

Topical sirolimus: a novel treatment for chronic erosive plantar lichen planus

Deepani Munidasa¹, Olivia Espinosa², Susan Burge³

Sri Lanka Journal of Dermatology, 2015, 17, 12-13

Abstract

We describe the successful treatment of recalcitrant plantar erosive lichen planus (LP) with topical sirolimus (Rapamycin), a macrolide related immunosuppressant. A 79 year old man, presented with a 3 year history of an itchy, uncomfortable hyperkeratosis on the soles of both feet thought to be eczema. Ultrapotent topical corticosteroids and keratolytics had little impact. Topical phototherapy led to painful ulceration of the left sole. The diagnosis was reconsidered with histology confirming changes of erosive lichen planus. Ulceration persisted despite daily ultrapotent topical corticosteroid and topical tacrolimus. Oral prednisolone (20mg/day) provided short-term relief. Azathioprine and ciclosporin were abandoned due to inefficacy and adverse effects. After 3 years of refractory disease, oral sirolimus solution (1mg/ ml) was applied as a daily wet dressing. Pain was reduced after 4 weeks and ulcers healed completely after 20 weeks. This case report highlights the challenges encountered in the management of erosive plantar LP and the efficacy of sirolimus as a potential therapeutic agent.

Introduction

Ulcerative lichen planus of the sole is an unusual variant of lichen planus with only a few cases reported in the literature. The diagnosis is often difficult to make and successful treatment is a challenge.

Case report

A 79 year old Caucasian man presented to us with a 3 year history of an itchy, uncomfortable hyperkeratosis on the soles of both feet thought to be eczema. Ultrapotent topical corticosteroids and keratolytics used for months had little impact. Topical photochemotherapy (PUVA) as a second line measure reduced the hyperkeratosis, but led to painful ulceration on the left sole (Figure 1).

The diagnosis was reconsidered. Biopsy demonstrated lichenoid and spongiotic changes

confirming erosive LP (Figure 4). He had no other cutaneous or mucosal features of LP. The ulceration persisted despite daily ultrapotent topical corticosteroid and topical tacrolimus. The ulcers caused severe pain that reduced his mobility. Oral prednisolone (20mg/day) provided short-term relief. Azathioprine up to 150mg daily for 10 months was ineffective. Ciclosporin (100mg daily) was abandoned because of adverse effects. Pain was intolerable despite combinations of morphine, amitriptyline and gabapentin.

After 3 years of refractory disease, oral sirolimus solution (1mg/ ml) was applied as a daily wet dressing. Pain was reduced after 4 weeks and the ulcers healed completely after 20 weeks (Figure 2). An asymptomatic but persistent reticulate erythema was noted up to 6 months post treatment (Figure 3).

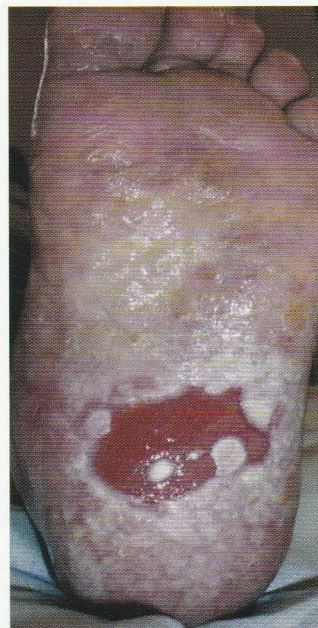


Figure 1. Erosive LP: Painful ulcer on the left sole.

¹Clinical Fellow in Dermatology, Department of Dermatology, Oxford University Hospitals, Oxford, UK. Current affiliations: Consultant Dermatologist, District General Hospital, Polonnaruwa, Sri Lanka. ²Consultant Pathologist, Department of Pathology, Oxford University Hospitals, Oxford, UK. ³ Consultant Dermatologist, Department of Dermatology, Oxford University Hospitals, Oxford, UK.



Figure 2. Healed ulcer at 20 weeks of treatment with topical rapamycin.



Figure 3. Persistent post treatment reticulate erythema of the sole.



Figure 4. Histology H & E demonstrates lichenoid change with spongiosis confirming the diagnosis of erosive lichen planus.

Discussion

Plantar LP may present as clearly defined erythematous plaques, punctate keratoses or diffuse keratoderma. Erosive plantar LP is well described but rare and pain causes significant disability. Diagnosis is often delayed because the morphology is not typical of LP, but purplish reticular change around plantar ulcers should raise suspicions of LP. Skin biopsy will confirm the diagnosis. Some patients have other mucocutaneous features of LP and toe nails are often affected. Verrucous carcinoma may arise within ulcerative plantar LP.

Treatment is difficult but a variety of approaches have been advocated including tacrolimus ointment, topical ciclosporin, ultraviolet A-1 light, acitretin, azathioprine, antimalarials, thalidomide and extracorporeal photophoresis as well as excision with skin grafting.

Immunologically activated T cells appear to drive keratinocyte apoptosis in LP. Sirolimus blocks the activation of T and B cells by inhibiting the response to interleukin. Topical sirolimus has been used successfully for refractory erosive oral LP¹. Therefore, after other treatments had failed, topical sirolimus was prescribed for this patient. Trials are needed to confirm the efficacy of this treatment.

Reference

1. Soria A, Agbo-Godeaus S, Taïeb A, Francès C. Treatment of refractory oral erosive lichen planus with topical rapamycin: 7 cases. *Dermatology* 2009; **218**: 22-5.