

recently, lip pruritus has also occurred immediately after almond and hazelnut ingestion. Despite these episodes, the patient hasn't completely avoided these fruits. Two years ago, facial redness and oedema occurred minutes after eating raw pomegranate, a fruit she previously tolerated. Currently, she tolerates peeled apple and the other *Rosaceae* family fruits. Skin prick tests (SPT) were positive to Parietaria and grass pollens, peach and cherry commercial extracts as well as fresh pear, apple and pomegranate. *In vitro* tests for serum specific IgE (sIgE) determination yielded positive results to *Parietaria* (*Par j 2*) and grass pollens (*Phl p 1* and *Cyn d 1*). A positive result to peach *Pru p 3* was also obtained. We weren't able to demonstrate *in vitro* sIgE to pomegranate. An oral food challenge (OFC) with this fruit elicited immediate lip oedema and pruritus after eating a quarter of a raw pomegranate.

Conclusion: This is a description of pomegranate allergy, associated with *Rosaceae* fruits hypersensitivity. Similarly, most pomegranate allergy published cases are reported from Southern Europe and patients show *Rosaceae* fruits allergy, especially to peach. Although we weren't able to identify the pomegranate allergens involved, an IgE-mediated reaction was confirmed by the SPT result. Despite the mild symptoms mentioned by our patient, there are risk factors for severe reactions: the patient is from a Mediterranean country, is allergic to peach and has positive SPT to commercial fruit extracts, including peach pulp. Lastly, the *in vitro* results confirmed LTP involvement. Therefore, the recommendations for allergen avoidance can raise difficulties and be controversial: some recommend avoiding only the fruits to which the patient reacted; others suggest a more restrict diet, with other fruits and vegetables, including those from taxonomically different species, especially those to which the patient has positive SPT. Negative OFC can be insufficient for dietary liberalization as asymptomatic sensitizations can become clinically relevant in the future.

1050

Atypical fruit allergy in a pollen allergic patient

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Background: Allergy to fruits and vegetables in patients with pollinosis is attributed to the existence of ubiquitous panallergens in plants, with subsequent cross-reactivity. In patients with reactions to multiple

foods, the use of ImmunoCAP ISAC^R and immunoblotting assays represent complementary *in vitro* methods to characterize the molecules involved.

Patients and Methods: We describe the case of a 38 years old female patient, with a history of persistent allergic rhinitis and asthma since childhood, with symptoms of oral allergy syndrome and wheezing immediately after the ingestion of hazelnut, peach and apple. Skin prick tests (SPT) were performed to aeroallergens and plant food allergens. Specific IgE, immunoblotting assays and ImmunoCAP ISAC^R were also carried out to characterize the molecules involved.

Results: SPTs and Specific IgE were positive to *Betula verrucosa*, peach, apple and cherry. Immunoblotting assays showed a 16.48 kDa IgE binding band in *Betula verrucosa*, 19.33 kDa band in peach and no bands in apple. ImmunoCAP ISAC^R was positive to Bet v1, Aln g1, Mal d1, Cor a1, Api g1 and negative to Pru p3.

Discussion and Conclusion: The severe clinical presentation with bronchospasm suggested the involvement of an LTP, typical of Mediterranean countries. ImmunoCAP, ISAC^R and the immunoblotting assays confirmed instead a PR-10 analogues cross reactivity (Bet v1/Mal d1). We emphasize that this pattern is rare in Portugal and is also not usually associated with severe symptoms, as in this patient.

1051

Oral allergy syndrome due to strawberry

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Background: Fruits from the *Rosaceae* family have been increasingly reported as causes of allergic reactions. Patients frequently have positive skin test results for multiple members of this botanical family. Despite the increasing use of strawberries in culinary recipes, allergy to this fruit has rarely been described.

Methods: A 32 years old woman, resident in Madrid, was seen in our clinic with rhinorrhoea, tearing, and serial sneezing that she presented in spring since 10 years ago; no asthma symptoms were referred. Besides, she described oropharyngeal tingling, tongue swelling feeling (not real) and pharyngeal pruritus every time she ate strawberry, although this didn't happen with other fruits or nuts. The study was based on skin test [prick-test (SPT) and prick-prick test] with standard pollen battery for Madrid, various fruits and nuts, and analytical determination of specific IgE serum antibodies to these foods.

Results: SPT with standard battery of inhalants allergens: positive Cupressus, Platanus, Olea, Lolium, Secale, Plantago, Artemisia, Phragmites and Salsola. Negative to LTP and profilin. SPT with commercial fruit extracts were negative. Prick-prick test with Peach, Apple, Pear, Orange, Banana, Pineapple, Grape, Plum, Tomato, Walnut, Almond, Peanut, Cashew, Hazelnut and Latex were also negative. Positive only with Strawberry. Specific IgE serum antibodies were negative for all fruits. Double-blind placebo-controlled food challenge was performed, and the patient presented oropharyngeal pruritus with no visible skin lesions.

Conclusions: We report a case of oral allergy syndrome to strawberry, with no sensitization to other *Rosaceae* fruits.

1052

Mugwort-celery-carrot-curry syndrome: a case report

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Background: We report the case of a 22-year-old man that started suffering from recurrent episodes of anaphylaxis, following the ingestion of meals containing mixed foods. The patient had no history of asthma or rhinitis related to airborne allergens. When he was 20 years old the first episode of generalized urticaria and angioedema, hypotension and blurred vision occurred after ingestion of pizza. Six months later another episode occurred after ingestion of meatballs and spaghetti. At 21, the same symptoms occurred after ingestion of spicy food. Interestingly, all the systemic episodes developed 30–60 min after exercise. The possibility of a cross-reactive celery-carrot-spicy syndrome was suspected as all meals contained these plant foods. Self-administered adrenaline was prescribed and the patient was advised not to exercise at least 2 h after eating. No more anaphylactic episodes occurred since then.

Methods: Skin prick tests (SPT) to commercial extracts of aeroallergens and foods allergens were carried out. Prick-to-prick tests (PP) and serum specific IgE determinations (sIgE) to some plant foods were also performed, according to case history. The molecular mass of the IgE binding bands was calculated by means of SDS PAGE immunoblotting. In order to study the presence of cross reacting specific IgE we carried out a SDS-PAGE immunoblotting-inhibition assay using the celery root extract as solid phase and the extracts from