue/periodic acid–Schiff and colloidal iron stains showed mild dermal deposition.

Our patient has a presentation of lichen planopilaris with diffuse inflammation and post-inflammatory pigmentary alteration. Typically, the follicular violaceous erythema and keratotic plugs are seen at the periphery of notable bald zones. Both inflammation and post-inflammatory pigmentary alteration was confirmed by histology, and the patient improved clinically after treatment with hydroxychloroquine.

Conclusion

Lichen planopilaris can present with significant post-inflammatory pigmentary alteration in a diffuse reticular pattern in the areas of active inflammation and can be confirmed on histopathology. These lesions may improve and lighten in color with appropriate systemic treatment.

Potential conflicts of interest

Raja Sivamani serves on the scientific advisory board for LearnHealth and Arbonne, and has received honoraria from Burts Bees, Regeneron Pharmaceuticals, Abbvie Pharmaceuticals, UCB, Leo, Sun Pharmaceuticals, Physicians Exclusive, and Nutrafol. All other authors declare no conflicts of interests.

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