

# Subacute Cutaneous Lupus Erythematosus: A Case Report of *Polypodium leucotomos* as an Adjuvant Therapy

Andrew D. Breithaupt, MD; Sharon E. Jacob, MD

*Subacute cutaneous lupus erythematosus (SCLE) is an uncommon autoimmune disease that results in substantial photosensitivity of affected patients. Eruptions often are triggered or exacerbated by UV light (UVL) exposure. We present a case of a patient with SCLE who was moderately controlled with hydroxychloroquine sulfate but achieved near total remission of disease after the addition of oral Polypodium leucotomos supplement which has photoprotective effects on human keratinocytes. We report sustained clinical response with the use of P leucotomos in lupus and suggest that it may have future application in photosensitizing dermatoses.*

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## Case Report

A 59-year-old man with no remarkable medical history presented with a persistent eruption on his back of more than 25 years' duration. He also described occasional facial and neck eruptions. He denied pruritus, pain, irritation to the area, or any medications associated with the onset of the eruption. Systemic review of systems did not reveal any abnormalities. The lesions had been unresponsive to multiple topical steroid treatments.

Physical examination revealed an approximately 14-cm area in the center back with multiple red, raised, firm papules arranged in a multicentric annular configuration with background erythema and no scaling (Figure, A). There were no lesions on the face, neck, chest, abdomen, or extremities at the time of initial examination. Pertinent laboratory test results included an antinuclear antibody titer of 1:40, Sjögren syndrome antigen A of 62 (positive, >10),

and a negative anti-double-stranded DNA. Biopsy from an affected area of the back demonstrated interface dermatitis with superficial and deep perivascular and perifollicular infiltrate.

Following diagnosis of subacute cutaneous lupus erythematosus (SCLE), the patient began initial treatment with hydroxychloroquine sulfate 200 mg daily, which increased to 200 mg twice daily after 3 months. The patient also was counseled about sun avoidance and placed on daily use of zinc oxide sunscreen. After 6 months of treatment, 80% improvement was noted, with only a small area of the back remaining affected; however, he continued to experience reoccurring flares of his facial and neck eruptions. It was decided to add a dietary supplement of oral *Polypodium leucotomos* 240 mg daily. Within 4 months, the patient subsequently ceased to have any additional facial and neck flares and had complete clearance of his back (Figure, B). Additionally, in 37 months of daily use, our patient has had only 3 minor flares on his back, all occurring in the summer months and rapidly responding to triamcinolone cream 0.1%.

## Comment

Subacute cutaneous lupus erythematosus is a connective-tissue disorder that causes a nonscarring, nonatrophic photosensitive dermatosis.<sup>1</sup> The course of the disease often is marked by exacerbations and remissions. The eruption usually consists of psoriasiform plaques that are often annular; it may be confused with discoid lupus erythematosus, erythema multiforme, or erythema annulare centrifugum. Approximately 80% of patients experience lesions on the trunk and upper extremities, while only 20% of patients have lesions occurring on the face or scalp. Subacute cutaneous lupus erythematosus is 4 times more common in females and usually presents in middle-aged patients.<sup>2</sup>

The pathophysiology of the disease is thought to be a complex interplay of genetic, environmental, and immunologic factors.<sup>1</sup> Of the environmental factors,

From the Department of Dermatology and Cutaneous Surgery, University of California, San Diego, Rady Children's Hospital.

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Correspondence: Sharon E. Jacob, MD, Rady Children's Hospital, 8010 Frost St, Ste 602, San Diego, CA 92123 (Sjacob@contactderm.net).



Eruption before (A) and after hydroxychloroquine sulfate and *Polypodium leucotomos* treatment (B).

UV light (UVL) and drugs seem to play the most important role. UV light, especially UVB, increases the rate of apoptosis of keratinocytes, which leads to the release of nuclear structures that are phagocytosed and presented to lymphocytes. Accumulation of these products leads to an autoimmune response in genetically susceptible individuals, which is responsible for the dermatosis of SCLE.<sup>1</sup>

Patient history often correlates poorly with the presence or absence of photosensitivity due to the delay between UVL exposure and disease exacerbation. Current data indicate that approximately 50% to 100% of patients with SCLE are photosensitive.<sup>3</sup> Antimalarials are considered first-line agents for the treatment of SCLE, with 80% of patients achieving good control.<sup>4</sup> Sun protection also is a critical component of treatment. Although sunscreens are the mainstay of sun protection, they have not

been assessed for efficacy with respect to their ability to prevent UV photosensitivity, carcinogenesis, and immunosuppression in these patients.<sup>5</sup>

*Polypodium leucotomos* is a plant used for generations in South America for the treatment of skin conditions. It has been shown to have photoprotective effects in human keratinocyte cells by inhibiting tumor necrosis factor  $\alpha$  and nitric oxide production.<sup>6</sup> Experimental evidence has demonstrated decreased UVL-induced skin damage in participants taking *P leucotomos* compared to healthy volunteers (controls).<sup>7</sup> It also has been shown in animal models to inhibit UVL-induced immunosuppression and possibly skin cancer formation.<sup>8</sup> Its use as an adjuvant therapy in disease is only beginning to be elucidated, with some evidence of efficacy in the treatment of vitiligo.<sup>9</sup>

### Conclusion

We report a case of SCLE treated with *P leucotomos*. We suggest that it may be a good adjuvant treatment to increase sun protection in these highly photosensitive patients.

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