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**Case Report**

# A rare side effect to pentavalent vaccine

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## ABSTRACT

A four month old baby experienced itchy reddish raised maculopapular lesions on face, limbs and trunk within 24 hours of immunization with booster dose of pentavalent vaccine. The lesions were not associated with fever, cough, vomiting, or insect bite. There was no similar family history with siblings .There was no history of similar reactions to the previous two doses of the same vaccine. On taking the prescribed medications the lesions subsided in 2-3 days with no recurrence at the time of follow-up.

**Keywords:** Pentavalent, Immunization, Maculopapular

## INTRODUCTION

Immunization against vaccine-preventable diseases is one of the safest and cost effective intervention to prevent many serious and life-threatening diseases, however it can cause minor and rarely serious adverse effects.[1] Public awareness about vaccine safety has increased primarily, because increase in vaccine coverage resulted in an increased number of adverse events which include both true reactions and events coincidental to, but not caused by vaccine. Despite concerns, vaccination is safer than accepting the risk of diseases which these vaccines prevent. Unless a disease has been eradicated (e.g., smallpox), failure to vaccinate increases the risk to both the individual and society.[2]

## CASE REPORT

A four month old baby boy presented to the Dermatology outpatient department of our hospital with itchy reddish raised maculopapular lesions within 24 hrs following immunization with booster dose of pentavalent vaccine containing diphtheria toxoid, tetanus toxoid, bordetella pertussis (whole cell), HBsAg (hepatitis b antigen) (rDNA) and purified capsular Hib polysaccharide (PRP) in the Paediatrics Department. The maculopapular lesions appeared first on the lower abdomen (Figure 1) progressing all over the body including the lower limbs (Figure 2), hands, face (Figure 3) and back (Figure 4). There was no associated fever, cough, vomiting, sore throat, nasal discharge, bowels upset or insect bite. There was no history of allergy to woollen clothes. The child was exclusively breast fed. Both the mother and child had not taken any medications during this period. There was no change in the routine activity of the child.

There was no history of similar illness in the past. Antenatal and perinatal history was uneventful and baby was otherwise healthy. There was no family history of similar adverse reaction to vaccination in his elder siblings.

There was no history of reaction to the previous two doses of the same vaccine given to the child. This presentation was diagnosed as acute urticaria possibly due to the vaccine and treatment was advised with syrup prednisolone, hydroxyzine oral suspension and calamine lotion. On taking the prescribed treatment, the urticaria subsided in two to three days and there was no recurrence at the time of follow up.

**Figure 1: Maculopapular lesions on lower abdomen.**

**Figure 2: Maculopapular lesions on the lower limbs.**

**Figure 3: Maculopapular lesions on face.**

**Figure 4: Maculopapular lesions on back.**

## DISCUSSION

An adverse event following immunization (AEFI) is defined as a medical incident that takes place after an immunization, causes concern, and is believed to be caused by immunization. Vaccine reactions can be classified into common, minor or non-serious and rare serious reactions.[3] Urticaria is not an absolute contraindication to revaccination and benefits outweigh the risks associated with immunization, hence the child's family was convinced to continue the immunization as per schedule. Vaccine molecule can precipitate an antigenic immune response in the form of fever, erythema, local pain etc, besides; there is a slight risk of foreign body reaction due to components like preservatives used in vaccines.[4] These symptoms usually appear within a day following the vaccination and last for one to three days.[5]

In India pentavalent vaccine was introduced in December 2011.Till date, 83 AEFI cases, some of which associated with fatality, have been reported after this vaccine was introduced.[6] In this case, the patient developed urticaria after immunization with pentavalent vaccine but the individual component to which this reaction could be attributed could not be concluded. In majority of cases, cause of urticaria is idiopathic but it can also be attributed to food proteins, preservatives, drugs, allergens and infections, while vaccine is a rare cause. Eight cases of urticaria following administration of acellular diphtheria-tetanus-pertussis (DTP) vaccines containing gelatin as a stabilizer have been reported.[7] Also, cases of hypersensitivity to thiomersal in vaccines manifesting as urticaria have been reported with hepatitis B vaccine.[8] No previously reported case of urticaria due to pentavalent vaccine could be traced.

As per the norms, since the adverse reaction occurred within 24hrs of the vaccination, and there was no other precipitating or explainable factor leading to such a reaction, we concluded that this reaction was most likely caused by the vaccine. According to the Adverse Events Following Immunization (AEFI): Causality Assessment Scale by WHO (World Health Organization), this adverse effect can be classified as 'probable'.

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