Successful treatment of palmoplantar psoriasis with chemical peeling and gentian violet

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Key words: chemical peel; gentian violet; palmoplantar; psoriasis.

INTRODUCTION

Palmoplantar psoriasis (PPP) remains a difficult dermatologic disorder to treat, even in the age of biologics. This condition causes significant morbidity in that it can interfere with a patient's ability to work as well as walk. We present a patient who has had an excellent response using a combination of 40% trichloroacetic acid (TCA) peels and gentian violet. This provides proof of principle that this technique can be used more widely to treat palmoplantar psoriasis.

CASE REPORT

A 70-year-old African American woman with a history of type 2 diabetes mellitus presented to our clinic with a 10-year history of a pruritic rash of her hands, previously diagnosed as "eczema" by an outside physician. She had a personal and family history of seasonal allergies but denied eczema as a child, and she did not have asthma. She used triamcinolone 0.1% and clobetasol 0.05% ointments, camphor/menthol lotion, urea cream, bacitracin ointment, and triple antibiotic ointment in the past without any significant improvement. For the weeks leading up to her visit to our clinic, she used only triamcinolone ointment.

On examination, scaly, ill-defined erythematous plaques on the soles and palms were noted (Fig 1), as well as linear excoriations on the back in a butterfly distribution. A differential diagnosis of dyshidrotic eczema versus palmoplantar psoriasis versus allergic/irritant contact dermatitis of the palms and soles was established, though no triggers were identified. The patient deferred biopsy of the palms or soles. PPP was considered the most likely diagnosis, as the patient lacked the history of vesicles that is characteristic of dyshidrotic eczema, and also had an extensive smoking history, which predisposes to PPP rather than dyshidrotic eczema.[1] The patient's history was not consistent with allergic contact dermatitis. Initial management included increasing to clobetasol 0.05% ointment twice daily under occlusion with a cotton glove, cetirizine 10 mg by mouth every morning, hydroxyzine 25 mg by mouth as needed at night, and camphor and menthol lotion as needed for the itch. Frequent unscented emollient use was also strongly encouraged, and she was instructed to stop all other topical treatments. Four months later, the patient returned to our clinic and reported no improvement of her rash; at the time, she rated her disease severity as 10/10. Potassium hydroxide preparation test was negative for spores and hyphae, and a decision was made to treat the palms and soles with 40% trichloroacetic acid followed immediately by 1% gentian violet application. The patient was instructed to continue with clobetasol twice daily to the hands. She was to wash her hands as normal, but it was recommended that gentian violet stays on the palms and soles for at least 2 hours before washing them. No side effects were observed by the patient.

Abbreviations used:

PPP: palmoplantar psoriasis
TCA: trichloroacetic acid

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Funding sources: None.
IRB approval status: Not applicable.

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JAAD Case Reports 2021;17:28-30.
2352-5126

https://doi.org/10.1016/j.jdcr.2021.08.017

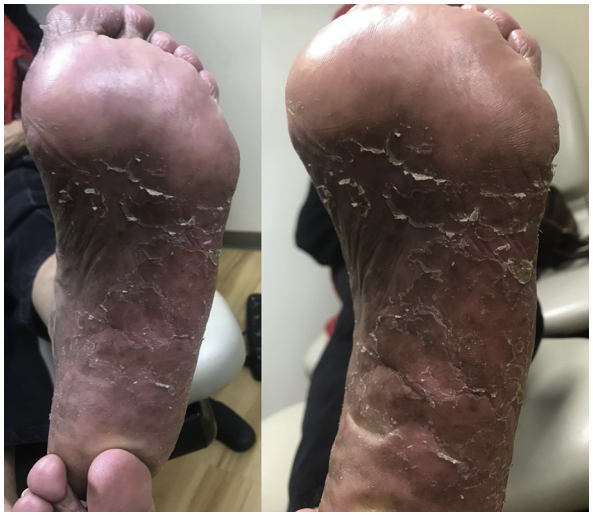

Fig 1. Left sole of the patient before her first treatment. Large, hyperpigmented lichenified plaque extending from the distal midplantar part of the foot to the proximal midplantar part of the foot with significant scale.

The hands did not require any pretreatment before application of TCA.

When the patient returned 1 month later, she reported a significant improvement of the itch and rash of her palms and soles, and a significant improvement on the scale and erythema of the palms and soles was observed on examination (Fig 2). The patient has returned for a total of 3 treatments with recommended twice-weekly application of gentian violet to the palms and soles. She noted sustained improvement of the scale, itch, and erythema of her palms and soles on each subsequent visit (Fig 3).

DISCUSSION

We present a case report of a patient with PPP who responded well to topical therapies, including chemical peeling and gentian violet. We have treated other patients with this modality, and this case is representative of our patients. Palmoplantar psoriasis remains a debilitating skin disorder even in the age of biologics and apremilast.[2,3] Often it is the only focus of involvement, thus involving less than 5% of the body surface area, but the significant morbidity of hand and foot involvement often requires systemic treatment. We describe a novel modality for the treatment of PPP.

We used a medium-potency TCA peel for the following reasons. First, the removal of superficial scale enhances the penetration of the therapeutic agent through thick volar skin. Second, inflammatory conditions of the skin result in the alkalinization of the skin, and treatment with TCA helps restore the normal acidity of noninflamed skin.[4] Notably, application of 40% to 50% TCA to broken skin with fissures on is not painful, especially when compared with application of TCA to sun-damaged skin. Second, we find that monthly applications are most efficacious, since these prevent the buildup of scale. Gentian violet is added because it has both antiinflammatory activity (by inhibition of NADPH oxidase) and antibacterial activity against gram-positive organisms.[5] Recently, Canada withdrew gentian violet from the market. The reasons for this withdrawal are due to older animal

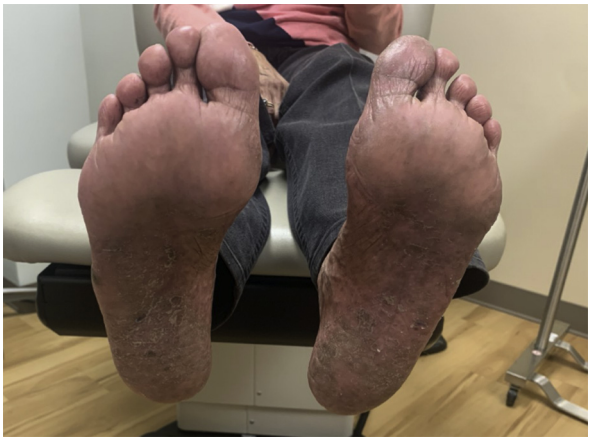

Fig 2. Four weeks after the first treatment with the 40% TCA peel and gentian violet application. The patient noted a significant improvement of the scale, itch, and redness of her soles. Residual postinflammatory hyperpigmentation was noted.

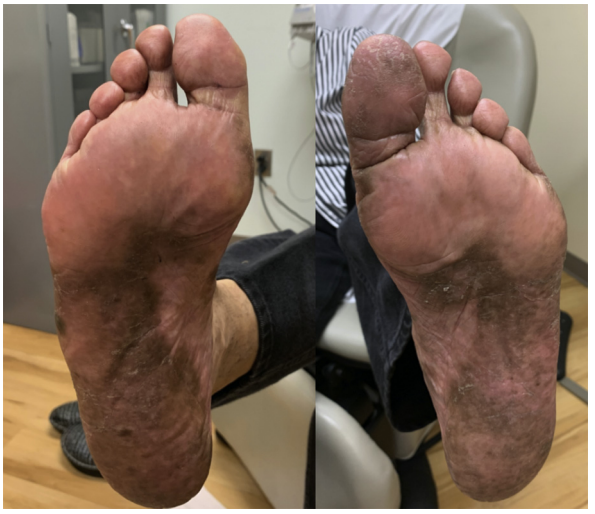

Fig 3. Four weeks after the second treatment with TCA 40% and gentian violet. The patient reports continued improvement of her itch, scaling, and redness. Lichenified plaques of the posterior parts of the soles, which were previously confluent, were starting to resolve. Residual postinflammatory hyperpigmentation is still observed.

studies, in which very large doses of systemic gentian violet were administered to rodents over very long periods of time. This was associated with an increased rate of liver tumors. However, for more than a century of gentian violet use, there has not been a single cause of human cancer directly attributable to gentian violet.[6] In addition, we and others have demonstrated antitumor activity of gentian violet against cutaneous lymphomas.[7,8] Chemical peeling allows the removal of excess stratum corneum, and we have not observed Koebnerization as a result of the chemical peel.

Systemic therapies are often used for PPP, given the amount of morbidity, even though a small percentage of body surface area is involved. Biologic therapies are often used as systemics. All systemic therapies require laboratory monitoring, and currently, we have no measures to determine when it is safe to end systemic therapies. Therefore it is likely that many patients are receiving systemic therapies when they do not require them. Finally, biologics are recombinant proteins, and their production is complex. This complexity of production makes the supply of biologics vulnerable to disruption, either accidentally or deliberately by hackers.

We demonstrate the use of a novel modality in the treatment of PPP, namely a TCA chemical peel followed by gentian violet. While this technique requires office time, it does not require laboratory monitoring and preauthorizations as required for systemic therapies. We hope that other practitioners will find this novel modality useful in the treatment of PPP.

Conflicts of interest

None disclosed.

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