

## Mycoplasma Pneumonia-Induced Rash and Mucositis

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**Mycoplasma pneumonia-induced rash and mucositis (MIRM) has been recognized recently as a milder form of Stevens-Johnson syndrome (SJS). It involves mainly the mucous membranes, and the skin is less affected. The SJS is a serious disease, which carries a significant mortality risk. However, the prognosis for the MIRM variant is good.**

**A five-year-old child who had a mild form of Stevens-Johnson syndrome had a positive serology test for mycoplasma pneumoniae is presented. The child was managed with intravenous hydration and did not receive antibiotics. His clinical condition improved and his lips appeared less swollen and less hemorrhagic. He was discharged after seven days in good medical condition.**

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Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are two forms of severe mucocutaneous immune reactions<sup>1,2</sup>. Both are characterized by mucositis involving the mouth, the eyes or the genital mucosa and both involve skin detachment. SJS involves less than 10% of the skin while more than 30% of the skin is involved in TEN<sup>3-6</sup>. Mycoplasma induced rash and mucositis has been recently recognized and reported during the last few years. The majority of the reports have described a milder form of Stevens - Johnson syndrome, which was associated with mycoplasma infection where the skin is mostly spared<sup>1-11</sup>. A case with a similar mild degree of SJS is presented.

The aim of this report is to highlight the newly recognized disease variant of SJS, which is associated with mycoplasma pneumonia infection.

### THE CASE

A five-year-old Bahraini patient presented with a ten-day history of painful swollen and bleeding lips. The child had no other symptoms except for slight facial rash and bilateral cheek swelling at the beginning of the illness, which resolved in two days. The patient had no other rashes and no eye redness. He was afebrile and had no preceding illness. He did not receive any medication prior to or during the illness.

On physical examination, the patient was not toxic but was dehydrated. His vital signs were normal. The lips were swollen, hemorrhagic with erosion, sloughing and crusting, see figure 1. He had no skin lesions or rashes, and the eyes were normal. The total white blood cell count was normal at  $5.7 \times 10^9/L$ , with 37% polymorphonucleocytes, 48% lymphocytes, 10% monocytes and 4% eosinophils. The C-reactive protein was 7.4 mg/L (normal 0-3). The urea was 4.2 mmol/L (normal 3.2-8.2). The random blood glucose was 100 mg/dl, and the bicarbonate was 20 mmol/L. The liver function test was normal.



**Figure 1: The Five-Year-Old Patient with Severe Hemorrhagic Lips Erosion and Crusting**

Herpes simplex IgM was negative, while the herpes simplex IgG was positive. The mycoplasma antibodies were tested by enzyme immunoassay (EIA). The mycoplasma IgG antibodies (EIA) were negative, and the initial mycoplasma IgM antibodies (EIA) were negative and seroconverted to positive after three days. The seroconversion supported the diagnosis of mycoplasma pneumonia induced rash and mucositis. During hospitalization, he received intravenous hydration and did not receive antibiotics. His clinical condition improved and his lips appeared less swollen and less hemorrhagic. He was discharged after seven days in good medical condition.

### DISCUSSION

Mycoplasma pneumonia was first described in the 1940's and since then has been recognized as the most common cause of atypical community-acquired pneumonia ACAP in children<sup>1,4,6,11</sup>. Nevertheless, mycoplasma pneumonia causes

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a spectrum of human diseases, such as upper respiratory tract infections, lower respiratory tract infections, asthma exacerbation, hemolytic anemia, encephalitis and immune mediated reactions such as Stevens-Johnson syndrome<sup>6-8,11</sup>. The mycoplasma pneumoniae organism is less than 5% of the size of a Bacillus bacterium; because of its small size, it is difficult to culture this organism in regular clinical settings and laboratories<sup>9-11</sup>. The polymerase chain reaction (PCR) and culture have significant limitations on its clinical utilization in the diagnosis of mycoplasma pneumoniae since the organism remains viable in humans for a long time even after treatment. Therefore, a positive test does not necessarily indicate a recent infection<sup>11</sup>. The serologic tests, complement fixation (CF) and enzyme immunoassay (EIA) are adopted in most medical facilities for the diagnosis of mycoplasma pneumoniae<sup>12</sup>.

SJS is an immune-mediated disease that manifests as mucocutaneous eruption and is associated with significant morbidity and mortality<sup>4,5,8</sup>. It could be due a drug reaction or secondary to viral infections<sup>2,5,6</sup>. In children, Mycoplasma pneumoniae is a common offending cause of SJS<sup>1,2,4,6</sup>. Recently, MIRM has been recognized as a distinct entity; the disease mainly manifests as mucositis and less commonly of skin involvement, and the course of the disease is benign compared to SJS<sup>4-6</sup>. Canavan et al have reviewed 202 cases of mycoplasma pneumoniae-induced mucocutaneous disease in the literature and found that the mean age was 11 years, and males were predominantly affected<sup>4</sup>. The majority of patients had no/or sparse skin manifestations, 34% and 47% respectively. The mortality rate was 3% and the rate of recurrence was 8%. Olsen et al reported an outbreak of mycoplasma associated SJS in November of 2013 in Colorado during mycoplasma infection epidemic<sup>6</sup>. Their findings support the previous observation by Canavan et al that mycoplasma pneumoniae infection associated SJS presents with severe mucositis with minor skin disease.

Prindaville et al performed a retrospective review of six patients who had been diagnosed with both mycoplasma pneumoniae infection and SJS during a ten-year period<sup>10</sup>. The children had mainly mucositis with less significant skin involvement, and their short-term outcome was good.

There is limited knowledge on the best treatment approach to mycoplasma pneumoniae-induced rash and mucositis. Some methods of treatments have included immune globulins IVIG; others have used corticosteroids, macrolides and others were treated conservatively<sup>4,6,8,10,11</sup>. Our patient was treated conservatively and had a good recovery without complications.

## CONCLUSION

**Mycoplasma pneumoniae-induced rash and mucositis MIRM is a newly recognized variant of Stevens-Johnson syndrome, where the disease is mainly affects the mucosal membrane and spare the skin. The disease appears to be a milder form of SJS and is associated with mycoplasma pneumoniae infection. There is not enough knowledge on the best management approach for such patients and whether treatment with macrolides would prevent the disease or hasten the resolution of the symptoms. Further research is required to provide better solutions in the future.**

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**Competing Interest:** None.

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