Novel Use of Topical Dapsone 5% Gel for Leukocytoclastic Vasculitis

Luke Johnson, MD; Austin R. Cope, B.S.; David A. Pate, MD; Michelle B Tarbox, MD
Texas Tech University Health Science Center, Department of Dermatology

INTRODUCTION

Leukocytoclastic vasculitis (LCV) is a disease characterized by inflammation of small vessels with characteristic clinical findings of petechiae and palpable purpura. Numerous etiologies have been described, but the disease commonly remains idiopathic. LCV often spontaneously resolves within weeks and requires only symptomatic treatment. Chronic or severe disease can require systemic medical treatment with agents such as colchicine, dapsone, and corticosteroids. These are effective but carry risks of significant side effects. These side effects and/or medical contraindications prevent some patients from taking systemic medications for LCV. We present a case of LCV resolving after treatment with topical dapsone, highlighting a potential new treatment for LCV with a markedly better side effect profile.

CASE REPORT

A 60-year-old woman with recent upper respiratory and sinus infections presented to our dermatology clinic with painful palpable purpura on the bilateral shins, thighs, and dorsal feet for several weeks (Figure 1). She initially visited her primary care provider, and he started amoxicillin and doxycycline for her infections. When the rash developed, he referred her to Dermatology and Rheumatology. The treating dermatologist obtained a 4mm punch biopsy and the histology showed LCV. The patient completed her courses of doxycycline and amoxicillin without resolution of her eruption. After an extensive investigation, the treating rheumatologist concluded that the LCV was idiopathic or secondary to infections or drug exposure. The rheumatologist started the patient on oral prednisone for her chronic symptomatic LCV, but she was intolerant of this medication and discontinued it after 1 week. Our clinic started her on triamcinolone 0.1% cream twice daily, but she continued to experience new and worsening lesions. At her follow up appointment 2 months later, she discontinued the triamcinolone cream and started dapsone 5% gel twice daily. She experienced resolution of her previously recalcitrant LCV within 3 weeks (Figure 2).

DISCUSSION

Established therapies for LCV carry significant side effect profiles which can preclude their use. A topical therapeutic alternative for LCV would be ideal. Systemic prednisone is first-line therapy for chronic and/or symptomatic LCV, but its side effects include suppression of the hypothalamic-pituitary-adrenal axis, immunosuppression, osteonecrosis, and glucose intolerance. Colchicine therapy carries risks of blood dyscrasias, immunosuppression, and gastrointestinal upset. Systemic dapsone is also an effective therapy for chronic and/or symptomatic LCV.

However, systemic dapsone requires glucose-6-phosphate dehydrogenase (G6PD) deficiency screening, routine monitoring of blood counts, and carries the risk of significant adverse effects including neuropathy, blood dyscrasias, and hypersensitivity syndrome. Topical dapsone may provide similar efficacy with far fewer adverse effects. Topical dapsone is proven to be a safe treatment for acne, even when used for patients with G6PD deficiency. It displays low systemic absorption and does not accumulate over time once a steady state is reached. It has also been shown to be beneficial in other vasculopathies such as erythema elevatum diutinum and in other neutrophilic inflammatory disorders such as pyoderma gangrenosum.

LCV can resolve spontaneously; however, this patient’s disease was chronic for 6 months, and she continued to develop new lesions without signs of resolution. After initiating topical dapsone, she experienced a resolution of her disease within 3 weeks.

CONCLUSION

Topical dapsone is a novel approach for treating LCV. Given this drug’s favorable side effect profile compared to the currently available therapeutic alternatives, we believe it is a reasonable option in selected patients. Further investigation is needed to prove its efficacy, but it could be an ideal alternative for patients with contraindications to traditional therapies and/or for those unable to tolerate systemic therapy.

REFERENCES