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Case Report: Mycoplasma Induced Rash and Mucositis in a 21-Year Old Female

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Abstract

Mycoplasma pneumoniae infections are increasingly prevalent in Australia, particularly among children, adolescents, and young adults. While M. pneumoniae typically presents as a respiratory infection with symptoms such as sore throat, cough, and fever, it can also manifest with extrapulmonary complications. This case discusses a 21-year-old female presenting with severe chest pain, erythema multiforme-like rash, angioedema, and arthralgia, but notably without the classic respiratory symptoms of M. pneumoniae. Initial evaluations, including electrocardiogram (ECG) and troponin levels, ruled out cardiac involvement. A positive IgM for M. pneumoniae, elevated inflammatory markers, and thorough exclusion of other differential diagnoses confirmed Mycoplasma-Induced Rash and Mucositis (MIRM). Treatment included antibiotics, corticosteroids, antihistamines, and leukotriene receptor antagonists, which led to symptom resolution. This case emphasizes the diverse presentations of M. pneumoniae infections and the importance of timely recognition to avoid diagnostic delays. Given the lack of standardized MIRM management guidelines, further research is warranted to optimize therapeutic approaches, with emerging evidence suggesting the benefits of early immunosuppressive therapy.

Keywords: Mycoplasma; Rash and Mucositis

Introduction

Mycoplasma pneumoniae infections have been increasing in prevalence across Australia, particularly among children, adolescents, and young adults. Cyclic patterns of incidence, with peaks approximately every seven years, are attributed to waning population immunity.

Unlike most bacteria, M. pneumoniae lacks a cell wall, which renders it resistant to beta-lactam antibiotics such as penicillins and cephalosporins [1]. The pathogen commonly causes atypical pneumonia, characterized by a gradual onset of symptoms, including sore throat, cough, fever, and malaise. However, M. pneumoniae is also implicated in a variety of immune-mediated extrapulmonary complications, including erythema multiforme-like skin rashes, haemolytic anaemia, mucositis, myocarditis, encephalitis, and arthritis [2-4].

Symptoms of M. pneumoniae infections may persist for one to three weeks, with diagnostic delays often due to nonspecific presentations. Management typically involves macrolides, tetracyclines, fluoroquinolones, and supportive measures for severe or prolonged cases [5]. This case report explores a unique presentation of M. pneumoniae infection manifesting as MIRM, highlighting the diagnostic and therapeutic challenges.

Case Presentation

A 21-year-old female presented with a three-day history of worsening chest pain, angioedema, and an erythema multiforme-like rash. She had no significant past medical history. The patient's symptoms began with central, crushing chest pain radiating to the interscapular region. The severity of the pain fluctuated from 2/10 to 8/10 over the first two days. On the second day, she visited the emergency department, where her ECG and troponin levels were unremarkable. She was discharged with reassurance.

By the third day, the patient developed a rash on her forehead that resolved within 24 hours but subsequently reappeared on her shoulders, neck, and ribs. She also experienced facial angioedema and subjective fevers, prompting a second emergency visit. Initial management included treatment for suspected anaphylaxis with

intramuscular adrenaline, corticosteroids, antihistamines, and antibiotics. Despite resolution of the angioedema, the rash spread to her limbs by the fifth day, accompanied by worsening arthralgia, particularly in the left wrist, which was exacerbated by movement.

Examination and Investigations

The patient was hemodynamically stable throughout her presentation. Her temperature ranged between 36.1°C and 37.4°C, with a heart rate between 65 and 102 beats per minute, respiratory rate between 16 and 18 breaths per minute, and blood pressure between 110/65 mmHg and 136/75 mmHg. Physical examination revealed a widespread erythema multiforme-like rash and oral mucositis. No respiratory distress or abnormal lung sounds were observed. There were no cardiac murmurs or pericardial rubs (Figures 1-4).

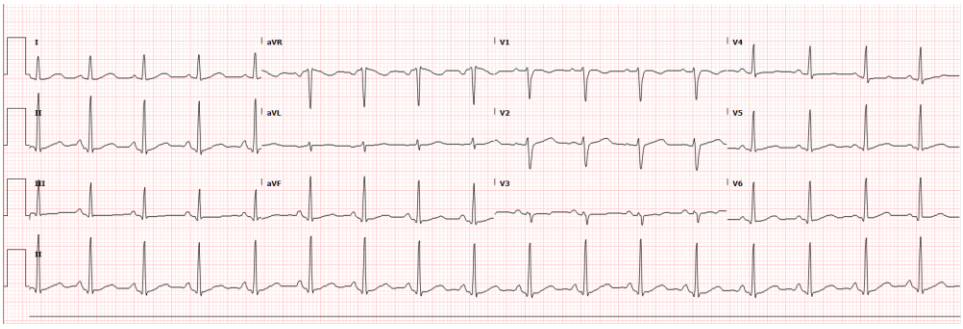

Table 1: *ECG of the patient.*

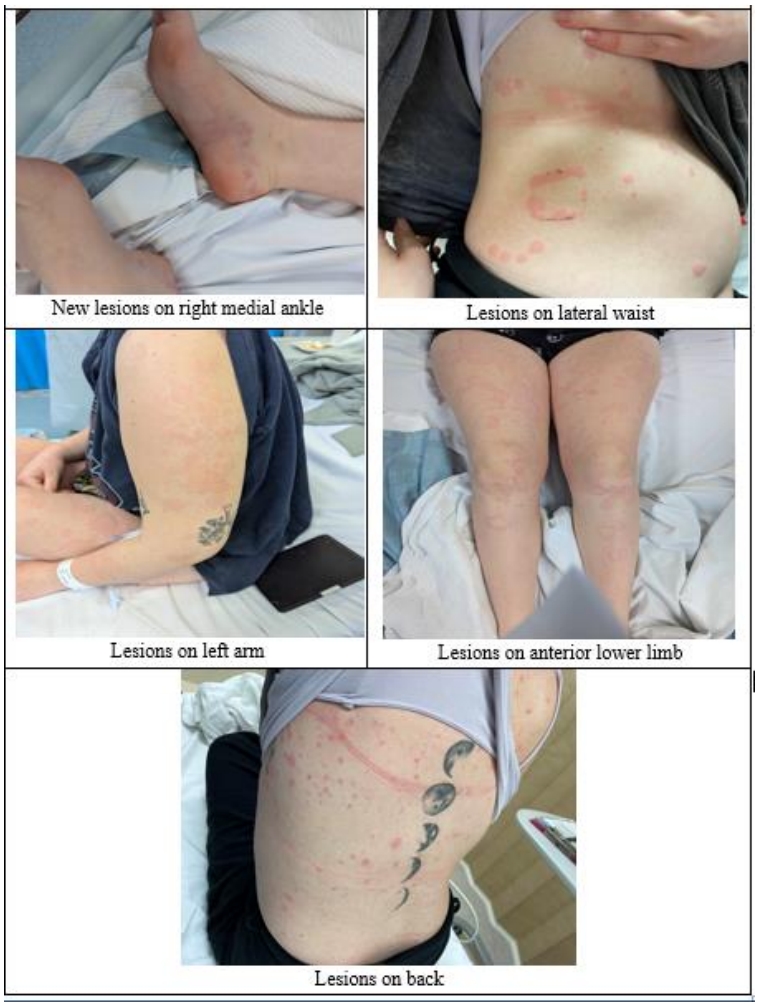

Table 2: *Skin lesions upon review.*

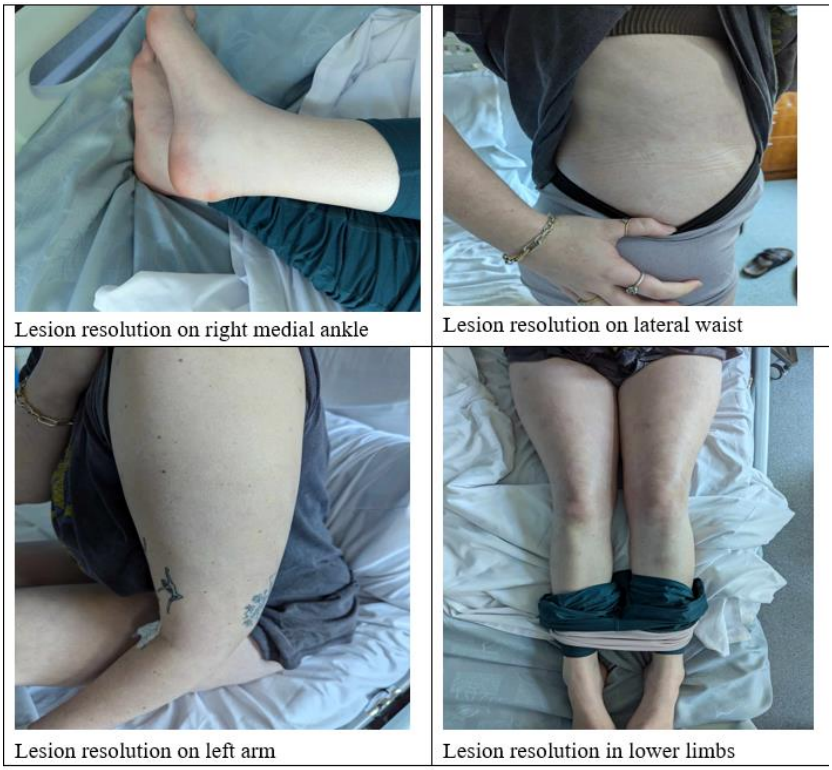

Table 3: *lesion sites upon discharge.*

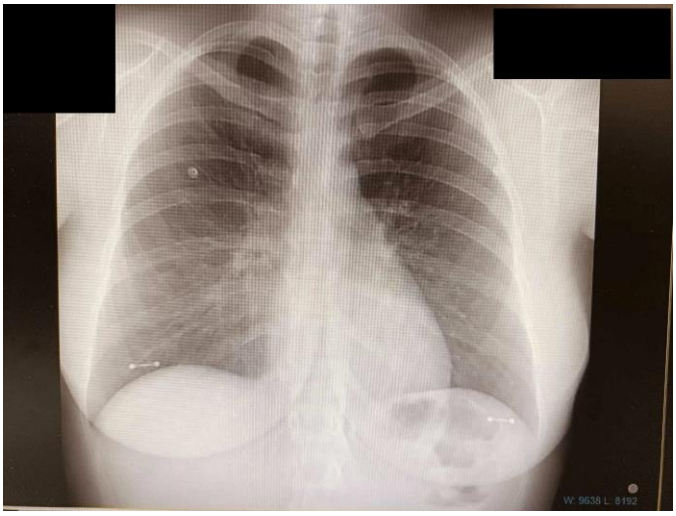

Table 4: *Chest x-ray.*

Key investigations revealed a positive IgM for M. pneumoniae and elevated inflammatory markers, including a white cell count of 19.2 × 10^9/L with neutrophils at 16.3 × 10^9/L, C-reactive protein (CRP) at 96 mg/L, and erythrocyte sedimentation rate (ESR) at 35 mm/hr. Tests for other infections, including Epstein-Barr virus (EBV), cytomegalovirus (CMV), herpes simplex virus (HSV), human immunodeficiency virus (HIV), syphilis, hepatitis, gonorrhoea, and chlamydia, were negative. Imaging, including chest X-ray, echocardiogram, and abdominal ultrasound, was normal. Based on these findings, a diagnosis of MIRM was made.

Management

The patient was treated with azithromycin 500 mg daily for five days for the M. pneumoniae infection. In addition, she received methylprednisolone 125 mg daily for three days to reduce inflammation. Antihistamines were administered, including loratadine 10 mg daily for seven days and nizatidine 150 mg twice daily for seven days, to manage the allergic response. Montelukast 10 mg daily was prescribed for five days as a

leukotriene receptor antagonist to further mitigate inflammation and prevent recurrence of angioedema. By the time of discharge, her rash and mucositis were resolving.

Discussion

This case highlights an atypical presentation of M. pneumoniae infection with extrapulmonary manifestations, including MIRM. Notably, the patient lacked the classic respiratory symptoms typically associated with M. pneumoniae. While chest pain was her primary complaint, cardiac causes were ruled out through normal ECG, troponin levels, and echocardiography.

The diagnosis of MIRM was supported by the presence of erythema multiforme-like lesions, mucositis, and a positive M. pneumoniae IgM. Other differential diagnoses, such as Stevens-Johnson syndrome and toxic epidermal necrolysis, were excluded based on the absence of drug exposure, Nikolsky sign, and blistering lesions [2].

Pathophysiology and Management

MIRM is thought to involve both molecular mimicry and hematogenous spread of M. pneumoniae. However, its pathophysiology remains poorly understood, which contributes to the lack of standardized treatment guidelines [6]. Emerging evidence suggests that immunosuppressants, such as cyclosporine, may be beneficial in addition to antibiotics and corticosteroids [2].

A Canadian Dermatology Association case series proposed cyclosporine as an effective option for reducing hospital stay duration and achieving faster resolution of symptoms compared to corticosteroids and intravenous immunoglobulin (IVIG) [3]. Similarly, a clinical trial in 2019 demonstrated the combined efficacy of montelukast and methylprednisolone in modulating the inflammatory response in M. pneumoniae infections [4].

Conclusion

This case underscores the importance of recognizing extrapulmonary manifestations of M. pneumoniae, such as MIRM, even in the absence of respiratory symptoms. Prompt diagnosis and tailored management are crucial to prevent complications. The variability in treatment approaches highlights the need for further research to develop evidence-based guidelines for MIRM management.

References

1. Atkinson TP, Balish MF, Waites KB. Mycoplasma pneumoniae infections in children. Pediatric Infectious Disease J. 2008; 27: 87-94.
2. Canavan TN, Mathes EF, Schnapp LM, Goldfarb J. (2015). Mycoplasma-induced rash and mucositis. J American Academy Dermatol. 2015; 72: 811-816.
3. Deane CD, Shear NH. Emerging treatments for severe mucocutaneous drug reactions. J Canadian Dermatology Association. 2018; 25: 142-148.
4. Kawai Y, Miyashita N, Kubo M, Akaike H, Kato T. Clinical and epidemiological features of children with Mycoplasma pneumoniae pneumonia in Japan. J Infection and Chemotherapy. 2013; 19: 1032-1036.
5. Meyer Sauteur PM, van Rossum AM, Vink C. Mycoplasma pneumoniae in children: Carriage, pathogenesis, and antibiotic resistance. Current Opinion in Infectious Diseases. 2014; 27: 220-227.