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Case Report

Mycoplasma Pneumoniae Associated Reactive Infectious Mucocutaneous Eruption in a child

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Abstract

Reactive infectious mucocutaneous eruption (RIME) is a mucocutaneous reaction following respiratory infections in children, with diverse skin lesion causes that may lead to misdiagnosis. Although diagnosis is primarily clinical, similar presentations in young children create challenges, particularly for general paediatricians in developing countries, where limited access to skin biopsy adds further difficulty. While Mycoplasma pneumoniae is a common cause, it is rare in children under five, with skin involvement being even less frequent. We report a successfully treated case of RIME due to Mycoplasma pneumoniae, highlighting the importance of accurate diagnosis and appropriate management in such rare cases.

Introduction

Reactive infectious mucocutaneous eruption (RIME) is a mucocutaneous adverse reaction following respiratory infections in children. Mycoplasma pneumoniae is the most common cause, though Chlamydia pneumoniae, influenza virus, and others have been reported.[1] It primarily affects male children, with a mean age of 12 years.[2] It presents with mucocutaneous eruptions, preceded by prodromal symptoms like cough, fever, and malaise approximately one week before rash onset. Differentiating RIME from Stevens-Johnson syndrome (SJS) is crucial, as SJS is a severe drug-induced reaction. RIME has a better prognosis than SJS, with most cases fully recovering and minimal mortality.[2] Treatment includes skin and mucosal care, supportive therapy, empiric antibiotics, corticosteroids, or intravenous imunoglobulin, with varying recommendation.[3] We report a case successfully treated with oral antibiotics and systemic corticosteroids.

Case report

A four years old male toddler was hospitalized in rural Vietnam with persistent high fever, cough and ulcer like skin lesions. Despite ointment and potassium permanganate treatment, his condition did not improve. Hence, the baby was referred to our centre. On examination, he had crusted, ulcer-like lesions on his lips and mouth, oozing yellow fluid, causing pain and itching (Figure 1). An intensely itchy rash on his limbs progressed into ruptured blisters with crusts (Figure 2). A 2 × 2 cm non-tender, mobile left cervical lymph node was palpable. His eyes were red bilaterally without secretions (Figure 3), and he had dried abrasions on his arms, legs, and buttocks. He presented with a 39°C fever, fatigue, and poor appetite. His height and weight were 105 cm and 16 kg, with no other organ abnormalities. He had no significant past history. However, he had a mild, intermittent dry cough for two weeks before the onset of mouth ulcers.

Figure 1: Mouth ulcers have crusted over and are still oozing yellow fluid

Figure 2: Blisters on his hand burst and formed crusts

Figure 3: Bilateral conjunctivitis, without exudation.

The child was diagnosed with reactive infectious mucocutaneous eruption, likely caused by Mycoplasma pneumoniae. Blood tests showed normal white blood cell count (7620 G / L) but elevated CRP (40.1 mg / L), with positive Mycoplasma pneumoniae IgM. A chest X-ray revealed interstitial infiltrates and bronchitis, while liver and renal function tests were unremarkable. He was treated with azithromycin (10 mg / kg orally once daily for five days) and prednisolone (1 mg / kg / day for seven days), along with wound care. His fever subsided, and lesions gradually healed. After seven days, he was discharged with three more days of prednisolone. A follow-up Mycoplasma pneumoniae IgM test two weeks later showed a 4.2-fold antibody increase (76.2 to 320 U/mL), confirming infection.

Discussion

RIME is an acute mucosal reaction associated with infectious etiologies, characterized by prominent mucositis with little cutaneous involvement. Previously referred to as Mycoplasma pneumoniae-induced rash and mucositis (MIRM), the terminology evolved as additional pathogens, including Chlamydia pneumoniae, influenza virus, and SARS-CoV-2, were identified.[1] RIME mainly affects children and adolescents, manifesting as severe oral, ocular, and genital mucositis. In patients presenting with mucosal involvement and rash in the context of acute illness, particularly with respiratory symptoms, Mycoplasma pneumoniae should be prioritized as a differential diagnosis before attributing the reaction to medications. Mycoplasma pneumoniae is a frequent etiology of respiratory infections, with one study reporting that 42.3% of children hospitalized for the first time with asthma exhibited concurrent infection.[4] Early recognition facilitates appropriate management and reduces the risk of misdiagnosis with severe drug-induced reactions such as SJS or TEN.[5]

The diagnosis of RIME relies on characteristic clinical features, a history of respiratory infections, and microbiological evidence of Mycoplasma pneumoniae.[2,3] The diagnosis of Mycoplasma pneumoniae associated RIME requires meeting specific criteria: 1) mucocutaneous eruption affecting less than 10% of body surface area; 2) mucosal involvement in two or more sites; 3) presence of a sparse vesiculobullous, targetoid or erythematous skin eruption; and 4) clinical and laboratory evidence of atypical pneumonia. Clinical criteria include prodromal symptoms like cough, fever, and malaise or abnormal auscultation, while laboratory confirmation involves positive serology, polymerase chain reaction testing, or throat culture for Mycoplasma pneumoniae.[2]

There are no specific guidelines for RIME treatment. Systematic reviews show that most cases are managed with antibiotics, systemic corticosteroids and/or intravenous immune globulin (IVIG). Antibiotics and systemic corticosteroids are commonly used, while IVIG is reserved for select cases. Supportive care, including pain relief and mucosal moisturization, is essential.[2] Antibiotics target the agent Mycoplasma pneumonia, while systemic corticosteroids help reduce inflammation and pain in extensive mucosal involvement. Although evidence is limited,

short-term use of systemic corticosteroids (e.g., prednisone 1 mg / kg / day without taper) is recommended for patients with extensive mucosal involvement and especially severe symptoms like high fever, pain, or feeding difficulties.[3,6]

Our patient had multi-site mucosal lesions, including vesicular lesions on the lips and mouth, bilateral conjunctivitis, red rashes on the skin, and lesions occupying < 10% of the skin surface area. This presentation is consistent with RIME diagnostic criteria. Our patient's history of a recent upper respiratory infection, along with a positive IgM result for Mycoplasma pneumoniae, suggested that an infectious agent may have triggered the mucositis.[1] There is no evidence of drug use prior to the onset of symptoms, which helps to rule out SJS / TEN. It is worth noting that our patient experienced severe conjunctivitis, but did not suffer any permanent damage to the cornea. This is an important distinction between RIME and SJS / TEN, as the latter carries a higher risk of corneal scarring.[1,7,8]

In terms of treatment, our regimen adhered to the majority of current guidelines, which included supportive care, pain management, antibiotics, and systemic corticosteroids. Comprehensive care is provided including general pain relief, adequate hydration and mucosal care. Azithromycin is used in therapeutic doses for atypical pneumonia for a period of five days. Systemic corticosteroids are used at low doses without dose reduction for 10 days. IVIG was not used in our patient.

Conclusions

This case report highlights the importance of recognizing and diagnosing RIME, a skin condition that is often overlooked, leading to inappropriate treatment. Timely diagnosis and appropriate management of such cases enable rapid recovery, early hospital discharge, and reduced complications in children.

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