

Fever with Rash, an Alarm to the Physicians - A Case Report of Atypical Measles

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ABSTRACT

Measles is a highly contagious disease caused by Paramyxovirus group. It has been estimated that globally deaths occurs out of measles. The disease still remains as one of the leading cause of death among young children and adults despite the effective vaccination. The outbreak of measles is on rise in recent years with serologically confirmed cases in India. The incidence and complications of atypical measles is usually severe among older age groups even prior immunization. We report a case of 15-year-old male with symptoms of fever and rash with possible differential diagnosis and emphasize on the clinical presentation of atypical measles among adolescent age group with an additional evidence of investigations.

CASE REPORT

A 15-year-old male without significant past medical history, immunized for age presented with history of fever for 5 days which was insidious in onset and was intermittent, associated with chills and rigor. H/O vomiting was there for 5 days, which was non-projectile type with multiple episodes associated with loose stools. No history of abdominal distention or urinary tract infection. H/O rash was there for 3 days with severe itching. No history of meningitis. On general examination patient was febrile (103 degree Fahrenheit) with conjunctival suffusion. The patient had exanthematous maculopapular rash over face, anterior trunk, back, upper extremities including palms sparing the lower extremities [Table/Fig-1-5]. On oral examination candidiasis was present. No Koplik spots were found. On neck examination there was bilateral posterior cervical lymphadenopathy, multiple, discrete mobile firm in consistency larger one measuring 2cm, systemic examination shows regular pulse of 102 per minute, Blood pressure of 100/70mm Hg. Cardiac examination was normal. Respiratory examination showed bilateral extensive crackles. Abdomen was soft with mild splenomegaly. Central nervous system examination was normal. From the history and clinical examination we thought of differential diagnosis like malaria, leptospirosis, dengue fever, typhoid, drug allergy, atypical measles and infectious mononucleosis.

Laboratory investigations such as haemoglobin counts and serial platelet counts were normal. Peripheral smear was normal and negative for malarial parasite. Rapid serological assays for Syphilis, HIV, leptospirosis, dengue, typhoid, Infectious mononucleosis were negative and non-reactive. Biochemical profile including liver function tests and coagulation parameters were normal. Urine analysis was

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normal and blood, urine and sputum cultures were negative. Chest X-ray was found to be normal.

IgM antibody using Enzyme Linked Immunosorbent Assay for measles was found to be positive with titer of 15.9 units per milliliter with normal values being within 8-12 units. The IgM serology for measles was positive despite previous single dose of childhood measles, mumps and rubella (MMR) vaccination. The patient was treated with intravenous fluids, antibiotics and Vitamin A supplement. After a 3 week period, the patient recovered without any complications and he was discharged.

DISCUSSION

WHO estimates 145,700 deaths globally in the year 2014 [1,2]. According to WHO 2014, nearly 310 serologically positive cases of measles have been confirmed in India among 28 states [2,3]. The presentation of fever with rash in an adolescent age group usually suspects disease with wide differential diagnosis such as malaria, dengue, drug allergy, leptospirosis, typhoid, infectious mononucleosis. Under diagnosis of atypical measles occur in many occasions which might be due unique symptoms and its tendency to occur with complications in adult age group [4,5]. According to CDC, atypical measles is a modified type of measles that occurs in adolescents and adults with milder symptoms who have been immunized previously with killed measles vaccine or unknown vaccine and subsequently exposed to wild type measles [4,5]. Studies reveal that this kind of measles usually present with fever followed by a rash which is urticarial, maculopapular and haemorrhagic which is similar to our case. The distribution of rash is also unique with first appearance in the face and neck area [Table/Fig-1] followed by trunk [Table/Fig-2,3] and upper extremities and palm area [Table/Fig-4] sparing the lower extremities [6,7] [Table/



[Table/Fig-1]: Distribution of erythematous macules over head and neck. **[Table/Fig-2]:** Erythematous eruptions over anterior trunk. **[Table/Fig-3]:** Distribution of erythematous rash over the back. **[Table/Fig-4]:** Distribution of rash over the palm area. **[Table/Fig-5]:** Absence of typical rash over lower extremities.

Fig-5]. There is no evidence of koplik spots seen in our case which is a typical presentation of atypical measles. Oral examination revealed candidiasis which raised the suspicion of immune compromised state but HIV ELISA was found to be negative and found to have poor oral hygiene. In our case, measles serology IgM titer was found to be positive despite a previous vaccination.

Studies have postulated that in atypical measles there is fourfold increase in antibody titers and suggests serological testing during the outbreaks [7,8]. Literature reveals that primary vaccination failure occurs in such cases due to imbalance in antibody response to the measles virus glycoproteins haemagglutinin and fusion elicited by the inactivated vaccine resulting in inadequate immunity to an individual and improper cold chain maintenance and poor handling of vaccine by the health care professionals [8,9]. Revaccination with live measles vaccine is suggested in atypical measles cases within 72 hours who have not received even a single dose earlier to prevent further complications like encephalitis in adults [7-9]. We supported our patient with good hospital care, isolation and vitamin A supplementation as per the recommendations suggested by CDC [4,5]. The universal immunization programme supports two doses of lyophilized measles vaccine, first dose at 9 to 12 months age and second dose at 16 to 24 months for complete protection and prevention of atypical measles in adult stage [10].

CONCLUSION

We conclude that atypical measles still remains as a challenge for physicians towards the diagnosis. Healthcare professionals should be aware that people who have already vaccinated could still contract measles. Atypical Measles should be definitely included in the differential diagnosis of patients with symptoms of fever and rash. Careful immunization history should be included in the medical clerking. Proper handling of vaccines and maintenance of cold chain storage with additional stabilizers is necessary to prevent the outbreaks. Serology strongly plays as an important diagnostic modality whenever there is low clinical suspicion for atypical measles.

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ABBREVIATIONS: CDC-Centers for Disease Control and prevention, WHO-World Health Organization

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