Denouement and Discussion

Mycoplasma pneumoniae *Pneumonia With Associated Urticaria Multiforme Rash*

Figure 1 and Figure 2 depict the classic lesions of urticaria multiforme. Urticaria multiforme, a form of acute annular urticaria, is an allergic hypersensitivity reaction mediated by histamine that may be IgE dependent or independent.[1] The lesions are annular and polycyclic. They blanch with pressure and may display a central purplish or dusky hue. Because of similarities in the appearance of the rash, urticaria multiforme is often misdiagnosed as erythema multiforme and, less commonly, as serum sickness.

The term *urticaria multiforme* was proposed[1] to describe this form of annular urticaria[2,3] to emphasize the clinical manifestations that differentiate it from erythema multiforme. The lesions of urticaria multiforme may have dusky skin changes in central areas of polycyclic lesions, but these changes disappear without leaving the "bruising" that is commonly seen with erythema multiforme. True necrosis or blistering of the skin is never seen with urticaria multiforme and there is no associated mucous membrane involvement. Also, the lesions of urticaria multiforme are evanescent, with individual lesions lasting less than 24 hours, which further distinguishes it from the fixed lesions of erythema multiforme. The presence of dermatographism can also help to support the diagnosis of urticaria multiforme. Because urticaria multiforme is commonly associated with facial or acral edema it may also be confused with serum sickness–like reactions.[1,3,4] Although swelling of the feet may make walking painful and difficult, true arthralgias or arthritis are not associated with urticaria multiforme. Importantly, the angioedema present in urticaria multiforme has not been associated with laryngoedema and has not been reported to be associated with food allergy.[1,5] Suggested treatment for urticaria multiforme involves complete histamine receptor blockage. Long-duration H_1 blockers (such as cetirizine hydrochloride) should be given in association with H_2 blockers (such as ranitidine) with breakthrough relief as needed by diphenhydramine or hydroxyzine hydrochloride. Most patients have symptom relief with this combination within a few days to 2 weeks.[1] Steroids should be reserved for patients who remain severely symptomatic despite antihistamine therapy. Treatment is largely symptomatic, as episodes of urticaria multiforme are self-resolving within 8 to 10 days.

Urticaria among children is more commonly associated with infectious rather than allergic etiologies.[3,4] As a subset of urticarial eruptions, urticaria multiforme is also commonly associated with infection. In 1 retrospective study, 17% of patients with urticaria multiforme had laboratory-confirmed infection, including 1 patient with *Mycoplasma pneumoniae* pneumonia.[1]

The patient presented herein had clinical and radiographic findings consistent with pneumonia. His chest radiograph revealed a patchy opacity at the left lung base (Figure 3). Nasopharyngeal aspirate testing by polymerase chain reaction (PCR) confirmed the diagnosis of *M pneumoniae*. *M pneumoniae* has also been associated with extrapulmonary complications, including myocarditis, pericarditis, encephalitis, aseptic meningitis, transverse myelitis, Guillain-Barre syndrome, hemolytic anemia, myalgias, and rash.[6] *M pneumoniae* is the main cause of erythematous rash in the setting of pneumonia and is associated with both erythema multiforme and Stevens-Johnson syndrome.[6-8] However, *M pneumoniae* is also associated with urticaria, as seen in the patient presented herein.[1,6]

Testing for *M pneumoniae* has recently shifted to PCR techniques; however, some authors suggest that serologic studies should be performed in conjunction with PCR testing to increase the overall sensitivity of disease detection.[9,10] Treatment for *M pneumoniae* includes tetracyclines, macrolides, or fluoroquinolones.[8]

The patient presented herein was treated with cetirizine and ranitidine with additional diphenhydramine as needed for his urticaria as well as azithromycin for *M pneumoniae* pneumonia. The symptoms began to resolve at the time of discharge 2 days later.

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