

Case Report

Measles Pneumonia in Adults : A Case Report and Review of Literature

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Abstract

Pneumonia, in the context of measles, can lead to severe morbidity and mortality among adults. Although childhood vaccination efforts have substantially decreased global measles incidences, adults might remain susceptible due to incomplete vaccination histories or absence of natural immunity. This complexity challenges physicians when considering differential diagnoses in adults. Here we present a case of atypical viral Pneumonia in a 45-year-old male who presented with persistent fever and exanthematous rash for ten days. Subsequent workup of fever revealed measles as the cause of his viral Pneumonia.

Key words : Measles, Adult Measles, Pneumonia, Atypical Pneumonia.

Measles remains a major public health concern with an estimated 1,36,000 deaths reported Worldwide in 2022. It is caused by a virus and is characterised by Fever, Malaise, Cough, Coryza and Conjunctivitis, followed by a maculopapular rash¹. Measles can result in complications such as Pneumonia, Encephalitis and Death.

Children aged between 6 months to 5 years are most susceptible to measles virus infection². However, there has been a recent increase in the percentage of measles cases in adults since 2010 probably due to rampant vaccination. Pneumonia due to measles in adults is uncommon³.

We report a case of atypical measles characterized by Fever, Pneumonia along with polymorphic rash in a 45-year-old male.

CASE REPORT

A 45-year-old male with no prior medical illness, presented to the Emergency Department with a six-day history of Fever with Chills and Rigors, Dry cough, Headache, Body ache and Conjunctival suffusion. He had no history of insect bites or recent travel.

On examination, the patient was afebrile with tachycardia of 102 beats/minute. His Blood Pressure was 130/80 mmHg and Oxygen saturation was 98% at room air. Local examination revealed exanthematous rashes on his face, chest, trunk, and limbs. Thrombocytopenia ($146 \times 10^3 \mu\text{L}$), Lymphopenia (12%), and C reactive protein elevated at

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Editor's Comment :

- Measles should be considered in adults presenting with febrile rash illnesses and respiratory symptoms, especially when common viral and bacterial causes are excluded.
- Adult measles can manifest atypically, leading to delayed diagnosis and unnecessary antimicrobial use.
- Awareness of vaccination history gaps and early serologic testing are key to timely diagnosis and management.

76.9 mg/L were noted. Pharyngeal swabs tested for influenza and COVID-19 were negative. Sputum and blood cultures were found to be sterile. Arterial blood gas demonstrated hypoxia. Dengue, Malaria, Leptospira and Weil Felix tests were negative. In view of persistent Fever, CT scan of Thorax was done which revealed subpleural subsegmental atelectasis involving inferior lingula, and small consolidation involving the medial basal segment of the right lower lobe.



Fig 1 — Exanthematous rash on chest



Fig 2 — Exanthematous rash on foot

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Fever persisted for one week despite treatment with Oseltamivir and antibiotics which were started in view of suspicion of viral Pneumonia. In view of persistent Fever and Rash, the patient was tested for IgM measles on day ten of his illness and the results were positive. The patient showed resolution of Fever and rash on days 11 and 12. Pneumonia resolved radiologically after two weeks. The patient did not have any neurological symptoms Post-resolution of Pneumonia and Post-recovery. His vaccination status against measles in childhood was not known.

DISCUSSION

While measles cases and mortality have decreased since the 1960s when vaccines became widely available, adult measles is currently on the rise and presents unique challenges and considerations distinct from its pediatric counterpart. Despite widespread vaccination efforts, outbreaks among adults continue to occur, underscoring the importance of understanding and addressing this public health concern³.

The epidemiology of adult measles reveals a shifting landscape, with incidence rates influenced by factors such as waning immunity and pockets of unvaccinated individuals. While childhood immunization programs have significantly reduced measles cases globally, adults may remain vulnerable due to incomplete vaccination status or lack of natural immunity. Additionally, travel-related exposures contribute to sporadic cases and outbreaks in adult populations³.

Clinical presentation of measles in adults often differs from that in children, with symptoms potentially being less severe or atypical. Fever, Cough and Malaise may precede the characteristic maculopapular rash, leading to diagnostic challenges, especially in settings where measles is not routinely encountered. Complications, including Pneumonia and Encephalitis, can occur more frequently and may result in severe morbidity or mortality in adults. Central Nervous System complications of measles include Acute Disseminated Encephalomyelitis (ADEM), Measles Inclusion Body Encephalitis (MIBE) and Subacute Sclerosing Panencephalitis (SSPE)⁴.

In measles cases, Pneumonia has been reported in up to 57% of instances. However, most of these cases involve secondary bacterial infections, whereas primary measles Pneumonia, which occurs in 3-4% of cases, is particularly

associated with individuals who have compromised immune systems. When individuals who received a measles vaccination with a measles virus-killed vaccine are exposed to natural measles, it can result in Atypical Measles Pneumonia. On the other hand, there have been documented occasions where patients were not vaccinated against measles. A high Fever, Headache, Cough, Myalgia and abdominal pain typically appear two to three days after the onset of atypical measles Pneumonia. In contrast to standard measles, patients also exhibit a rash. Centripetally, it spreads from the palms and soles. The densest in the lower extremities are pruritic, vesicular and petechial. Limb edema may also occur. Chest radiographs may show lobular or segmental infiltration along with hilar lymphadenopathy. Pleural effusion might also be visible on these radiographs. These abnormalities can persist for several months, even after the patient has recovered⁵.

CONCLUSION

Measles Pneumonia in the current era should be considered as one of the differential diagnosis along with other viral etiologies like COVID-19 and Influenza in adults. Hence, understanding the clinical features of adult measles is crucial for developing effective prevention, diagnosis and treatment strategies at population level.

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