



Rash and fever in a 14-month-old girl

A careful examination of this toddler's rash and a thorough history led us to the correct diagnosis.

A 14-MONTH-OLD GIRL was brought to our medical center with a widespread pruritic eruption and fever that she'd had for 2 days. She had a temperature of 103.2° F, heart rate of 166 beats/min, respiratory rate of 32 breaths/min, and an oxygen saturation level of 100%.

On physical examination, the toddler was active, appeared well-nourished, and was not in acute distress. She had ill-defined, polycyclic, urticarial plaques with subtle, purpuric, dusky-appearing changes distributed widely over her face, trunk, and extremities (FIGURE 1A AND 1B). She had no signs of arthritis and did not exhibit an antalgic gait. She was otherwise healthy and had no per-

sonal or family history of connective tissue disease.

Lab results showed a slightly elevated erythrocyte sedimentation rate (ESR) (16 mm/hr) and mild thrombocytopenia (platelet count: 109,000/mcL). Complete blood count, comprehensive metabolic panel, and uric acid tests were unremarkable. Nine days earlier, the toddler had been diagnosed with otitis media and prescribed oral amoxicillin 50 mg/kg/d taken in 2 doses.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

FIGURE 1

Polycyclic plaques, some with subtle, dusky, purpuric centers, on child's back and leg

PHOTOS COURTESY OF: MED PHOTOS/ANTONIO MILITARY MEDICAL CENTER



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➤ **An urticaria multiforme eruption typically occurs one to 3 days after a viral infection or the administration of certain medications.**

Diagnosis: Urticaria multiforme

Based on the appearance of the plaques and the recent history of amoxicillin use, we diagnosed urticaria multiforme (UM) in this patient. UM is a benign, self-limited, cutaneous, histamine-dependent, hypersensitivity reaction that occurs predominantly among patients ages 4 months to 4 years.¹

In UM, the eruption typically occurs one to 3 days after a viral infection or the administration of certain medications.² A low-grade fever may or may not precede the eruption, and symptoms are usually limited to pruritus. Small urticarial papules and plaques initially appear and then coalesce to form blanching, erythematous, annular, polycyclic wheals.

Unlike “ordinary” acute urticaria, which is characterized by round or oval-shaped erythematous, edematous papules and plaques, UM plaques will have annular, gyrate, serpiginous, polycyclic, and/or target lesions with ecchymotic or dusky-appearing centers.^{1,3} Individual UM lesions typically last less than 24 hours, while the disease itself can persist for 2 to 12 days, until all lesions heal and the skin returns to normal.²

The diagnosis of UM is a clinical one. When a patient presents with urticarial lesions, ask about the timing of rash onset and the duration of individual lesions. Also ask whether the patient has had a fever, dermatographism, acral edema, or other symptoms, such as arthralgias and myalgias.²

Although a biopsy is typically not performed on this type of lesion, the histology will be the same as that seen in ordinary acute urticaria: dermal edema with some perivascular and interstitial infiltrates of eosinophils, neutrophils, and lymphocytes.³

Differential Dx includes serum sickness-like reaction, EM

Patients with serum sickness-like reaction (SSLR) will have a more severe clinical presentation than those with UM, characterized by a high-grade fever, lymphadenopathy, myalgia, and arthralgia.² Also, the time between viral infection/medication administration and onset of eruption is greater in SSLR: 7 to 21 days, as opposed to one to 3 days in UM.¹ In addition, the individual lesions of UM only

last about a day, whereas the plaques of SSLR can last from a few days to a few weeks.

■ **Patients with erythema multiforme (EM)** will complain of pain and burning, rather than itching.² Both mucosal surfaces and skin may be involved, with typical targetoid lesions often distributed acraly.² Overlying blistering or necrosis of the epidermis is commonly seen in EM, and like SSLR, the plaques are fixed, rather than transient. Although the plaques of UM, SSLR, and EM can all contain a dusky center, the lesions of SSLR and EM usually resolve with postinflammatory hyperpigmentation, which is typically not seen in UM.^{1,2}

Stop the offending drug, start an antihistamine

Treatment for UM involves discontinuing the offending medication and inhibiting the effects of histamine release. The combination of second-generation antihistamines (eg, cetirizine, fexofenadine, or loratadine) every morning and first-generation antihistamines (eg, diphenhydramine) at night for pruritus is the mainstay of treatment.^{1,2} Acetaminophen can be used for mild fever; however, aspirin and nonsteroidal anti-inflammatory drugs should be avoided because these medications may worsen the urticarial eruption.⁴

■ **Our patient** had already finished her course of amoxicillin when she first presented with the rash, so we prescribed an oral antihistamine—cetirizine 5 mg BID. Six days after rash onset, when mother and child returned for follow-up, the patient’s lesions had completely resolved. There was no residual postinflammatory hyperpigmentation, which confirmed the diagnosis of UM.

We advised the mother that her daughter was allergic to amoxicillin and told her to avoid it in the future. **JFP**

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References

1. Mathur AN, Mathes TF. Urticaria mimickers in children. *Dermatol Ther.* 2013;26:467-475.
2. Emer JJ, Bernardo SG, Kovalerchik O, et al. Urticaria multiforme. *J Clin Aesthet Dermatol.* 2013;6:34-39.

3. Peroni A, Colato C, Schena D, et al. Urticarial lesions: if not urticaria, what else? The differential diagnosis of urticaria: part I. Cutaneous diseases. *J Am Acad Dermatol.* 2010;62:541-555.

4. Sánchez-Borges M, Caballero-Fonseca F, Capriles-Hulett A, et al. Aspirin-exacerbated cutaneous disease (AECD) is a distinct subphenotype of chronic spontaneous urticaria. *J Eur Acad Dermatol Venereol.* 2015;29:698-701.