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MAJOR ERYTHEMA MULTIFORME ASSOCIATED WITH MYCOPLASMA PNEUMONIAE IN CHILDREN: A REPORT OF THREE CASES

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ABSTRACT

Introduction: Major erythema multiforme (EMM) is a rare acute dermatosis in children. *Mycoplasma pneumoniae* (MP) is a recognized infectious etiology, associated with potentially severe cutaneous and mucosal manifestations. **Objective:** To describe three pediatric clinical cases of EMM associated with MP infection. **Methods:** Descriptive study of three children hospitalized for EMM with serological confirmation of MP infection. **Results:** All three patients presented with target lesions, variable mucosal involvement, and a respiratory context. MP serology was positive in all cases. Clinical outcomes were favorable in two patients; one patient experienced two recurrences. **Conclusion:** MP-associated EMM requires early recognition. Management relies on a multidisciplinary approach, with careful attention to differential diagnoses and potential viral co-infections.

KEYWORDS: Major erythema multiforme, *Mycoplasma pneumoniae*, Child, Viral co-infection.

INTRODUCTION

Major erythema multiforme (EMM) is a rare but potentially severe acute dermatosis in pediatrics, accounting for less than 1% of all acute skin disorders in children.[1,2] Clinically, it is characterized by the sudden onset of target-like skin lesions accompanied by multifocal mucosal involvement, primarily oral, ocular, and, more rarely, genital.[3] While drug-related causes predominate in adults, respiratory infections—particularly *Mycoplasma pneumoniae*—are the most frequent etiologies in children.[1,4] *M. pneumoniae* exhibits a primary respiratory tropism but can induce severe extrapulmonary manifestations through immune-mediated mechanisms. Viral co-infections, particularly with herpes simplex virus (HSV) or cytomegalovirus (CMV), may further exacerbate the clinical picture.[4,5] We report three pediatric cases of MP-induced EMM, highlighting the spectrum of clinical manifestations, diagnostic strategies, and therapeutic considerations.

MATERIALS AND METHODS

We conducted a descriptive study of three pediatric patients hospitalized for major erythema multiforme with serological evidence of *Mycoplasma pneumoniae* infection. Clinical, paraclinical, therapeutic, and outcome data were retrospectively collected.

CASE PRESENTATION

Case 1

We report the case of a 9-year-old boy with no significant medical history and no known drug allergies, admitted for a generalized erythematous macular rash with target-like lesions, predominantly involving the face, trunk, and limbs. The skin eruption had appeared ten days prior to admission, in a context of fever and general deterioration. Clinical examination revealed bilateral bacterial conjunctivitis without keratitis, erosive and crusted cheilitis, and severe gingivostomatitis, with no evidence of genital involvement. Respiratory examination showed a persistent cough, and chest radiography revealed bilateral interstitial infiltrates. There was no evidence of lymphadenopathy, hepatosplenomegaly, or gastrointestinal symptoms. Nikolsky's sign was negative.

Case 2

A 9-year-old boy with no significant past medical history or known drug allergies was hospitalized for a generalized erythematous macular rash with typical target lesions, associated with pruritus. The eruption involved the face, trunk, and limbs, and developed in a context of acute fever and general malaise. Clinical examination revealed bilateral bacterial conjunctivitis, erosive, smoking and crusted cheilitis, and severe gingivostomatitis. Respiratory findings included a cough without dyspnea, and chest X-ray showed bilateral

interstitial infiltrates. No gastrointestinal symptoms or lymphoproliferative signs were reported.

Case 3

A 13-year-old boy with no relevant medical history and no known drug allergies was admitted for symptoms evolving over a ten-day period. The clinical history began with left-sided basithoracic pain, followed by odynophagia in a febrile context, and subsequently the appearance of highly pruritic target-like skin lesions, some of which were bullous and diffusely distributed over the skin. Clinical examination showed a negative Nikolsky's sign. Mucosal involvement was multifocal, including conjunctival hyperemia without conjunctivitis or pseudomembranes, severe gingivostomatitis, and genital lesions (crusted erosions on the penis, with sparing of the anal margin). Chest X-ray revealed left basithoracic pleuropneumonia, without signs of respiratory distress. No gastrointestinal symptoms were reported.

Complementary investigations

In Cases 1 and 3, laboratory findings revealed a marked inflammatory syndrome associated with moderate bicytopenia (anemia and lymphopenia). Serological testing was positive for *Mycoplasma pneumoniae* (IgM^+) and *Herpes simplex virus* (IgM^+), suggesting a co-infection. In Case 2, biological evaluation revealed a significant inflammatory response. *Mycoplasma pneumoniae* serology was positive, while all other infectious serologies were negative.

The average delay between the onset of fever and the appearance of skin lesions was estimated between 3 and 7 days. All three patients had self-medicated with paracetamol prior to admission, with no use of nonsteroidal anti-inflammatory drugs (NSAIDs). In addition, the first patient had received amoxicillin-clavulanic acid.

Lymphocyte subset analysis, serum immunoglobulin quantification, and other infectious serologies (EBV, CMV, HIV, parvovirus B19) were negative in Cases 1 and 3, ruling out underlying immunodeficiency or other active viral infections.

Ophthalmologic examination confirmed bacterial conjunctivitis in all three patients.

Treatment and Clinical Course

Initial management included parenteral rehydration and nutritional support, along with antibiotic therapy combining a macrolide and a fluoroquinolone. Intravenous antiviral treatment with Cicloviral at meningeal dosing was administered, along with systemic corticosteroid therapy. Supportive care included ocular and oral hygiene, administration of antihistamines, and analgesics.

Clinical outcomes were favorable with no recurrence in Cases 2 and 3. In contrast, Case 1 experienced two recurrences within a one-year interval, each presenting with identical clinical features. During the third hospitalization, allergologic testing revealed a delayed hypersensitivity reaction to amoxicillin-clavulanic acid, while viral serologies remained negative. The average length of hospital stay was 10 days.

DISCUSSION

Mycoplasma pneumoniae epidemics typically occur every 4 to 7 years, with the highest incidence rates reported in school-aged children and those under 5 years of age.[1] Asymptomatic carriage plays a key role in sustaining transmission. *Mycoplasma*-associated major erythema multiforme (EMM) primarily affects children between the ages of 5 and 15 years, with a slight male predominance.[1,5] In our case series, all patients were male with a mean age of 10 years and no notable medical history, which is consistent with published data. Prodromal symptoms of EMM often include an influenza-like syndrome characterized by low- grade fever, dry cough, fatigue, and occasionally odynophagia. These symptoms typically precede the onset of skin lesions by 3 to 7 days, which was also observed in our study, with an average interval of 7 days.[6] The acute phase of EMM is marked by the abrupt appearance of typical target or "iris" lesions, symmetrically distributed and primarily located on the face, trunk, and extensor surfaces of the limbs. All three of our patients had severe gingivostomatitis and bilateral conjunctivitis, while one exhibited genital mucosal involvement. These mucocutaneous lesions are often painful, erosive, sometimes bullous, crusted, and in certain cases, exhibit a burning appearance.[2,7] Fever and general malaise are common findings.[2,6] Physical examination revealed no lymphadenopathy, hepatosplenomegaly, neurological, articular, or gastrointestinal signs. *Mycoplasma pneumoniae* is primarily a respiratory pathogen and is responsible for approximately 20% of community-acquired pneumonias in children.[1,8] It typically causes atypical pneumonia that rarely leads to acute respiratory distress. In our series, pulmonary involvement was most pronounced in Case 3 but did not require ventilatory support. A systemic inflammatory response was consistently noted across cases.[8,9] *Mycoplasma pneumoniae* and *Herpes simplex virus* are the two most commonly implicated pathogens in the pathogenesis of EMM in children.[9] Chest radiographs often reveal concomitant interstitial involvement and may evolve toward a more exudative pneumonia.[7,8] Case 3 presented with a rapidly progressive atypical pleuropneumonia. Allergological investigations are crucial in recurrent cases and were positive in Case 1. Skin biopsy, though rarely performed, may be indicated in cases of diagnostic uncertainty to rule out Stevens-Johnson syndrome or subacute lupus erythematosus.[3] The average hospital stay in our study was 10 days. The principal differential diagnoses of pediatric EMM include Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), drug-induced toxidermias (e.g., maculopapular

rash, DRESS), viral exanthems (HSV, CMV, EBV, enteroviruses), Kawasaki disease, and subacute cutaneous lupus erythematosus.[4,5] Prognosis depends on the timing of diagnosis and treatment, underlying patient conditions, extent of mucocutaneous involvement, and the presence of viral co-infections. With appropriate management, the clinical course is generally favorable.[4] Recommended therapies include macrolides, quinolones, antivirals, and systemic corticosteroids.[5,9] In our series, all patients had a favorable clinical outcome. However, one patient experienced recurrence, which was later attributed to beta-lactam hypersensitivity. In such cases, allergological assessment and possibly skin biopsy are essential.[4,7]

CONCLUSIONS

Early recognition of this clinical presentation, which is distinct from drug-induced Stevens- Johnson syndrome, is essential to guide appropriate etiological investigations and initiate targeted treatment. Viral co-infection may modulate the severity of clinical manifestations, and recurrent episodes should raise suspicion of underlying drug hypersensitivity. Pulmonary, dermatologic, neurologic, articular, and cardiac complications are commonly reported in children, although precise data on their incidence remain limited. These cases underscore the importance of a thorough differential diagnosis, integrated multidisciplinary management, and prolonged follow-up to prevent complications and improve functional outcomes.

REFERENCES

1. Ramien ML, Mansour D, Shear NH. Pediatric erythema multiforme: recognition, diagnosis, and management. *Pediatr Drugs*, 2022; 24: 307–319.
2. Ramien ML. Erythema multiforme in children: clinical features and differential diagnosis. *Clin Exp Dermatol*, 2021; 46(3): 420–429.
3. Ramien M, Goldman JL. Pediatric erythema multiforme and its mimickers. *F1000Res*, 2020; 9: F1000 Faculty Rev-982.
4. Haseeb A, Suri A, Ahmed Y, et al. Ocular manifestations of Mycoplasma pneumoniae infections: an updated review. *Ocul Surf*, 2023; 28: 1–10.
5. Frantz GF, McAninch SA. Erythema multiforme. In: *StatPearls* [Internet]. Treasure Island (FL): StatPearls Publishing, 2024; 28. PMID: 30247835.
6. Liccioli G, Cipriani F, Bernardini R, et al. Mycoplasma pneumoniae and cutaneous eruptions in children: a challenging diagnosis. *Clin Exp Allergy*, 2021; 51(5): 740–744.
7. Fan X, Zhang Y, Li D, et al. Clinical features of Mycoplasma pneumoniae-associated erythema multiforme in children: a retrospective study. *Front Pediatr*, 2021; 9: 698261.
8. Lode HM. Clinical impact of community-acquired atypical pneumonia in children. *Pediatr Infect Dis J* [Internet], 2013; [2025; 18]. Available from: https://www.sciencedirect.com/science/article/abs/pii/S0011853213000529
9. Foy HM. Infections due to Mycoplasma pneumoniae in the United States: ten years of surveillance. *Clin Infect Dis*, 1993; 17(Suppl_1): S37–S46.