

Rapidly Progressive Rash Involving the Mucosa: A Case Report

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Case Presentation

An 11-year-old healthy female presented with ten days of fever, cough, congestion, and rash. The patient was evaluated at urgent care 3 days prior where she had a negative strep test but was sent home on a course of amoxicillin and prednisone. Upon initiating this treatment, daily fevers subsided, but the patient developed a rash with targetoid lesions on the palms and soles. Over the following two days, rash spread diffusely across the extremities, trunk, mouth, eyes, and genitalia. Oral lesions were so severe they prevented speaking and eating. Upon arrival in the ED, she was afebrile, tachycardic, and ill appearing. Examination revealed erythematous targetoid lesions over the entire body with significant erythema, edema, and sloughing of the lips and oral mucosa. Ocular exam revealed edema and erythema of the eye lids with serous discharge bilaterally. CBC and CRP were unremarkable. ESR was mildly elevated. Respiratory viral PCR, mononucleosis screen, and herpes simplex virus swabs of the lesions were negative. Chest X-ray showed findings consistent with atypical pneumonia. Patient was admitted on intravenous vancomycin, ceftriaxone, and azithromycin. She was additionally started on NG nutrition. Testing for serum *M. pneumoniae* antibody was obtained, and Dermatology was consulted. Dermatology recommended solumedrol and a punch biopsy of the rash. Over the following days, antibiotics were de-escalated to oral azithromycin and topical bacitracin. Symptoms began improving on day 3 of admission. Direct immunofluorescence of the skin biopsies showed perivascular and interstitial lymphohistiocytic infiltrate with rare eosinophils. *M. pneumoniae* Antibody IgM returned positive. Patient completed azithromycin course and was discharged home with a diagnosis of *Mycoplasma pneumoniae* Induced Rash and Mucositis (MIRM).

Discussion

MIRM is an extrapulmonary presentation due to *Mycoplasma pneumoniae* (*M. pneumoniae*). In 2014, MIRM was distinguished from other skin reactions such as Stevens-Johnson Syndrome, Erythema Multiforme, and Toxic Epidermal Necrolysis. MIRM classically presents in male patients as vesiculobullous and targetoid lesions that erupt approximately one week after symptoms of fever, malaise, and cough. *M. pneumoniae* causes ~20% of cases of community-acquired pneumonia in children. Most children have benign courses; others may have severe manifestations. Extra-pulmonary involvement is seen in up to 25% of patients. The pathophysiology of MIRM is not well understood. Diagnosis of *M. pneumoniae* may be a challenge and is commonly mistaken for a viral respiratory infection. In the inpatient setting, PCR testing is currently the gold-standard for diagnosis, but it is costly and inconvenient in the outpatient setting. The development and implication of point-of-care testing that is accurate, reliable, and inexpensive could be a potential way to diagnose and initiate treatment earlier in the disease course possibly preventing further complication.