International Journal of Contemporary Pediatrics
Prasad T. Int J Contemp Pediatr. 2021 Jul;8(7):1275-1277
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20212485

Case Report

Measles like syndrome after measles and rubella vaccination

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Received: 19 May 2021
Revised: 15 June 2021
Accepted: 16 June 2021

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ABSTRACT

National vaccination program (NIS, IAP) provides vaccination for measles and rubella (MR vaccine) for all children below 15 years of age. After vaccination with live attenuated viruses, the virus replicates on a limited scale. Replication may lead to mild symptoms occurring 5-14 days after MR-vaccination including fever, conjunctivitis and rash but sometimes it leads to florid type of severe rashes which are indistinguishable from a wildtype measles infection. A measles like syndrome may occur following MR vaccination, although it seems to be a rare event and therefore as a pediatrician we must take out time to educate and reassurance the parents about this benign nature and so as to avoid unnecessary problems in future. A 14 year old female child was admitted in our hospital with an impressive (florid) rashes, 7 days after MR vaccination in our vaccination clinic. Diagnostic tests were negative for measles and other infections and was discharged after 7 days of nursing and supportive care. Within 14 days after MR vaccination, a child can present with symptoms very similar to a wildtype measles virus infection. The low incidence of wildtype measles infection after MR vaccination, strongly suggests that these symptoms will likely be a reaction to MR vaccination. To elaborate lots of diagnostic procedures may cause the parents a lot of stress and therefore offering nursing care, supportive care and reassurance to parents may be more appropriate and effective in such cases.

Keywords: Measles, Rubella, Florid rashes, Allergic reaction, MR vaccine, Infected conjunctiva

INTRODUCTION

Measles and rubella are highly contagious viral diseases that are spread by contact with an infected person through coughing and sneezing.[1-2] The morbidity and mortality associated with measles is because of the complications and is a leading cause of deaths in children, mostly in developing countries and in this COVID-19 era most of such type of cases might be more dangerous and could be missed. Around 150 countries are currently using measles and rubella containing vaccines and they have proven to be highly safe and effective.[3-6] In India NIS, IAP provides MR vaccine for all children below 15 year of age for protecting the child and to eliminate transmission of measles and rubella from the community by vaccinating 100% targeted children.[3-6] After vaccination with live attenuated viruses, the virus replicates on a limited scale. Replication may lead to mild symptoms occurring 5-14 days after MR-vaccination including fever, conjunctivitis and rash but sometimes it leads to florid type of severe rash which are indistinguishable from a wildtype measles infection.[7]

The objective of this report was that a measles like syndrome may occur following MR vaccination, although it seems to be a rare event from our review and therefore as a pediatrician we must take out time to educate and reassurance the patients and parents (attenders) about this benign nature, so as to avoid unnecessary problems in future.

CASE REPORT

A previously healthy, 14 year old female presented in the pediatrics OPD with history of fever for 4 days, cough, rhinorrhea and infected conjunctiva for 3 days and diffuse maculopapular rashes for 1 day. Patient developed her symptoms seven days after receiving MR vaccine in our vaccination clinic two weeks ago. She had taken all immunisation as per NIS and IAP schedule and had no any previous adverse reactions to any immunizations (according to her vaccination records). She had no any exposure to sick contacts or no any exposure to contacts with a rash patients, no history of travel outside of West Bokaro due to restriction in COVID-19 era. She had no history of animal contact, no history of ingestion of unpasteurized dairy products and no any history of consumption of undercooked meat.

Patient was admitted in our isolation ward and workup was started. On examination patient was conscious, oriented, febrile, no cyanosis, no pallor and clubbing, oral mucosa was normal, tonsil was normal, no congestion, maculopapular rash was present (fully blanchable) all over the body, more in face, neck, trunk and less in limbs (Figure 1 A-C). Temp was 102ºF, H/R 100 per minutes, R/R 22 per minutes, BP 110/70 mmHg, lip was cracked but was not red, tongue was normal, no coated, soft plate, uvula, pharynx, tonsil was normal. Respiratory system had bilateral wheeze, CVS was S1S2 normal, no murmur, CNS was normal, abdomen was soft, no tenderness, no organomegaly. All routine investigations were done for excluding other type of infection like CBC, haemoglobin, platelets, ESR, MP, COVID-19 test (RAT, RT-PCR), urine routine, LFT, creatinine, ASO titre, throat swab for culture and sensitivity, NS1 antigen and IgG/IgM for excluding dengue type infection.

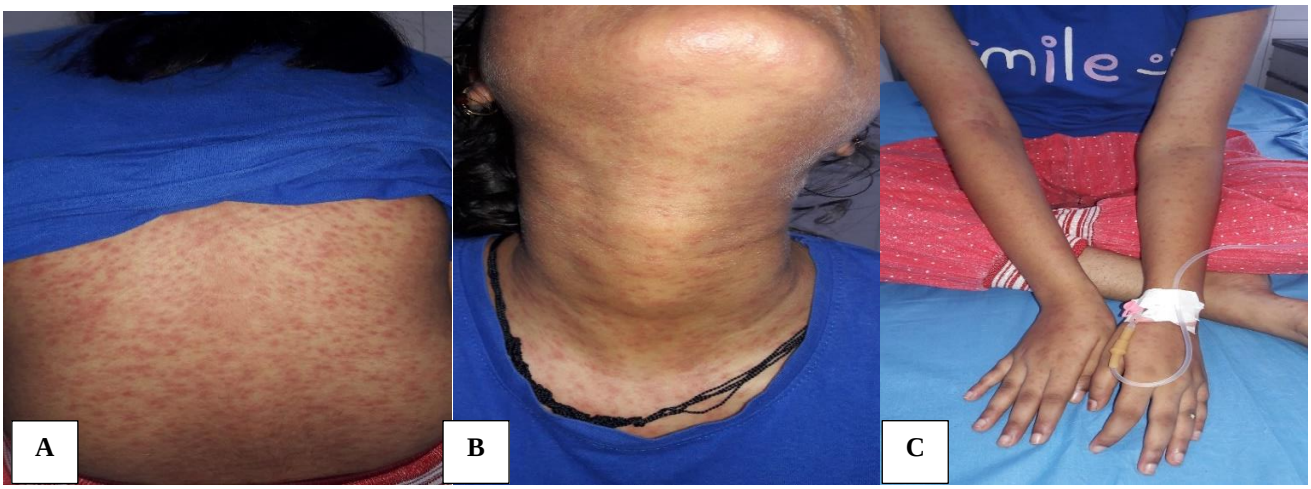

Figure 1 (A-C): Maculopapular rash was present (fully blanchable) all over the body, more in face, neck, trunk and less in limbs.

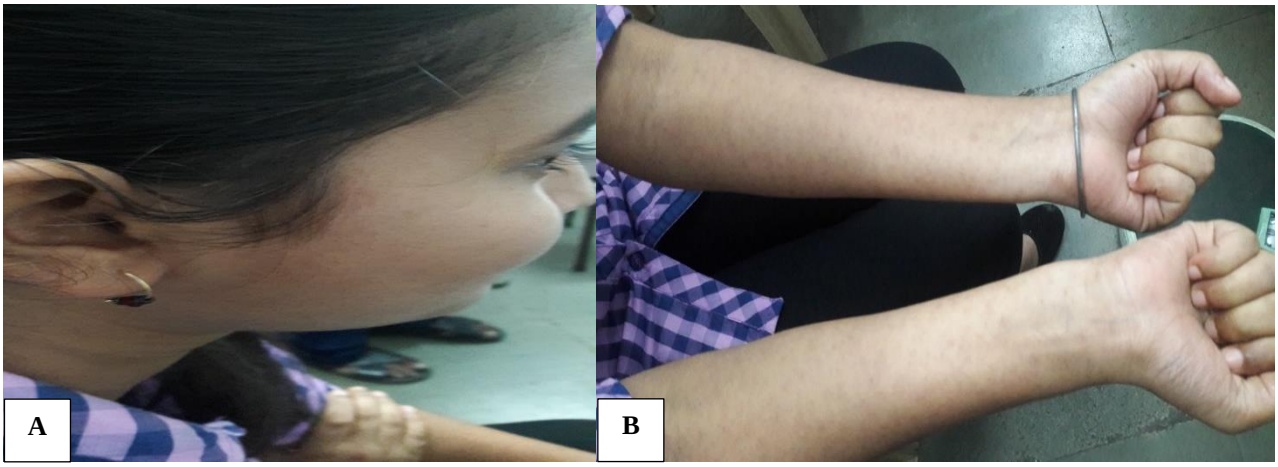

Figure 2 (A and B): During discharge on day 7th (patient's rash and congestion resolved after 5th days of nursing and supportive care).

All routine laboratory values were within normal limits including COVID-19 test which was also negative. Cough was managed by oral promethazine and saline nebulization, fever was managed by paracetamol, soft diet and extra fluid was given for prevent dehydration. Patient's rash and congestion resolved after 5th day of nursing and supportive care and patient was discharged on 7th day of admission (Figure 2 A and B).

DISCUSSION

In this case we have reported a case of florid type of measles rash after 7 days of MR vaccination. Measles and rubella are highly contagious viral diseases that are spread by contact with an infected person through coughing and sneezing. The morbidity and mortality associated with measles is because of the complications. Fever is the most common side effect, occurring in 5%-15% of vaccine recipients and about 5% of children develop a mild rash but only 1-2% of children develop florid type of rash.[8-9] Fever and rash usually appear 7-14 days after vaccination and MR vaccine may cause thrombocytopenia at the rate of about 1 case per 30,000-40,000 vaccinated children.[8-9] It is almost always temporary and life-threatening condition like severe reactions including allergic reactions are very rare.[10] In my case, patient developed florid type of rash 7 days after vaccination. This was preceded by fever and the event was a typical measles like syndrome. We could find a few similar case reports from our literature review which had benign outcome. A total of 124 articles were identified with the above search terms and only those articles describing vaccine induced rash were included in the review. Excluded criteria among our review were drug rash, vesicular rashes, allergic rashes and rashes after >15 days of vaccination, resulted in a total of 40 articles which were reviewed.

CONCLUSION

Within 14 days after MR vaccination, a child can present with symptoms very similar to a wildtype measles virus infection. The low incidence of wildtype measles infection strongly suggests that these symptoms will likely be a reaction to vaccination. Elaborate lots of diagnostic test may cause the parents a lot of stress and therefore offering nursing care, supportive care and reassurance may be more effective in such cases.

ACKNOWLEDGEMENTS

Author is thankful to Dr. A. K. Roy, Dr. R. Krishna, all nursing staffs and all other staffs in the department of pediatrics of Tata central hospital, West Bokaro, Jharkhand.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Prasad T. Measles like syndrome after measles and rubella vaccination. Int J Contemp Pediatr 2021;8:1275-7.