Leukocytoclastic Vasculitis Resolution With Topical Dapsone

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PRACTICE **POINTS**

- Leukocytoclastic vasculitis is characterized by inflammation of small vessels with characteristic clinical findings of petechiae and palpable purpura.
- Leukocytoclastic vasculitis often spontaneously resolves within weeks and requires only symptomatic treatment, but chronic or severe disease can require systemic medical treatment with agents such as colchicine, dapsone, and corticosteroids.

Leukocytoclastic vasculitis (LCV) is a disease characterized by inflammation of small vessels presenting with petechiae and palpable purpura. Leukocytoclastic vasculitis often spontaneously resolves within weeks and requires only symptomatic treatment. Chronic or severe disease can require systemic treatment with agents such as colchicine, dapsone, or corticosteroids, which are effective but carry a risk for serious adverse events. These side effects and/or medical contraindications preclude some patients from taking systemic medications for LCV. We present a case of biopsy-proven LCV in a 60-year-old woman that resolved after treatment with topical dapsone. Systemic dapsone is effective at treating LCV but requires screening for glucose-6-phosphate dehydrogenase deficiency and routine monitoring of blood counts, and its possible adverse effects include neuropathy, blood dyscrasia, and hypersensitivity syndrome. Topical dapsone may provide similar efficacy with far fewer adverse effects. Given this drug's favorable side-effect profile compared to the currently available alternatives, we believe it is a reasonable option in selected patients.

Cutis. 2017;99:426-428.

Leukocytoclastic vasculitis (LCV) is a disease characterized by inflammation of small vessels with characteristic clinical findings of petechiae and palpable purpura.[1] Numerous etiologies have been described, but the disease commonly remains idiopathic.[2,3] Leukocytoclastic vasculitis 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 agents are effective but carry risks of serious side effects.[4,5] These side effects and/or medical contraindications prevent some patients from taking systemic medications for LCV. We present a case of LCV that resolved after treatment with topical dapsone, highlighting a potential new treatment of LCV with a markedly better side-effect profile.

Case Report

A 60-year-old woman with recent upper respiratory tract and sinus infections presented to our dermatology clinic with painful palpable purpura on the bilateral shins, thighs, and dorsal aspects of the feet

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The authors report no conflict of interest.
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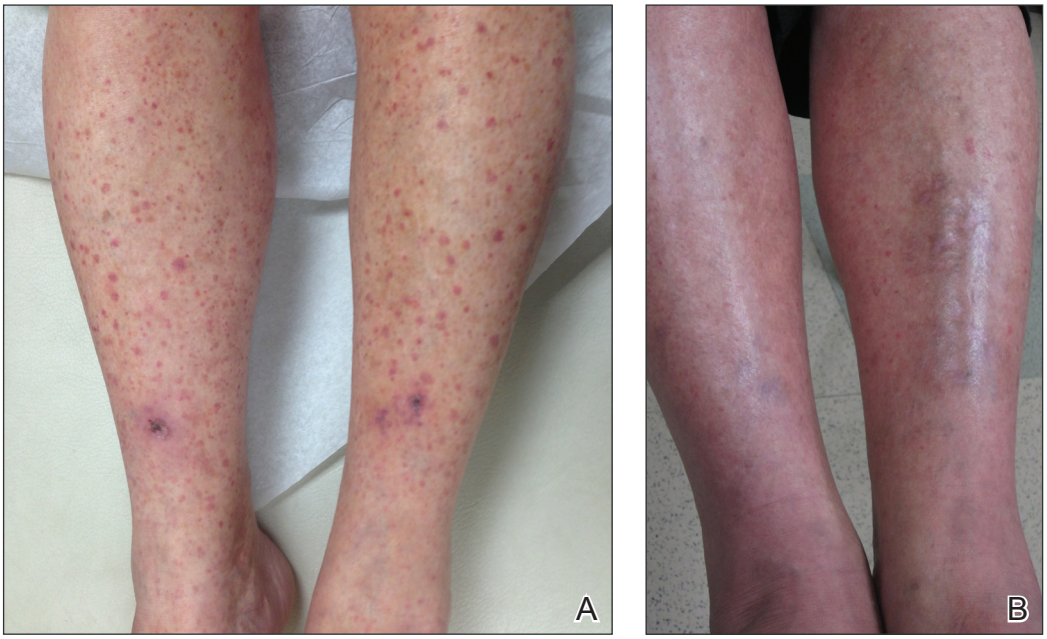
of several months' duration (Figure, A). Her primary care provider initiated treatment with amoxicillin and doxycycline for the infections. When the rash developed approximately 1.5 weeks following initiation of her symptoms, the patient was referred to the dermatology and rheumatology departments at our institution. The treating dermatologist (M.B.T.) obtained a 4-mm punch biopsy from the right lower leg and LCV was shown on histology. The patient completed a 14-day course of doxycycline and amoxicillin without resolution of the eruption. After an extensive investigation, the treating rheumatologist concluded that the LCV was idiopathic or secondary to an infection or drug exposure. The rheumatologist started the patient on oral prednisone for the chronic symptomatic LCV, but she was intolerant of this medication and discontinued it after 1 week. Our dermatology clinic started her on triamcinolone cream 0.1% twice daily, but she continued to experience new and worsening lesions. At her follow-up appointment 1 month later, triamcinolone cream was discontinued and dapsone gel 5% twice daily was started. She experienced resolution of her previously recalcitrant LCV within 3 weeks (Figure, B).

Comment

Established therapies for LCV carry serious side-effect profiles, which can preclude their use.[5] Therefore, a topical therapeutic alternative for LCV would be ideal. Systemic prednisone is the 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.[5] Colchicine therapy carries risks for blood dyscrasia, immunosuppression, and gastrointestinal tract upset. Systemic dapsone also is an effective therapy for chronic and/or symptomatic LCV.[5,6] However, systemic dapsone requires glucose-6-phosphate dehydrogenase deficiency screening and routine monitoring of blood counts, and it also carries the risk for serious adverse effects including neuropathy, blood dyscrasia, and hypersensitivity syndrome.[5,6] Topical dapsone may provide similar efficacy with far fewer adverse effects and has proven to be a safe treatment of acne, even when used in patients with glucose-6-phosphate dehydrogenase deficiency. It displays low systemic absorption and does not accumulate over time once a steady state is reached.[7] It also has been shown to be beneficial in other vasculopathies such as erythema elevatum diutinum and in other neutrophilic inflammatory disorders such as pyoderma gangrenosum.[8,9] A case of methemoglobinemia due to topical dapsone has been reported.[10] Although this effect is rare, clinicians should be aware of such adverse effects when using medications for off-label purposes.

Leukocytoclastic vasculitis can spontaneously resolve; however, our patient's disease was chronic for several months, and she continued to develop new lesions without signs of resolution. After initiating topical dapsone, she experienced resolution within 3 weeks.



Petechiae and purpura from leukocytoclastic vasculitis affecting the bilateral shins before (A) and after 3 weeks of treatment with topical dapsone (B).

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 select 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.

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