PP129

Fish allergy in an aquarium worker

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Background: Fish is one of the most frequent causes of IgE-mediated food allergy in children in Portugal and rarely begins in adults. Allergy to fish in adulthood can be caused by an occupational exposure.

Case Report: The authors describe the case of a 29 years old women, with an unusual work (since age of 23): animal handler at an Aquarium, she prepares raw fish (capelin) to feed amphibious without use of personal protection measures (gloves) and also dives in the tanks for cleaning. She has personal history of rhinoconjunctivitis since adolescence and hand eczema since three years ago. In the last two years she started having episodes of facial/lip angioedema and/or nausea/vomiting and the last one with stridor and dyspnea, always after the ingestion of cooked fish meals. Contact urticaria to jellyfish and corals was also reported. Skin prick tests (Bial - Aristegui, Bilbao, Spain) were positive to: codfish, axillary seabream, striped red mullet, pilchard, gilt-head bream and seatrout; negative to: tuna fish, sole, hake, morkfish and salmon. Prick by prick tests were positive to: raw hake, raw and cooked gilthead seabream and raw capelin (the food fish); negative to: cooked hake. Total serum IgE of 727 Ul/mL. Specific serum IgE (UniCAP®, Thermo Fisher Scientific, Uppsala, Sweden) were weakly positive to: codfish (0.19KU/L), hake (0.11 KU/L), salmon (0.16KU/L), pilchard (0.13KU/L) and sole (0.29KU/L); negative to: swordfish.
She tolerates tuna fish and salmon and eats them regularly. Nevertheless, avoidance of ingestion of other fishes as well as direct fish handling only with personal protection measures were recommended in order to keep on the actual job.

Clinical Relevance: Allergic sensitization to fish in adulthood is unusual. There are reports suggesting that sensitization to food allergens may occur outside the intestinal tract, namely through the skin. It is likely that in this case, the fish sensitization has occurred by repeated skin contact with raw fish in the context of occupational exposure.