

atopy is higher for children of atopic mothers than for those of atopic fathers (7). A major gene regulating serum IgE has previously been mapped to chromosome 5q31-q33 (8).

Although the cause of KD remains unknown, the presence of an infectious agent has been suggested by the epidemiologic and clinical features of the illness (9). Recently, it has been reported that T helper (Th)1 and Th2 subsets are implicated in the regulation of many immune responses. Some infectious agent might influence Th1 and Th2 balance, leading to the development of allergic diseases.

Previous studies have found no consistent association between HLA antigens and KD, but some reports of sibling cases (3) and two-generation cases (10) suggest the presence of a yet unidentified genetic basis for disease susceptibility. Younger children are thought to be influenced more by the genetic factor than by the infectious agent. KD patients might maternally inherit some aspect of the immune response that is also shared by patients with atopic conditions. Further work is necessary to clarify the actual relationship of KD to allergy.

Key words: allergic disease; Kawasaki disease.

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A strange case of "tuna allergy"

A 19-YEAR-OLD boy presented at this allergy department in September 1997 with a clinical history of several episodes of angioedema of the penis and scrotum from the age of 4 to the age of 8 years; all these episodes took place about 2 h after the ingestion of different brands of tuna canned in olive oil. The patient had tolerated this food well from the age of 8 up to the age of 17 years, when intolerance of canned tuna in olive oil reappeared; in the last months, such food induced several episodes of angioedema of the lips, hands, and/or penis/scrotum. The patient never experienced similar episodes after the ingestion of other foods, and he tolerated all other fish (sole, cod, trout, etc.) well. He did not suffer from respiratory allergy, as shown by negative clinical history and negative skin prick test (SPT) with commercial extracts of the most common airborne allergens present in this geographic area. Moreover, he did not report any drug-induced adverse reaction.

The patient underwent SPT with a large panel of commercial food extracts (Bayer), which included tuna, cod, salmon, and olive oil; no reactivity was observed. After informed consent was obtained, an open oral challenge with increasing doses of fresh cooked tuna was carried out; the boy

A patient with suspected tuna allergy was found to have tartrazine intolerance.

tolerated up to 80 g of tuna without consequence. In view of these findings, double-blind, placebo-controlled, peroral challenges with a large spectrum of food additives were

carried out (substances and doses are summarized in Table 1). Challenges were performed by established procedures (1-3) with some modifications. Increasing doses of each food additive (or placebo) were given at 1-h intervals up to the maximum scheduled dose unless a positive response was obtained. Consecutive substances were tested 1 week apart. All preparations were given in identical opaque capsules prepared by the local hospital pharmacy. At each provocation session, the patient spent at least

Table 1. Food additives tested and provocative doses

Sodium benzoate (E211): 50, 200 mg
Sodium metabisulfite (E223): 10, 25 mg
Tartrazine (E102): 5, 10 mg
Erythrosine (E127): 5, 10 mg
Sodium glutamate (E621): 100, 200 mg
Sodium nitrate (E251): 10, 100 mg
Sorbic acid (E200): 50, 200 mg
Butylated hydroxyanisole (E320): 10, 50 mg

2 h after the last provocative dose under observation at the allergy center.

The patient developed systemic urticaria and angioedema of the lips and hands about 2 h after the administration of 10 mg of tartrazine. Symptoms were easily controlled by antihistamine therapy. All other substances were tolerated.

The labels of several brands of tuna canned in olive oil were scrutinized: none reported tartrazine among the ingredients. Nonetheless, the causative role of canned tuna was unequivocal in this patient, and true fish allergy was excluded by SPT and oral challenge with fresh tuna. A nonspecific reaction to tartrazine is possible but unlikely. Thus, the only reasonable explanation of these findings is that significant amounts of this azo dye are present (but not declared) in some commercial preparations of tuna canned in olive oil; in effect, fish is included among foods to which azo dyes and benzoates are often added (1). It remains unclear why all the episodes of angioedema followed the ingestion of canned tuna in this patient; differences in tartrazine content among various preserved foods, as well as the patient's alimentary habits, might explain this effect.

Food-additive intolerance should always be considered in patients who experience repeated episodes of urticaria/angioedema after the ingestion of specific commercial food preparations, even if these are generally considered additive-free.

Key words: food-additive intolerance; tartrazine.

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Drug-induced papulovesicular exanthema

DELAYED skin reactions, such as maculopapular exanthema to penicillin antibiotics, are common (1). However, the pathogenesis of these skin eruptions is unknown. Histology and the positive lymphocyte transformation test (LTT) indicate an immunologic mechanism in most of these cases (2, 3). Here we report on a long-lasting, generalized papulovesicular skin reaction following skin testing with penicillin preparations.

A 68-year-old Caucasian housewife reported generalized exanthema after parenteral injection of penicillin G 29 years before, which persisted for several weeks, in spite of discontinuation of therapy. As she changed her doctor, she was sent to re-evaluate the state of her drug allergy.

Sequential skin tests (scratch followed by intradermal testing) using commercially available extracts (0.05 ml PPL [0.025 mg/ml] and 0.05 ml MDM [0.6 mg benzylpenicillin/ml, 0.5 mg di-natrium-benzylpenicilloate/ml], both Allergopharma, Reinbeck, Germany) were performed on the volar side of the forearms. Results were recorded 15 min after testing and compared to the positive (1 mg/ml histamine diphosphate) and negative controls (phosphate-buffered saline [PBS]). Because of negative results, scratch patch skin tests were performed with penicillin G (200 000 U/

ml PBS), amoxicillin (750 mg/ml PBS), and PBS in the same session. After removal of the patch tests 24 h later, erythematous induration was noted at the site of the intradermal injection of PPL and MDM solution and at the patch test sites of penicillin G and amoxicillin. Over the next 2 days, vesiculopapular exanthema developed, spreading

Generalized papulovesicular exanthema induced by skin testing with penicillin preparations: an antigen- independent, T-cell- mediated, reactive, autoimmune process?