**CASE REPORT**

**Mycoplasma pneumoniae-associated angioedema**

Patrick M. Meyer Sauteur, MD, PhD,a Martin Theiler, MD,b and Bettina Bogatu, MDc

Zurich, Switzerland

**Key words:** allergy; anaphylaxis; drug-induced; Mycoplasma pneumoniae-induced rash and mucositis (MIRM); urticarial.

**INTRODUCTION**

Angioedema (AE) is a self-limiting and benign condition, but may present as a medical emergency due to upper airway obstruction.1 Different pathological processes involving proinflammatory mediators cause several distinct subtypes of AE.2 To our knowledge, we here report the first case of Mycoplasma pneumoniae-associated AE in a child. Recognition of this clinical entity prevents extensive diagnostic testing and avoids restriction of possibly causative drugs.

**CASE REPORT**

A previously healthy 5-year-old boy presented with a cough and fever since 1 week. On clinical examination, he was tachypneic and had crackles on the right hemithorax. Laboratory investigations revealed hemolytic anemia (10.9 g/dL; range, 11.5-14.0), normal white blood cell count (6.8 × 10⁹/L) without eosinophilia, and an elevated C-reactive protein level (22.0 mg/L; normal level <10.0). A chest radiograph showed bilateral interstitial infiltrates with small pleural effusions on both sides. *M pneumoniae* was detected by polymerase chain reaction of pharyngeal swab samples and strongly positive *M pneumoniae*-specific IgM ([>150 U/mL; cutoff, 17 U/mL] and IgG (89 U/mL; cutoff, 15 U/mL) (Virion/Serion) serum antibody levels. A diagnosis of *M pneumoniae* community-acquired pneumonia (CAP) was made. He was started on oral clarithromycin with 15 mg/kg/day in 2 doses.

Following the administration of the third dose in the evening, he awoke in the morning with massive angioedematous swelling of the lower lip (Fig 1). He did not complain about dyspnea or pruritus, and did not show any accompanying tongue swelling. Erosions or involvement of other mucosal surfaces were absent, as were skin lesions such as wheals or target-like papules and plaques. No other drugs apart from clarithromycin were administered. He received a single dose of oral levocetirizine and...
Betamethasone for the differential diagnosis of histamine-mediated AE. The swelling resolved slowly within a day. A diagnosis of AE was made. Pneumonia was infection was further confirmed with the detection of specific IgM antibody-secreting cells by enzyme-linked immunospot (ELISpot) assay. Other infectious triggers, ie, herpes simplex virus, hepatitis B virus, Epstein-Barr virus, cytomegalovirus, and parvovirus B19 were excluded by serology.

There was no recurrence following restart of clarithromycin for a total of 7 days or after drug challenge with clarithromycin (to exclude drug-induced AE) at a 6-week follow-up. At this time point, he had fully recovered from infection in this case together with the suggestion of a cold agglutinin-related disease. The hemolytic anemia in our patient with infection was further investigated for a variety of dermatological manifestations. This report adds M pneumoniae to reactive infectious causes leading to parainfectious (secondary) AE.

Conflicts of interest
None disclosed.

REFERENCES
1. Pier J, Bingemann TA. Urticaria, angioedema, and anaphylaxis. Pediatr Rev. 2020;41(6):283-292.
2. Pattanaik D, Lieberman JA. Pediatric angioedema. Curr Allergy Asthma Rep. 2017;17(9):60.
3. Jaiganesh T, Wiese M, Hollingsworth J, et al. Acute angioedema: recognition and management in the emergency department. Eur J Emerg Med. 2013;20(1):10-17.
4. Meyer Sauteur PM, Seiler M, Trück J, et al. Diagnosis of Mycoplasma pneumoniae pneumonia with measurement of specific antibody-secreting cells. Am J Respir Crit Care Med. 2019;200(8):1066-1069.
5. Meyer Sauteur PM, Trück J, van Rossum AMC, Berger C. Circulating antibody-secreting cell response during Mycoplasma pneumoniae childhood pneumonia. J Infect Dis. 2020;221(1):136-147.
6. Schalock PC, Dinulos JGH. Mycoplasma pneumoniae-induced cutaneous disease. Int J Dermatol. 2009;48(7):673-680.
7. Meyer Sauteur PM, Theiler M, Buettcher M, Seiler M, Weibel L, Berger C. Frequency and clinical presentation of mucocutaneous disease due to Mycoplasma pneumoniae infection in children with community-acquired pneumonia. JAMA Dermatol. 2020;156(2):144-150.
8. Canavan TN, Mathes EF, Frieden I, Shinkai K. Mycoplasma pneumoniae-induced rash and mucositis as a syndrome distinct from Stevens-Johnson syndrome and erythema multiforme: a systematic review. J Am Acad Dermatol. 2015;72(2):239-245.
9. Stockner I, Thaler J, Fichtel G, Egarter-Vigl E, Wallnöfer W, Wiedermann CJ. Non-episodic angioedema associated with eosinophilia following Mycoplasma pneumoniae infection. Clin Rheumatol. 2008;27(12):1573-1576.