



Fig. 2. Reticulate appearance of the rash on the thigh.

Closed patch tests with 3% Vioform are uniformly negative. The by-products present in commercially available Vioform (5-chloro-7-iodo-8-hydroxyquinolone) powder and proprietary Vioform-Hydrocortisone* are listed in Table 1.

Commercial Vioform is, therefore, less refined than the Vioform contained in proprietary Vioform-Hydrocortisone*. It is possible that an impurity is the cause of the eruption seen in our hospitalized patients, as we are not aware of reports of similar reactions to the proprietary preparation.

Comment

We report an irritant contact reaction pattern from Vioform, whose morphology is so distinct that an immediate diagnosis can be made. We are not aware of similar reports, but irritant contact dermatitis from clioquinol is reported and was thought to be dose-related when studied by Kero et al. (1). The latter noted contact allergy to clioquinol in 35 (2%) of 1756 consecutive patients attending for patch testing and an irritant reaction in 7 (0.4%). In all 7 of their patients, the rash affected the perineum, although they did not describe the nature of the eruption.

Reference

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Protein contact dermatitis associated with food allergy to fish

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In protein contact dermatitis (PCD), sensitization is effected through the skin by protein allergens (1).

Case Report

A 24-year-old biology student had a history of both nickel dermatitis and atopic dermatitis. At 1 year of age, after eating white fish, he had experienced a generalized

popular erythematous eruption, with edema of the eyelids and lips, dysphagia and dyspnea. On 2 recent occasions, approximately 15 min after handling trout in the biology laboratory, he had developed a popular pruriginous erythematous eruption on the dorsa of both hands, the finger webs and wrists. Physical examination and routine laboratory analyses were normal: IgE was 77 KU/l.

Table 1. Test results

	Prick test	'Prick-prick test'	Open patch test	Rub test	RAST	HRT
cod	positive 1/1000 w/v	positive	negative	positive	class 2	positive
sardine	positive 1/40 w/v	positive	negative	NT	class 2	negative
shrimp	negative	positive	negative	NT	negative	negative
mussel	negative	negative	negative	NT	negative	negative
oily fish mixture	NT	NT	NT	NT	class 2	NT

Methods and Materials

Preparation of extracts

Extracts of cod, sardine, shrimp and mussel were prepared: after cooking, 20 ml of phosphate-buffered saline (PBS; pH 7.4) was added to 2 g of each food. After 60 min agitation at room temperature, samples were paper-filtered. Part of each filtrate was dialyzed in PBS for 24 h at room temperature in a shaker water bath. Both solutions were filtered through a 0.45 μ gauge filter (Millipore), resulting in a final concentration of 1/10 (w/v). Final protein content of extracts was assayed (BioRad, Munich, Germany): cod 84 mg/dl, sardine 36 mg/dl, shrimp 85 mg/dl and mussel 77 mg/dl. Extracts were diluted in PBS for subsequent use.

Prick tests

Prick tests were done with standard inhalants (Merck Igoda, S.A.) and the prepared extracts. Fresh cod, sardine, shrimp and mussel were tested using a 'prick-prick test', which consisted of puncturing the food with the lancet immediately before pricking the skin of the patient. Histamine phosphate (10 mg/ml) was the positive control, with saline solution and PBS (pH 7.4) as negative controls. Readings were made after 15 min, a wheal ≥ 3 mm in diameter being considered positive (2). 4 atopic individuals served as controls.

Open patch tests

Dilutions of 1/40 and 1/200 (w/v) were prepared from the extracts. Fresh cod was also employed. 0.5 ml of each dilution and 1 g of fresh cod were placed on the patient's upper back; readings were made 20 min later.

Rub test

The skin on the back of the patient's hands was rubbed with fresh cod for 20 s. The skin was examined every 15 min for the next 1 h. 4 atopic individuals served as controls.

Histamine release test (HRT)

The automatic fluorometric method used was that of Siraganian (3) as later modified (4). Commercial cod, sardine and shrimp antigens (Bencard, Worthing, UK), and our mussel extract, were employed. 4 successive dilutions (1/5, 1/25, 1/125 and 1/625) were made from the original extract. A release of more than 10% over basal value was considered positive. 4 atopic individuals served as controls.

Determination of specific IgE by RAST (radioallergosorbent test)

A standard RAST technique was used (Phadebas RAST, Pharmacia, Uppsala, Sweden) for cod, sardine, shrimp, mussel and mixture of oily fish.

Results

On prick testing, positive reactions were obtained to the cod and sardine extracts at 1/1000 and 1/40 (w/v), respectively (Table 1). No delayed reactions were seen. Prick tests with the rest of the extracts and the standard panel were negative. The 'prick-prick test' was positive to cod, sardine and shrimp, and negative to mussel. The rub test was positive to cod, which produced a pruriginous erythematous eruption after 10 min, starting between the 4th and 5th fingers of the left hand and spreading over the dorsa of both hands. Controls were negative. The HRT was positive to cod. RAST was positive (class 2) to cod, sardine and the mixture of oily fish. Controls were negative. Open patch tests were negative at 20 min.

Discussion

Seeberg (5) described immediate contact dermatitis on the hands from foods, Hjorth & Roed-Petersen (1) providing a more complete report of this clinical entity, terming it "protein contact dermatitis", and characterizing it as an uncommon disorder in nonatopic food handlers, veterinarians and abattoir workers. Pruritus, erythema, urticarial inflammation or tiny vesicles appear on the fingers and backs of the hands 15 to 30 min after contact. Protein contact dermatitis can present without urticarial eruption, or can follow repeated contact urticaria (6).

Other authors, including Maibach (7) and Kavli & Moseng (8), have affirmed that this type of dermatitis is more common in atopic subjects, with fish being one of the most frequent causes (9). Histological and immunohistological alterations have been reported in apparently normal skin affected by protein contact dermatitis (10). This disorder may be the result of an IgE-mediated continuous Type I reaction in the skin, but Langerhans cells could also play a rôle (11).

The case we report here concerns an atopic patient with food allergy to white and oily fish, associated with a protein contact dermatitis in which an IgE-mediated

immune mechanism was demonstrated. This confirms that fish can be the causative agent in immediate contact dermatitis in atopic individuals.

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