

## Penile Lichen Planus Successfully Treated With Topical Pimecrolimus

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### Abstract

**Observation:** Lichen planus is a T-cell mediated chronic mucocutaneous disorder of unknown etiology. Occasionally, genital area involvement may be the sole manifestation of the disease. First-line treatment is topical corticosteroids, but some cases may not respond to these agents. A 50-year-old male patient presenting with gray-white reticular lesions on the penis was given a clinical diagnosis of lichen planus and the patient showed clearance of the lesions at the end of treatment with pimecrolimus %1 cream. Topical pimecrolimus may be a useful second-line therapeutic option for genital lichen planus unresponsive to topical corticosteroids and it may induce sustained remissions.

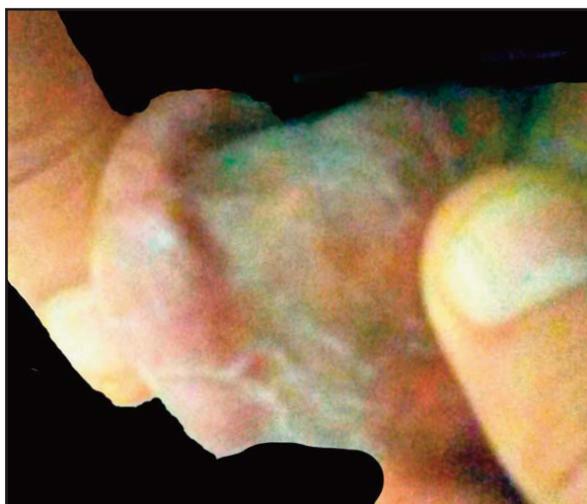
### Introduction

Lichen planus (LP) is an inflammatory dermatosis of mucocutaneous surfaces that can present with a wide spectrum of clinical manifestations[1]. The pathogenesis is presumed to be a T-cell mediated attack on basal keratinocytes [2]. Occasionally, genital area may be involved with variable clinical presentations in LP [3]. Topical corticosteroids are used as first-line treatment in the management of genital LP [2], but some cases may be resistant to this modality. Pimecrolimus is a topical calcineurin inhibitor (TCI) that inhibits the proliferation of T cells after antigen-specific or non-specific stimulation [4]. Here, we describe a case resistant to topical corticosteroids which demonstrated clearance with topical pimecrolimus treatment.

### Case Report

A 50 year-old man presented with nonpruritic whitish lesions involving genitalia. The lesions had appeared ten years ago and he had been treated with various topical corticosteroid preparations with some temporary improvement. On dermatological examination, gray-white linear and reticular lesions were noted on corpus penis (Figure 1). Examination of the oral mucosa and nails was unremarkable as well as systemic examination. The patient declined performing a biopsy. Serum biochemistries and complete blood count were within reference intervals and hepatitis serologies were negative. Pimecrolimus cream %1 twice a day was started and clinical improvement was seen at the end of the first month. The patient demonstrated complete clearance at the end of ten weeks without any adverse effects (Figure 2).

During a ten-month follow-up, no recurrences were noted.



**Figure 1:** Linear, reticular lesions located to the corpus penis



**Figure 2:** Clinical improvement of skin lesions after treatment

### Discussion

LP is a T-cell mediated dermatosis of unknown etiology [1,2]. Classical lichen planus is a dermatosis characterized by violaceous, flat topped, polygonal and pruritic papules localized to flexural areas of the wrists and ankles. The thighs, lower back, trunk and neck may also be affected as well. Oral mucosa and genital areas are additional sites of involvement [1]. Typically, genital area is involved as a part of a systemic process or it may occur as the sole manifestation of LP [5]. The male genitalia are involved in 25% of cases of LP and the glans penis is most commonly affected site. Most frequently, LP presents with annular lesions or linear, leukokeratotic lesions consisting of flat white papules that tend to join up into compact patches or networks. Erosive LP involving genital area is less frequent in men and usually affects the glans penis [3, 5, 6]. Well-described therapies for LP involving genitalia include topical corticosteroids, TCIs for mild cases and systemic corticosteroids, retinoids and hydroxychloroquine for resistant cases [1,7]. Topical corticosteroids are considered as first-line treatment in the management of genital LP, but their prolonged use is associated with well-known side effects such as cutaneous atrophy [2]. These effects are more prominent in the genital region. TCIs including tacrolimus and pimecrolimus, have been used to treat patients with genital LP in previous reports [2, 7, 8], but to the best of our knowledge, pimecrolimus was not used in male patients with genital

LP. In a study carried out by Lonsdale-Eccles and Velangi, pimecrolimus cream was administered to eleven women with genital lichen planus. Ten patients had erosive lichen planus whereas one patient had classical lesions. Six patients (%55) had complete response and three (%27) had partial response [2]. In a retrospective series of 16 women with vulvar lichen planus, topical tacrolimus therapy effectively controlled symptoms and improved lesions in all but one patient. The lesions and symptoms recurred soon after the patients stopped treatment; in most patients, however, the lesions were less severe than the lesions before treatment, and the lesions responded when topical therapy was resumed [7]. A case of lichen planus involving male genitalia was also responsive to %0,03 tacrolimus [8]. TCIs act by preventing calcineurin-mediated dephosphorylation of nuclear factor of activated T-lymphocytes. This inhibits the synthesis of Th1 and Th2 cytokines from T cells [2]. Topical pimecrolimus has a theoretical advantage over topical tacrolimus in that it impairs Langerhans cell function to a lesser degree and this may confer a better long-term safety profile [9]. In addition, it has a lower permeability through the skin than topical steroids or tacrolimus [10]. This is the first case showing the efficacy of topical pimecrolimus in genital LP in a male patient. Our case indicates that topical pimecrolimus may be an effective second-line treatment option in the management of genital lichen planus and its effects are long-lasting. The more selective mode of action, lack

of atrophogenic potential and significant systemic absorption make pimecrolimus a useful agent in cases resistant to topical corticosteroids.

## References

1. Lehman JS, Tollefson MM, Gibson LE. Lichen planus Int J Dermatol 2009; 48: 682-694. PMID: 19570072
2. Lonsdale-Eccles AA, Velangi S. Topical pimecrolimus in the treatment of genital lichen planus: a prospective case series. Br J Dermatol 2005; 153: 390-394. PMID: 16086755
3. Andreassi L, Bilenchi R. Non infectious inflammatory genital lesions. Clin Dermatol 2014; 32: 307-314. PMID: 24559568
4. Jensen JM, Pfeiffer S, Witt M, et al. Different effects of pimecrolimus and betamethasone on the skin barrier in patients with atopic dermatitis. J Allergy Clin Immunol 2009; 123: 1124-1133. PMID: 19410693
5. Buechner SA. Common skin disorders of the penis. BJU Int 2002; 90: 498-506. PMID:12175386
6. Usatine RP, Tinitigan M. Diagnosis and treatment of Lichen Planus. Am Fam Physician 2011; 84: 53-60. PMID: 21766756
7. Byrd JA, Davis MD, Rogers RS. Recalcitrant symptomatic vulvar lichen planus: response to topical tacrolimus. Arch Dermatol 2004; 140: 715-720. PMID:15210463
8. Göktay F, Aydıngöz İE, Üstün H. Treatment of a Recalcitrant Genital Lichen Planus with Topical Tacrolimus. Turk Klin Dermatoloji 2004; 14: 114-117.
9. Meingassner JG, Kowalsky E, Schwendinger H, Elbe-Bürger A, Stütz A. Pimecrolimus does not affect Langerhans cells in murine epidermis. Br J Dermatol 2003; 149: 853-857. PMID:14616380
10. Billich A, Aschauer H, Aszodi A, Stuetz A. Percutaneous absorption of drugs used in atopic eczema: pimecrolimus permeates through skin than corticosteroids and tacrolimus. Int J Pharm 2004; 269: 29-35. PMID:14698574