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► **To cite this version:**

Alexis Descatha. Unusual delayed reaction after H1N1 vaccine.. Asian Pacific journal of allergy and immunology, 2010, 28 (4), pp.302-3. <inserm-00578643>

HAL Id: inserm-00578643

<https://inserm.hal.science/inserm-00578643v1>

Submitted on 21 Mar 2011

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Unusual delayed reaction after H1N1 vaccine

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No funding source. No conflict of interest. Written consent obtained from our patient.

Case report (or Letter) = 849 words (446 word from acknowledgments to references, not included)

Acknowledgments

We would like to thank: Dr AM Jonathan (allergologist), Dr MN Crepy (dermatologist), Dr Lillo-Le- Louet (pharmacovigilance center), Mr H Leroux (MD student) and our colleague who accepted the publication of her case.

Abstract (if necessary)

We reported a probable case of allergic contact dermatitis three weeks after the H1N1 vaccine, involving thimerosal additive. Patients should be aware of this possible problem with this unusual delayed reaction.

Thimerosal is a traditional high-prevalence allergen in the general population, which has been used as an antimicrobial agent in contact lens and vaccines (1). However, prevalence in the general population is decreasing in many countries, such as reactions to thimerosal, because of the exclusion of thimerosal in vaccines (2). We reported a probable case of allergic contact dermatitis three weeks after the H1N1 vaccine, involving thimerosal additive.

A 55 year-old woman, who is a medical doctor, noticed an important skin reaction on her left arm (figure 1). The lesion was characterized by erythema and edema, followed by the appearance of papules and vesicles. The skin reaction was exactly at the same site of injection of the Influenza A H1N1 vaccine (Pandemrix© vaccine, Influenza A H1N1 2009 Monovalent AS03-Adjuvanted Vaccine, GSK), but 22 days after the shot. No history of atopy or documented allergic contact dermatitis was found. Only moderate pruritus occurred, with only one application of topical steroid. She had no other significant medical condition of any kind and no treatment at this time. The patch test of thimerosal (*thiomersal*, additive of the vaccine) was weakly positive a week after the initial visit ('+', erythema, infiltration and papules). The evolution was favorable with disappearance in three weeks. A complete testing, including most of the component of the vaccine was performed two month later, in order to avoid recurrence and to confirm the association with thiomersal. The patch test only found a positivity for thimerosal (but important this time '+++'), and was involved in the allergic contact dermatitis presented by our colleague.

There is a debate about thimerosal reactions: some studies raised the possibility that most of the positive reactions to it are irrelevant. However, even though reactions are to it are

decreasing, there a consistency about thimerosal sensitivity does exist in contact dermatitis patients (3). Immediate generalized reaction to thimerosal from an influenza vaccine have been previously reported (4-6), but this was the first reported case of allergic contact dermatitis three weeks after the H1N1 vaccine, probably caused by thimerosal additive.

Allergic contact dermatitis presented by our colleague come from delayed-type hypersensitivity reaction (7), mediated by hapten-specific T cells (8). Even though T-cell mediated reactions usually starting from 2–8 hours up to 2 days after vaccination (9), very late reactions have been described for other medications [up one month (10)]. Other differential cause of acute dermatitis has been excluded by anamnesis and patch tests. No cause of immunodeficiency has been found. It is however possible, the lesion appeared before our colleague noticed it, but only a few days before.

In conclusion, we report an allergic contact dermatitis involving thimerosal additive. Patient should be aware of this possible problem with this unusual delayed reaction.

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Figure 1 Eczema lesion of left shoulder, three days after the beginning of the rash (25 days after the H1N1 vaccine shot).

