

# Recurrent Pruritic Multifocal Erythematous Rash

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A 60-year-old man with a history of hyperlipidemia developed acute onset of an intensely pruritic and painful burning rash on the dorsal aspect of the left forearm of 8 days' duration. The patient described the rash as red and warm. It measured 2 cm at inception and peaked at 12 cm 6 months later when the patient presented. These symptoms resolved without therapeutic intervention.

Over the ensuing 6 months, he experienced 13 self-limited episodes of erythematous indurated cutaneous streaks, usually with proximal migration on the arms along with involvement of the posterior thorax and right leg. Five months prior to the onset of the initial rash, the patient had discontinued ezetimibe to treat hyperlipidemia due to swelling of the lips and tongue. He also reported that he regularly hunted in upstate Pennsylvania

but reported no history of arthropod or animal bites. The patient did not take prescription or over-the-counter medications, and he denied the presence of fever, night sweats, fatigue, adenopathy, anorexia, weight loss, diarrhea, joint pain or swelling, or illicit drug use. Lyme titers, complete blood cell count, erythrocyte sedimentation rate, and comprehensive metabolic panel were within reference range. A punch biopsy was performed.

## WHAT'S THE DIAGNOSIS?

- acute urticaria
- erythema migrans
- infectious cellulitis
- urticarial vasculitis
- Wells syndrome

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The authors report no conflict of interest.

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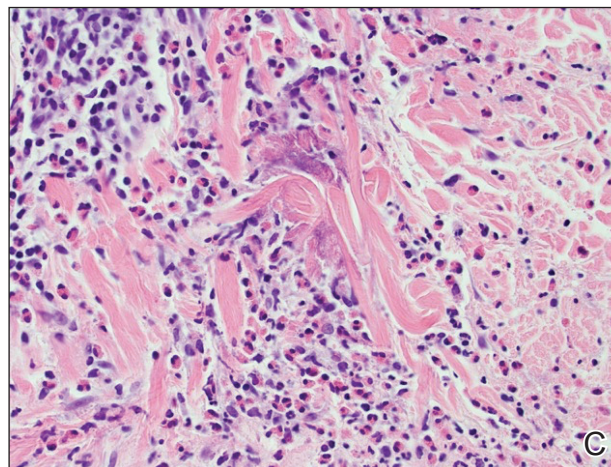
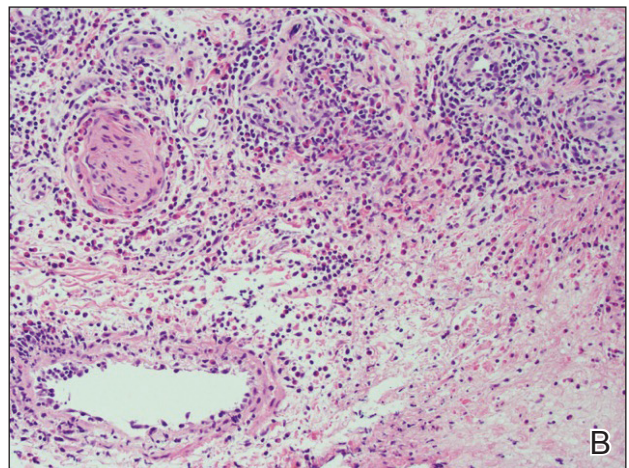
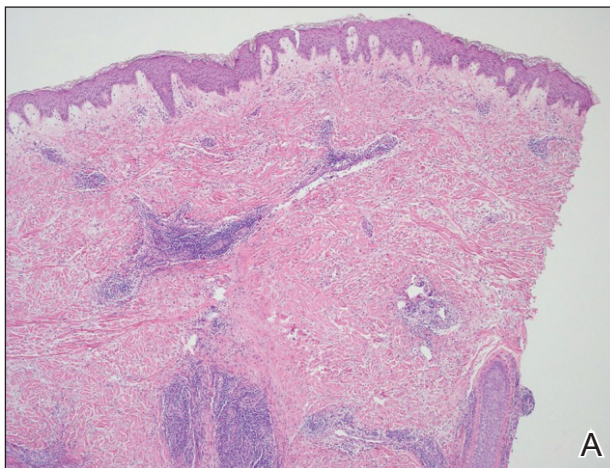
## THE DIAGNOSIS: Wells Syndrome

**H**istopathologic examination of the biopsy demonstrated overlying acanthosis, focal spongiosis, and exocytosis. There also was proliferation and thickening of superficial capillaries and papillary fibrosis (Figure, A). There was a mixed interstitial and perivascular inflammatory infiltrate consisting of lymphocytes, histiocytes, plasma cells, and eosinophils (Figure, A and B). Occasional flame figures were identified (Figure, C).

Wells syndrome, also known as eosinophilic cellulitis, was first described in 1971 by Wells<sup>1</sup> as a recurrent granulomatous dermatitis with eosinophilia. Rarely reported worldwide, this chronic relapsing condition is characterized by a pronounced eosinophilic infiltrate of the dermis resembling urticaria or cellulitis.<sup>2</sup> The exact etiology has not been elucidated; however, links to certain

medications, vaccines, exaggerated arthropod reactions, infections, and malignancies have been documented.<sup>3</sup>

Wells syndrome is a diagnosis of exclusion and lacks a predictable dermatologic presentation, thereby mandating focused clinical follow-up as well as correlation with histopathology findings. Although the classic histologic hallmark of Wells syndrome is scattered flame figures, this finding is not specific and can be found in other hypereosinophilic conditions.<sup>2</sup> Clinical manifestations most often consist of 2 distinct phases: an initial painful burning or pruritic sensation, followed by the development of erythematous and edematous dermal plaques that may heal with slight hyperpigmentation over 4 to 8 weeks. A case series of 19 patients demonstrated variants of Wells syndrome, with an annular granuloma-like



Wells syndrome. A, Histopathologic examination showed thickening of superficial capillaries and papillary fibrosis (H&E, original magnification  $\times 4$ ). B, There was a mixed interstitial and perivascular inflammatory infiltrate consisting of lymphocytes, histiocytes, plasma cells, and eosinophils (H&E, original magnification  $\times 20$ ). C, Occasional flame figures were identified (H&E, original magnification  $\times 40$ ).

appearance found primarily in adults and the signature plaque-type appearance predominating in children.<sup>4</sup>

Acute urticaria is characterized by pruritic erythematous wheals secondary to a histamine-mediated response brought on by a variety of triggers, typically allergic and self-resolving within 24 hours. When such lesions last longer than 24 hours, biopsy should be performed to exclude urticarial vasculitis, which is characterized by a burning or painful sensation rather than pruritis, in addition to dermal neutrophilia and perivascular infiltrate on histology. Erythema migrans of Lyme disease begins at the site of a tick bite, evolving from a red macule to an expanding targetoid lesion and typically is not pruritic. Infectious cellulitis presents with warm, tender, and poorly defined erythematous patches; can progress rapidly; and is accompanied by systemic symptoms such as fevers, malaise, and lymphadenopathy.

Best evidence favors the use of moderate- to high-dose corticosteroids as first-line treatment.<sup>5</sup> The use of

tumor necrosis factor blockers, various immunomodulating agents, and combination therapy with levocetirizine and hydroxyzine have demonstrated variable levels of efficacy, albeit often followed by high rates of relapse with drug discontinuation.<sup>6</sup>

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