

Images in...

Wheat-dependent exercise-induced anaphylaxis associated with a facial soap

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DESCRIPTION

A 27-year-old woman presented to our clinic with sudden-onset of nasal discharge and bilateral periorbital oedema (figures 1 and 2). Although she had been well until the morning, she noticed the extensive, rapidly progressing symptom during exercise at gymnasium after lunch containing fried-wheat. She had no history of food allergies. We performed a radioallergosorbent test, and it was positive for wheat. We made a diagnosis of so-called, wheat-dependent exercise-induced anaphylaxis (WDEIA).¹ WDEIA is one of the most important clinical phenotypes of adult wheat allergy. Although most food-induced allergic reactions occur on first known

oral exposure, WDEIA due to hydrolysed wheat protein (HWP), which can be used in cosmetics, shampoo, or hair conditioner, has been recently reported.²⁻⁴ In Japan, a mail order soap, which sold 46.5 million bars to 4.6 million customers between 2004 and 2010, has caused at least 569 cases to suffer WDEIA. The development of their WDEIA could be induced by primary sensitisation to HWP in the facial soap and accompanying sensitisation to natural wheat protein. The causative allergen of the mass casualties was due to the HWP called Glupal-19S of the soap.⁴ We found her mother had the soap and confirmed the allergen in the present case by a skin-prick testing of Glupal-19S. She was treated with antihistaminergic agents, and her condition improved over the next several days. Her symptom has not recurred with prevention of exercise after meals, and she could take wheat-containing foods. Pathophysiology is not fully understood, but it is reported that cutaneous mast cells from patients with exercise-induced anaphylaxis presented morphologic changes similar to those observed in atopic patients following exercise.⁵ Clinicians should always expect the unexpected cause of allergen, and comprehensive history taking including a patient's family is essential.



Figure 1 Bilateral periorbital oedema.



Figure 2 A close-up picture of periorbital oedema.

Learning points

- ▶ A comprehensive history taking including a patient's family is essential to search for allergen.
- ▶ WDEIA can be caused by an unexpected allergen, such as a soap containing a hydrolysed wheat protein. Patients with WDEIA may take wheat-containing foods unless they exercise.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Iwamoto S, Hagino N, Tanimoto T, Kusumi E. Wheat-dependent exercise-induced anaphylaxis associated with a facial soap. *BMJ Case Reports* 2012;10.1136/bcr.01.2012.5641, Published XXX

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