

Tacrolimus and Tretinoin for Isolated Lower Lip Lichen Planus

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Abstract

Lichen planus (LP) is a chronic inflammatory dermatosis with a prevalence of 0.1%–4%, typically affecting individuals aged 30–60 years. Isolated lip involvement is uncommon, seen in 0.51%–8.9% of cases, predominantly in middle-aged men. We report a 58-year-old male with well-controlled diabetes who developed isolated lower lip LP, initially misdiagnosed as herpes simplex virus infection and unresponsive to oral acyclovir. Dermoscopy and histopathology confirmed the diagnosis. The patient was managed with a novel regimen: Tacrolimus 0.1% ointment (morning) and tretinoin 0.025% cream (night), alongside sunscreen and petroleum jelly. After 4 weeks, marked improvement was observed with flattened lesions and reduced pruritus. This case underscores the potential efficacy of combining a calcineurin inhibitor and a retinoid as a corticosteroid-sparing alternative for localized LP. Clinically, this approach offers a valuable treatment option for patients with lip LP showing suboptimal response to initial corticosteroid therapy, minimizing steroid-related adverse effects and improving therapeutic outcomes.

Keywords: Alternative therapies, isolated lip lesions, lichen planus, tacrolimus, tretinoin

Key Messages:

- Isolated lip LP is rare and often misdiagnosed, especially when presenting as persistent lip lesions
- In this case, a 58-year-old male with lower lip involvement showed a suboptimal response to topical corticosteroids but achieved significant lesion reduction and symptomatic improvement after initiating combined topical tacrolimus–tretinoin therapy
- Tacrolimus (immune-modulating) and tretinoin (retinoid regulating keratinization and epithelial turnover) were used together, leading to significant improvement in just 4 weeks
- This combination offers a promising, steroid-sparing alternative for managing localized lip LP, though further studies are needed to establish standard protocols.

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INTRODUCTION

Lichen planus (LP) is a chronic inflammatory condition affecting 0.1%–4% of the global population, commonly between ages 30 and 60.^[1] It presents with varied clinical

patterns based on lesion configuration and distribution. Oral LP (OLP) occurs in 60% to 70% of cases, while lip involvement ranges from 6.3% to 29.4%;^[1,2] isolated lip LP is rare (0.51%–8.9%), often in middle-aged men.^[2,3]

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Standard therapy includes topical corticosteroids and systemic immunosuppressants.^[1] Emerging options like calcineurin inhibitors and retinoids are promising for resistant cases. Combining tacrolimus and tretinoin may enhance epithelial regeneration while controlling inflammation, offering synergistic benefits in localized, corticosteroid-refractory LP.

CASE REPORT

A 58-year-old male with well-controlled type 2 diabetes mellitus maintained on gliclazide presented with a 4-month history of intermittent pruritic papules on the lower lip. Initially diagnosed as herpes simplex virus (HSV) infection and treated with oral acyclovir, the lesions persisted without improvement. He denied any history of similar lesions, medication use, trauma, tobacco use, or sun sensitivity. There were no skin, scalp, nail, or oral mucosal lesions.

Dermatologic examination revealed well-demarcated, violaceous papules coalescing into plaques over the vermilion of the lower lip, with overlying crusting and fine white reticulations. The patient reported intermittent pruritus rated at 4/10 in severity, along with burning, tenderness, and discomfort triggered by spicy or acidic foods. Dermoscopic examination revealed violaceous grouped papules with fine white reticular lines (Wickham striae) and surface crusting [Figure 1a and b]. Based on the clinical and dermoscopic findings, a diagnosis of isolated lip LP with secondary bacterial infection was considered.

A 3 mm skin punch biopsy was performed. While awaiting histopathologic confirmation, the patient was prescribed a topical combination of mupirocin and betamethasone dipropionate ointment applied twice daily for 2 weeks. This preparation was selected for its combined antibacterial and mid-potency anti-inflammatory properties, providing convenient dual coverage and promoting adherence by reducing the need for multiple topical agents.

On follow-up after 2 weeks, the lesions showed a suboptimal response, with persistence of erythema, scaling, Wickham striae, intermittent pruritus of similar severity, and no evidence of lesion flattening. The biopsy revealed parakeratosis overlying an irregular acanthotic epidermis with wedge-shaped hypergranulosis, sawtooth rete ridges, civatte bodies, and a lichenoid lymphocytic infiltrate at the dermoepidermal junction [Figure 2], confirming the diagnosis of LP.

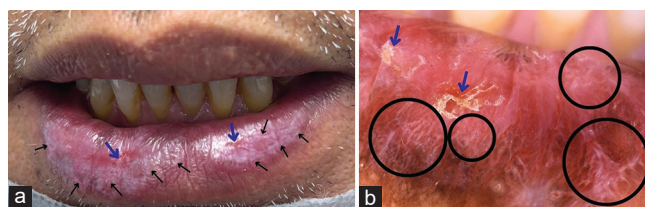


Figure 1: Few well-defined, irregularly shaped, violaceous grouped and confluent papules with crusts (blue arrow) and fine white lines (Wickham striae) (black arrow) on the lower lip (a). Dermoscopy shows violaceous grouped papules with crusts (blue arrow) and fine white reticular lines consistent with Wickham striae (circle) (b)

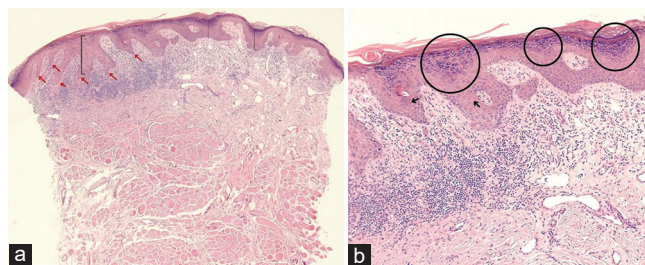


Figure 2: (a and b) Hematoxylin and eosin stain (H and E, ×4 and ×10 respectively). The section demonstrates parakeratosis overlying an irregular acanthotic epidermis (bracket) with wedge-shaped hypergranulosis (circle), sawtooth rete ridges (red arrow), civatte bodies (black arrow), and a lichenoid lymphocytic infiltrate at the dermoepidermal junction



Figure 3: Patient at 4-week follow-up showing few, well-defined, irregularly shaped, skin-colored to faintly violaceous macules and papules on the lower lip, with flattening of previous plaques and marked reduction in erythema and crusting

Following confirmation of the diagnosis and considering the patient's minimal response to the initial 2-week course of previous treatment, we adopted a novel approach for this rare case of isolated lip LP. The patient was prescribed a topical regimen consisting of tacrolimus 0.1% ointment once daily in the morning, followed by petroleum jelly and broad-spectrum sunscreen, and tretinoin 0.025% cream at night, also topped with petroleum jelly.

At the 4-week follow-up, the patient demonstrated significant clinical improvement. The lower lip lesions appeared flatter, with a marked reduction in erythema

and crusting. Residual violaceous discoloration persisted but was much less pronounced. The patient reported marked improvement in symptoms, with pruritus reduced to 1–2/10 in intensity when present and minimal burning or tenderness when consuming spicy or acidic foods. No adverse effects such as irritation, erythema, or peeling were observed [Figure 3].

Given the favorable response, the topical regimen was continued for two additional weeks. Thereafter, tacrolimus 0.1% ointment was planned to be tapered to once daily every other day for another 2 weeks before discontinuation, while maintaining regular use of emollient and broad-spectrum sunscreen. Tretinoin 0.025% cream was advised to be continued nightly for up to 8 weeks in total, depending on tolerance and sustained remission. Follow-up was recommended every 4–6 weeks to monitor for recurrence or new lesion development, aligning with current management approaches for localized mucocutaneous LP.

DISCUSSION

LP is a chronic inflammatory condition that often presents in middle-aged individuals, with OLP being more common in females, though isolated lip LP tends to affect middle-aged males.^[2,3] The patient in this case, a 58-year-old male with controlled diabetes, presented with a solitary papule on the lower lip that evolved into erythematous papules coalescing into plaques with crusting, initially misdiagnosed as HSV infection. This underscores the diagnostic challenge of LP, particularly on the lips, where lesions may mimic with other conditions such as HSV or traumatic cheilitis. A definitive diagnosis was established after dermoscopy demonstrated violaceous papules with Wickham striae, while histopathology confirmed features consistent with LP.

The clinical presentation in this case was predominantly reticular, characterized by interlacing white striae confined to the lower lip—an area most frequently affected in isolated lip LP.^[2,4] Compared with erosive variants, the reticular form exhibits a more indolent course, minimal discomfort, and a lower tendency for ulceration or scarring.^[2,3] However, chronicity and aesthetic concerns often necessitate therapeutic intervention. While erosive LP typically requires potent topical or systemic corticosteroids, the reticular variant may respond to topical immunomodulators and keratolytic agents that control inflammation and epithelial hyperkeratosis.^[5]

Topical corticosteroids remain the cornerstone of LP management; however, long-term application on the

lips may lead to mucosal atrophy, telangiectasia, perioral dermatitis, delayed wound healing, and secondary candidiasis, limiting their use in sensitive areas.^[5,6] These potential adverse effects highlight the value of steroid-sparing alternatives that provide comparable efficacy with improved tolerability.

Topical tacrolimus and tretinoin have demonstrated efficacy in managing lip LP. Tacrolimus, a calcineurin inhibitor, suppresses T-cell activation and cytokine release, leading to clinical improvement. Byrd *et al.* reported significant improvement with 0.1% tacrolimus^[7] while Hasan *et al.*, Garma *et al.*, and Marcu Selaru *et al.* similarly documented favorable outcomes in isolated lip LP with minimal adverse effects.^[2–4] Tretinoin has demonstrated benefit in managing hyperkeratotic lesions, supporting its use in combination with tacrolimus as a potentially effective therapeutic approach for isolated lip LP.^[2,5,8] A review of the literature identified 32 case reports on isolated lip LP, with tacrolimus and tretinoin emerging as useful alternatives for cases unresponsive to corticosteroids.^[2]

This case report describes a novel approach of combining topical tacrolimus and tretinoin in treating isolated lip LP, a combination that may enhance therapeutic outcomes by addressing both immune dysregulation and skin cell turnover. While other treatments, including systemic therapies and imiquimod, have been explored, this novel regimen may offer a more targeted and potentially effective option for localized LP.

This report is limited by its single-patient design and short duration of follow-up. Larger studies with extended monitoring are needed to substantiate the efficacy and safety of this therapeutic combination and to assess its applicability in the broader management of isolated lip LP.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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