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Do pacifiers cause latex allergy?

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Key words: allergy; cough; latex; pacifier.

• We describe the case of an 11-month-old girl who had had a cough since the age of 3 months. The cough progressively increased in severity and became more nagging during the night, causing frequent awakenings. She was treated without benefit by her family doctor with antitussives, antibiotics, and finally homeopathic remedies. The past clinical history revealed the presence of seborrheic dermatitis on the scalp and diaper dermatitis. No recurrent vomiting or regurgitation was recorded. From birth, she had used a rubber pacifier, especially during sleep. Her mother suffered from seasonal allergic rhinitis due to Gramineae.

Skin prick tests (SPT) in the infant with the common aeroallergens and foods were negative. SPT to natural rubber latex (NRL) with a commercial allergen (Lofarma S.p.A., Milan, Italy) produced a wheal twice the diameter of the histamine wheal. The total IgE (PRIST, Pharmacia, Uppsala, Sweden) was 18.4 kU/l. Specific IgE (CAP-RAST, Pharmacia) was positive for NRL (0.48 kU/l, class 1). Specific IgE for foods such as banana, apple, chestnut, kiwi, and avocado, which may cross-react with NRL, was absent. When the rubber pacifier was replaced with a silicon one, the cough disappeared. When the infant

was assessed 3 months later, she was well without any treatment.

The clinical history, SPT, and RAST led us to the diagnosis of NRL allergy with upper respiratory tract involvement.

Wrangsjö et al. (1) found two adults, with SPT and RAST positive for *Hevea brasiliensis*, who reacted to extracts of rubber teats or pacifiers, and asked whether their use may represent a NRL sensitization risk for infants. In a series of 326 allergic outpatient children, Novembre et al. (2) found 10 children with NRL-positive SPT. Among them, the frequency of use of rubber teats or pacifiers was comparable to that of atopic latex-SPT-negative children or nonatopic children. They concluded that their use does not affect sensitization to latex. Recently, Niggemann et al. (3) made a retrospective analysis of the risk of latex allergy development in a population of 5-year-old children. Among 149 atopic children, sensitization to latex (cutoff: specific IgE >0.35 kU/l) was found in 20 (13.4%). The researchers were unable to discover relevant lifestyle factors inducing sensitization such as cross-reacting foods, the composition of mattresses, and the use of pacifiers. Retrospective study of the sera of 13/20 sensitized children showed that none of them had detectable specific IgE at the age of 1 year. Sensitization started around the second year of life, but most of the children appeared to be sensitized when between 3 and 5 years of age. Even in a population of 21 children affected by spina bifida, the youngest patient in whom sensitization was demonstrable was 14 months old (4).

Our case shows that very early latex sensitization with associated symptoms is possible and that rubber dummies or pacifiers may provoke it. Finally, we would recommend the assessment of eventual NRL sensitization in infants with persistent cough if they use rubber teats or pacifiers.

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Anaphylaxis from Brazil nut

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Key words: 2S albumin; anaphylaxis;
Brazil nut; food allergy; hypersensitivity.

• The Brazil nut (1) (BN) is the seed of the *Bertholletia excelsa* tree (family Lecythidaceae). It is found in many Amazonian regions of Brazil, Columbia, Venezuela, Peru, and Ecuador. The fruit is a large, spherical, woody capsule or pod measuring on average 10–15 cm. Inside each fruit pod are 12–25 BN. Proteins, very high in sulfur-containing amino acids, constitute 50% of the defatted flour. Storage proteins, such as 12S globulin and 2S albumin, are the most important ones. The 2S protein has been cloned and expressed in some important agronomic seeds in order to enrich their nutritional quality.

**IgE-mediated
anaphylaxis followed
ingestion of a Brazil
nut.**

The patient was a 31-year-old woman who had had seasonal rhinoconjunctivitis and asthma for the last 10 years. Ten minutes after eating a BN, she developed pharyngeal itching, lip swelling, dysphonia, dyspnea, wheezing, and generalized macular exanthema. She was treated with epinephrine, intravenous corticosteroids, and antihistamines v.o. The symptoms resolved within 4–5 h. She had previously developed oral allergy syndrome after eating almond (A), walnut (W), sunflower seed (S), and hazelnut (H). She had suffered from abdominal pain after eating chestnut (CH). She tolerated peanut (P) and pistachio (PI). Prick tests (PT) with common inhalants were positive for pollen from *Olea*, Poaceae, *Artemisia*, and *Plantago*.

Prick-by-prick (PBP) with BN and PT with a 1:10 w/v BN extract were positive. PT and PBP with A, P, CH, SS, and PI were positive. PBP with H, W, and cashew nut were positive. A wheal 5 mm greater than saline control was considered positive. Twenty-five atopic and nonatopic control subjects were negative. Specific IgE (UniCAP, Pharmacia®) was determined with the following results: A, P, CH, and PI, class 2; H and S, class 3; IgE for BN, class 2 (2.37 kU/l). SDS–PAGE (12.5%) was carried out by the method of Laemmli.

For analysis of the BN proteins within the low-molecular-weight range, a tricine-SDS–PAGE system was prepared. In both tests, the samples were under reducing conditions (RC) – with β -mercaptoethanol – and no reducing conditions (NRC) – without this agent, which causes rupture of the interchain disulfide links. SDS–PAGE under NRC revealed six bands of 48.7 (21%), 40 (15.3%), 37.7 (2.6%), and 10.2 kDa (43.8%). Under RC, SDS–PAGE showed 10 bands from 33.7 to 10.3 kDa. In the tricine SDS–PAGE, under NRC, appeared nine bands of 30.1 (22.7%), 28.2 (15.9%), 25.9 (4.8%), 25.2 (2.3%), 20 (2.7%), 17.8 (3%), 8.8 (8.3%), 7.7 (34%), and 5.6 kDa (5.7%). The tricine SDS–PAGE under RC showed nine bands from 25 to 5 kDa. The SDS–PAGE immunoblotting assay under

NRC revealed IgE binding to five bands of 52.2, 41.4, 39, 33.4, and 23.7 kDa. IgE binding under RC was restricted to two bands of 33.4 and 21.4 kDa. The tricine SDS–PAGE immunoblotting, under NRC, revealed IgE binding to bands of 19.3, 18.4, and a wide band of 7.22 kDa, probably the 2S albumin. A loss of binding was observed under RC. This fact revealed the importance of the tertiary structure of proteins in the IgE recognition of epitopes.

The increased consumption of tropical nuts, especially in the UK and the USA, in recent years has increased IgE-mediated hypersensitivity. The first cases of anaphylaxis were reported by Hide (2) in 1983. In 1991, Arshad et al. (3) reported 12 allergic reactions, seven of which were anaphylaxis. In 1996, Ewan (4) investigated the clinical features of acute allergic reactions to peanuts and other nuts in 62 patients; 42% of them were multisensitized to nuts. BN was the second sensitizing nut after peanut. Also in 1996, Nordlee et al. (6) [as in a previous study (5)] demonstrated that 2S albumin is the major allergen of BN (Ber e I). Moreover, they showed that transgenic soybean, enriched with 2S albumin of BN, can bind IgE from subjects allergic to BN. In 1997, Bartolome et al. (7) reported the first case of anaphylaxis in Spain caused by oral contact with a BN.

BN consumption in Spain is still very low compared with the USA and the UK. Here we report the second known case of anaphylaxis in Spain.

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Urticaria and adult celiac disease

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Key words: celiac disease; urticaria.

● CELIAC sprue is a chronic malabsorption disease that occurs in predisposed individuals secondary to ingestion of gluten. We report a case of chronic urticaria associated with celiac disease with a marked improvement of symptoms after adoption of a gluten-free diet.

A 24-year-old woman came to us in May 1997 with hay fever

which had begun 2 weeks before. The patient was tested by skin prick test (SPT) with the main inhalant allergens

(house-dust mites, Gramineae, *Parietaria*, molds, trees, and animal danders) and the following food allergens: milk, soybean, apple, fish, tomato, wheat, and white egg (Bayropharm DHS, Milan, Italy), and the results were evaluated by comparing the diameter of each wheal to that induced by 10 mg/ml of histamine. SPT

A gluten-free diet eliminated symptoms in patients with concomitant celiac disease and chronic urticaria.