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Letter to the editor

Zucchini allergy: A case report

Allergie à la courgette : description d'un cas clinique

Keywords: *Cucurbita pepo*; Food allergy; Prick by prick; Specific IgE

Mots clés : *Cucurbita pepo* ; Allergies alimentaires ; Prick by prick ; IgE spécifiques

The zucchini (*Cucurbita pepo*) is a vegetable belonging to the *Cucurbitaceae* family. Unlike other kinds of vegetables, zucchini is picked and eaten when still unripe [1]. Allergic reactions after ingestion of zucchini have rarely been reported [2,3].

We describe a case of a 52-year-old housewife, who underwent two episodes of generalized urticaria after eating cooked zucchini. On both occasions she received emergency department treatment.

Skin prick tests (SPTs) with commercial food extracts, including pumpkin and celery, were negative. SPTs proved positive for *Dermatophagoides pteronyssinus* (mean diameter 4 mm), *Dermatophagoides farinae* (4 mm), grass pollen (6 mm), *Parietaria judaica* (6 mm) and cypress (7 mm). However, these positive results were regarded as devoid of clinical significance, because the patient denied any respiratory symptoms.

Determination of specific IgE (by RAST) to various food allergens, including pumpkin, watermelon, cucumber and celery, was negative as well as RAST for latex, rBetv1 and rBetv2 (ImmunoCap 250, Phadia, Sweden).

Prick by prick tests were performed with raw and boiled zucchini, because commercial extract and RAST substrate for zucchini were not available, and proved positive for native (5 mm) and boiled vegetable (4 mm).

After boiling zucchini at 100 °C for 20 minutes, proteins were extracted by stirring for 2 hours at 4 °C in phosphate buffer saline 1:10 and 1:2.5 wt/vol for raw and boiled zucchini, respectively. Insoluble particles were removed by centrifugation at 15,000 rpm for 1 hour at 4 °C. Protein concentration was determined using the Bradford method and was 1.89 mg/ml for raw zucchini and 1.45 mg/ml for boiled zucchini. The extracted proteins were separated by 4–12% sodium dodecylsulfate-polyacrylamide gel electrophoresis (Nupage Bis Tris, Invitrogen, Milan, Italy), at 80 V for 2 hours. The electrophoresis profile of raw and boiled extracts, after staining with 0.1% Comassie brilliant blue, showed bands at 21.8, 41.5, 51.58 and

69 kDa (Fig. 1). The proteins of the boiled extract were then electrophoretically transferred to nitrocellulose membranes and the resulting membranes were saturated with 0.1 M Tris-buffered saline and 0.5% fat-free milk powder and incubated at 4 °C overnight with the patient serum. Band specific IgE were detected by using peroxidase-conjugated anti-human IgE antibodies from goat (diluted 1:1000 in saturation buffer) [4].

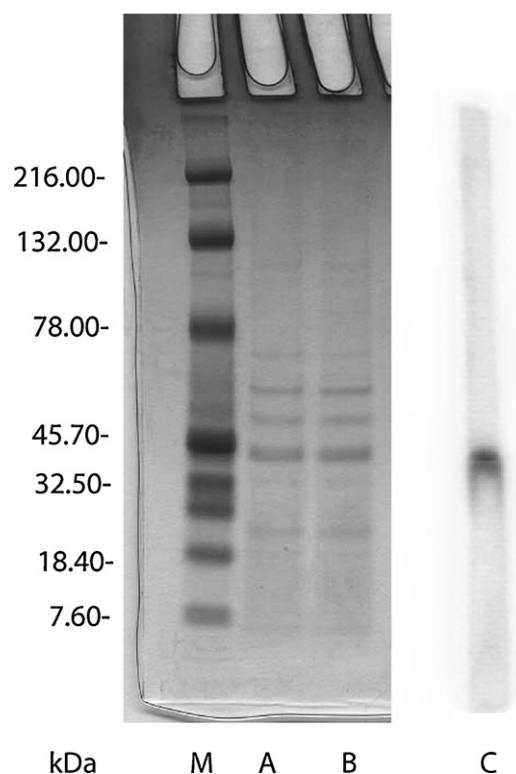


Fig. 1. *Cucurbita pepo* protein identification. Lane M: molecular mass markers. Lane A and B: SDS-PAGE with raw and boiled *C. pepo* extracts, respectively. Lane C: immunoblotting with serum from the *C. pepo* sensitive patient.

Successive chemiluminescence analysis showed specific IgE in the patient serum to a single band of 41.5 kDa (Quantity One Basic, Bio-Rad, Milan, Italy) (Fig. 1).

The study performed indicates that the generalized urticaria reactions lamented by the patient may have been IgE-mediated, because the prick by prick tests with raw and boiled zucchini were positive and the immunoblotting showed specific IgE to a single band with an apparent molecular weight of 41.5 kDa in the patient serum. Moreover, this is the first report of a 41.5 kDa IgE-reactive band in *C. pepo* extract.

Conflict of interest statement

The authors declare that they have no financial relationship or conflict of interest with any biotechnology manufacturer that has an interest in the subject matter or materials discussed in the submitted manuscript.

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