

Mycoplasma pneumoniae-associated subconjunctival hemorrhage

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CASE REPORT

A 6-year-old boy presented with productive cough, vomiting, and fever for three days. There was no coagulopathy and no history of trauma. Physical examination revealed crackling sounds over the right lung, cutaneous rash over the periorbital region, and noticeable subconjunctival hemorrhage of the right eye (Figure 1). Both the adenovirus antigen test and influenza A/B antibody tests from nasopharyngeal aspirate were negative. Chest X-ray demonstrated infiltration over the right lung. Laboratory examination revealed white blood cells (3620/ μ L), hemoglobin (12.5 g/dL), C-reactive protein (0.53 mg/dL), and impaired hepatic function (aspartate aminotransferase: 67.6 U/L, alanine aminotransferase: 48.2 U/L). The serum immunoglobulin M antibody test for *Mycoplasma pneumoniae* was positive. The diagnosis of *M. pneumoniae* was made. After



Figure 1: Cutaneous rash over the periorbital region and noticeable subconjunctival hemorrhage of the right eye.

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Received: 28 January 2021

Accepted: 08 June 2021

Published: 14 July 2021

oral azithromycin treatment for three days, his general condition improved, and subconjunctival hemorrhage subsided after one week of follow-up.

DISCUSSION

Mycoplasma pneumoniae, a common cause of respiratory tract infection, can lead to associated extrapulmonary manifestations. Skin presentations such as erythema multiforme major have been reported to occur in approximately 25% of children [1]. The clinical characteristics of *Mycoplasma*-induced rash and mucositis are oral, ocular, and urogenital mucositis with variable severity, especially in young males. The

pathophysiology may be responsible for (1) polyclonal B-cell proliferation and antibody production resulting in skin damage stemming from immune complex deposition and complement activation or (2) molecular mimicry between *Mycoplasma* P1-adhesion molecules and a keratinocyte antigen [2, 3]. Stevens-Johnson syndrome (SJS) and erythema multiforme are immune-mediated disorders characterized by prodromal illness followed by serious mucocutaneous symptoms. They are usually characterized by extensive mucositis and ocular disease. In a previous retrospective case-control study, children with *M. pneumoniae*-associated SJS were significantly more likely to have more respiratory symptoms, radiographic pneumoniae, and an elevated erythrocyte sedimentation rate (ESR) than children with non-*Mycoplasma*-associated SJS [4].

The common causes of subconjunctive hemorrhage include hypertension, arteriosclerosis, diabetes mellitus, trauma, acute hemorrhagic conjunctivitis, anticoagulant therapy, conjunctivochalasis, and wearing contact lenses. However, subconjunctive hemorrhage may be a rare complication of *M. pneumoniae* infection. These manifestations may be closely related to inflammation, infection, and tissue damage caused by *M. pneumoniae*. Other ocular manifestations, including anterior uveitis, optic papillitis, and amaurosis, have been reported to be associated with *M. pneumoniae* infection [5, 6]. However, our patient did not have evidence of inflammatory or infectious conjunctivitis, and his subconjunctival hemorrhage could not be explained by direct infection of the conjunctiva. The possible etiology in this boy is prolonged, vigorous coughing or vomiting, which may increase venous pressure and congestion and induce hemorrhage in the orbit, anterior chamber, or subconjunctive space. It is usually benign and resolves spontaneously [1]. In particular, cough may be the most common symptom of *M. pneumoniae* infection. Therefore, controlling a prolonged cough with antitussive medicine may decrease the possibility of subconjunctival hemorrhage. The condition is usually benign and subsides spontaneously; it usually resolves within 5–10 days [7]. In addition, *M. pneumoniae* usually affects infants and young children, and the symptoms are similar to infections with other respiratory viruses. In future epidemics, assessment of extrapulmonary manifestations may be helpful when diagnosing *M. pneumoniae* infections [7].

CONCLUSION

In summary, this case report presented subconjunctival hemorrhage in a 6-year-old boy with *M. pneumoniae*. Clinical physicians should be aware that respiratory symptoms such as severe coughing and vomiting or the Valsalva manoeuvre can cause subconjunctival hemorrhage in infants and children with respiratory tract infections.

Keywords: *Mycoplasma pneumoniae*, Subconjunctival hemorrhage

How to cite this article

Hsu KY, Kuo CC, Liao MT, Hsiao PJ. *Mycoplasma pneumoniae*-associated subconjunctival hemorrhage. Int J Case Rep Images 2021;12:101239Z01KH2021.

Article ID: 101239Z01KH2021

doi: 10.5348/101239Z01KH2021CI

REFERENCES

1. Mimura T, Noma H, Yamagami S. Letter to the Editor: Bilateral subconjunctival hemorrhage in a 3-year-old girl with mycoplasma pneumonia. Open Ophthalmol J 2017;11:322–5.
2. 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):239–45.
3. Alcántara-Reifs CM, García-Nieto AV. *Mycoplasma pneumoniae*-associated mucositis. CMAJ 2016;188(10):753.
4. Olson D, Watkins LKF, Demirjian A, et al. Outbreak of mycoplasma pneumoniae-associated Stevens-Johnson syndrome. Pediatrics 2015;136(2):e386–94.
5. Li HO, Colantonio S, Ramien ML. Treatment of mycoplasma pneumoniae-induced Rash and Mucositis with cyclosporine [Formula: See text]. J Cutan Med Surg 2019;23(6):608–12.
6. Jin HD, Siatkowski RM, Siatkowski RL. Ocular manifestations of mycoplasma-induced rash and mucositis. J AAPOS 2020;24(4):249–51.
7. Søndergaard MJ, Friis MB, Hansen DS, Jørgensen IM. Clinical manifestations in infants and children with *Mycoplasma pneumoniae* infection. PLoS One 2018;13(4):e0195288.

Author Contributions

Kuo-Yuan Hsu – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Chih-Chun Kuo – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Min-Tser Liao – Conception of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

The grant from Taoyuan Armed Forces General Hospital, Taoyuan City, Taiwan

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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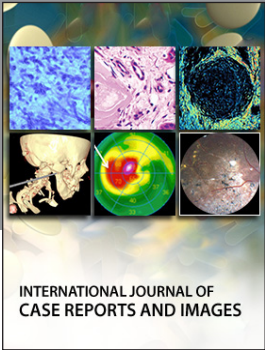
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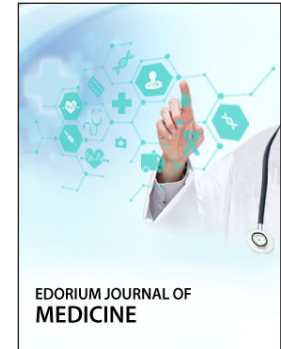


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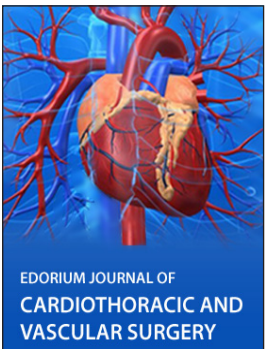


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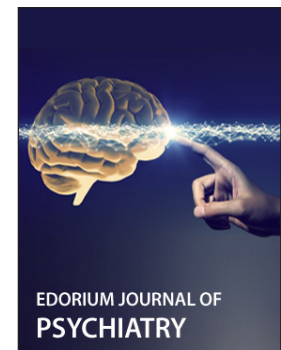
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