

Associated sensitization to latex and chestnut

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Associated sensitization to vegetable products is not uncommon in latex allergy (2–4, 6). We report a case of urticaria and angioedema caused by latex contact and chestnut ingestion.

Case report

The patient, an 8-year-old boy, had had several corrective surgical interventions for anal atresia. He had exhibited acute episodes of urticaria since he was 6 years old. The first episode appeared immediately after contact with a rubber balloon; later similar manifestations appeared after surgical interventions and contact with latex gloves. The last episode of urticaria was associated with angioedema and dry cough and occurred after ingestion of chestnuts. The patient tolerated all other foodstuffs.

All clinical tests were done with the parents' approval and informed consent.

Skin prick tests were positive with latex (10 mg/ml) and chestnut (10 mg/ml). The open oral challenge test with chestnut was positive (15 min after ingestion of 0.5 g of chestnut, the patient developed bouts of sneezing, dry cough, perioral itching and erythema, and isolated facial wheals). The specific serum IgE assessed by Phadezym-RAST was class 4 to latex and negative to chestnut.

An SDS-PAGE with latex and chestnut extracts was carried out; several latex protein bands were observed in the mol. mass range 17–24 kDa, and some below 14 kDa; there were no bands at higher ranges. Chestnut showed a heavy protein band between 27 and 30 kDa and smaller bands over the whole range. An immunoblotting autoradiography

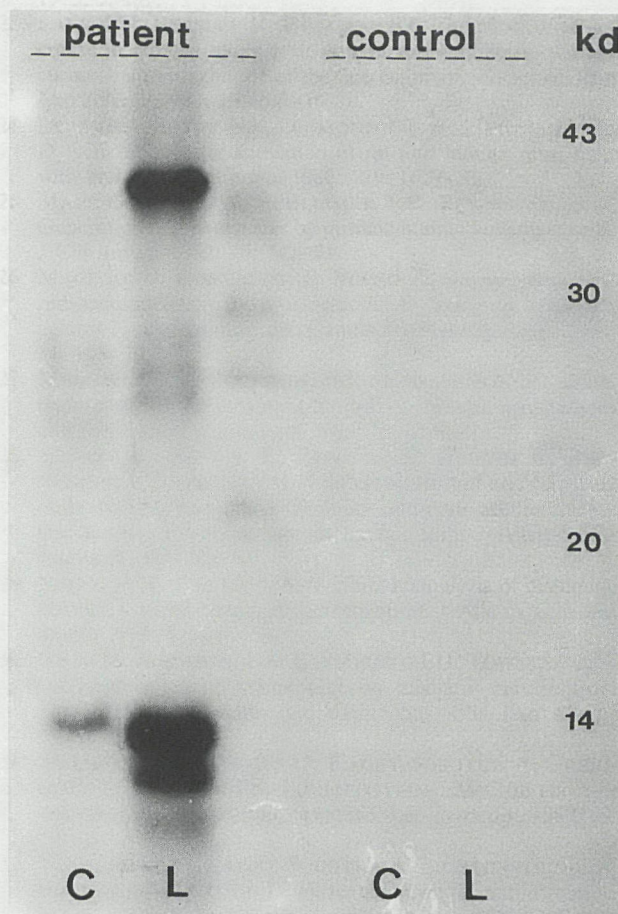


Fig. 1. Autoradiograph of IgE binding from patient's serum and negative control serum to immunoblot prepared from latex and chestnut protein bands of SDS-PAGE gel. C = chestnut; L = latex.

of latex and chestnut bands from SDS-PAGE incubated with the patient's serum showed intense specific IgE binding onto bands of the latex extract corresponding to those with mol. mass of 14 kDa or less in the SDS-PAGE, as well as onto other protein bands which were not apparent in the SDS-PAGE (mol. mass ranges 25–30 and 37–39 kDa). The patient's IgE also bound to various protein bands in the chestnut extract (14 and 25–30 kDa) (Fig. 1). There was no binding of IgE to any protein band with a negative control serum (Fig. 1).

A latex RAST inhibition with chestnut extract was carried out. The greatest latex RAST inhibition with the chestnut extract (28.3%) was achieved with the 1 mg/ml concentration (a higher concentration of chestnut could not be used).

Discussion

The patient exhibits repetitive urticaria and angioedema caused by latex allergy. The sensitization pathway may have been surgical, as the patient had undergone several surgical interventions before the first latex-related urticarial episode. Most reported cases of latex allergy in children had involved repeated surgical interventions (1, 5, 7).

Leynadier et al. (3, 4) found fruit and legume hypersensitivity in patients with latex allergy. More recently, M'Raihi et al. (6) have shown cross-reactivity between latex and banana. Even though it was not possible to demonstrate specific serum IgE antibodies through RAST, our patient had an immediate hypersensitivity to chestnut, confirmed by positive prick test and oral challenge with chestnut. These facts, together with a negative RAST to chestnut in spite of clinically evident immediate hypersensitivity, led us to investigate specific serum IgE antibodies by other procedures. Through immunoblotting, we have demonstrated the presence of specific IgE antibodies in our patient's serum which

were able to bind to proteins from latex and chestnut extracts, and there is even evident binding to protein bands of identical mol. mass (14 and 25–30 kDa) in both extracts.

RAST inhibition was performed in an attempt to establish an immunochemical basis for the possible cross-reactivity between latex and chestnut observed in skin tests and immunoblotting results. In our RAST system, the chestnut extract inhibited the binding of latex in a dose-dependent manner up to 28.3%; this suggests the presence of at least some epitopes common to both allergens, thus supporting the immunoblotting results.

All this suggests the presence in both allergens of some cross-reactive peptides or identical epitopes which might be responsible for the cross-reactivity between latex and chestnut.

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