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Contact sensitization to cloxacillin with oral tolerance to other β -lactam antibiotics

P. GAMBOA, I. JAUREGUI, I. URRUTIA, G. GONZÁLEZ AND I. ANTÉPARA

Sección de Alergia-Immunología, Hospital de Basurto, Avda. Montevideo 18, 48013 Bilbao, Spain

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Contact dermatitis due to betalactam antibiotics is an uncommon problem nowadays, since topical medicaments containing them are no longer available in many countries, though occasional sensitization among health care personnel remains possible (1, 4).

Case Reports

Case no. 1

A 31-year-old woman, working as a fish deliverer, with an ulcer on her right ankle, applied the antibiotic cloxacillin (Orbenin[®], SmithKline Beecham) to it from the vial for injection, and 8 h later, developed vesiculation and erythema at the site of application, as well as erythematous, exudative papules and vesicles on the face and upper thorax, with scaly resolution within 1 week of treatment with corticosteroids and antihistamines. She had had a similar, though less severe, episode 1 year earlier, after several days of similar topical use of Orbenin[®] vials for injection on the ulcer, following the directions of a vascular surgeon.

Case no. 2

A 47-year-old woman (following the directions of the same surgeon) also made topical use of Orbenin from vials for injection, on vascular ulcers and her lower extremities, and after 4 days of treatment, developed intense pruritus, erythema and vesicles at the site, as well as facial oedema. The symptoms improved within 1 week with systemic corticosteroid treatment.

Standard patch tests (TRUE TestTM, Pharmacia, Uppsala, Sweden) were negative in both cases. Intradermal tests with benzylpenicillin (5000 IU/ml), benzylpenicilloyl-polylysine (PPL) (10^{-5} molar) and minor determinant mixture (MDM) (monosodium benzylpenicillin 0.6 mg/ml+disodium benzylpenicilloate 0.5 mg/ml), the latter 2 from Allergopharma[®], Hamburg, Germany, were also negative at immediate and 1-day readings in both cases. Patch test were made with β -lactam antibiotics in water: sodium benzylpenicillin (100 IU/ml), and ampicillin, amoxycillin, cephalothin, cephalazolin,

ceftazidime, cefotaxime, cefuroxime, and ceftriaxone (all the latter at 50 mg/ml) with negative results up to D5 in both patients.

In case no. 1, a patch test with cloxacillin (50 mg/ml in water) was positive (+++) from D1 onwards, and was accompanied by widespread skin lesions involving both ears, neck and upper thorax, as well as the skin surrounding the leg ulcer. The patient required treatment with oral corticosteroids for several days for resolution. In case no. 2, the same patch test with cloxacillin was also positive (+++) from D1 onwards. 2 controls were negative. With the informed consent of the patients, oral challenge tests with amoxillin 500 mg and cefaclor 500 mg were carried out, without any adverse reactions, either immediately or over the next days.

Discussion

We report allergic contact dermatitis from cloxacillin in 2 women not in the health professions (2). The origin of such sensitization was the unconventional topical use of the content of the vial intended for parenteral use. According to a Medline[®] 1966-1995 search, cloxacillin is an uncommon contactant, with no reports in the literature. Fisher (2) reports dicloxacillin as a possible contactant, although no references are given. Toxic epidermal necrolysis was the only severe adverse skin reaction found attributed to cloxacillin (3). Our patients seem to be sensitized to cloxacillin specifically, without cross reactivity to other penicillins, as is usual in Type IV hypersensitivity reactions to β -lactam antibiotics (2, 4, 5). This lack of cross-reactivity of cloxacillin with other β -lactam antibiotics is also reported in laboratory animals (6).

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Coexistence of type I and type IV allergy to rubber latex

FABRIZIO PLACUCCI¹, COLOMBINA VINCENZI¹, GABRIELE GHEDINI², GABRIELA PIANA² AND ANTONELLA TOSTI¹

Departments of ¹Dermatology and ²Dentistry, University of Bologna, Via Massarenti 1, 40138 Bologna, Italy

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Contact urticaria and anaphylactic reactions can occur when those with type I hypersensitivity to natural rubber latex undergo surgery and/or clinical examination.

Case Report

On 23 November 1994, a 6-year-old boy was referred to our department, because, on the 8th of the same month, he had developed oedematous dermatitis on the left side of his upper lip, approximately 30 min after contact with latex gloves and a rubber dam used during conservative dentistry. His mother reported that 3 months previously, he had had an episode of widespread urticaria, the cause of which remained unknown. His history also included Alagille syndrome, a congenital arteriohepatic dysplasia, because of which he had undergone several liver operations, and finally liver transplantation at age 3 years. Since that time, he had been taking cyclosporin A (CyA) (4 mg/kg/daily) and prednisone (2 mg every other day).

Prick tests were performed on the forearm for rubber dam and latex gloves. We prepared prick test solutions by placing 20, 1 cm × 1 cm natural rubber latex glove squares in 5 ml of sterile physiological saline for 30 min. The same procedure was followed with the rubber dam. Finally, 10 mg/ml histamine dihydrochloride and physiological saline were used as positive and negative controls. Readings were made at 20 min and were scored as +, ++ and +++ (same as the histamine response). Results: rubber dam +++; latex glove +++. Subsequent RASTs revealed high levels of allergen-specific IgE for latex, thus confirming our diagnosis of type I allergy to latex. The RASTs were performed using 125 I-labeled anti-IgG (Pharmacia, Piscataway, NJ).

Patch tests with the GIRDCA standard series (Trolab-Hermal), a rubber series (Trolab-Hermal) and pieces of rubber dam and latex glove, showed positive reactions to latex glove and rubber dam at days 2 and 3.

20 young volunteers were used as a control group for the patch and prick tests, the results in all 20 volunteers being negative.

Discussion

Allergic contact dermatitis from natural rubber latex, from the rubber tree (*Hevea brasiliensis*; Euphorbiaceae), is most frequent in 3 high-risk groups: those with irritant contact dermatitis; those with atopic dermatitis; and those children with spina bifida (1–7). In our case, although clinical examination of the patient did not show any eczematous lesions, patch testing revealed positivities to latex gloves and rubber dam. No positive reactions were observed to any of the rubber chemicals included in either the standard or rubber series.

Our patient's multiple operations during infancy exposed him more frequently than usual to latex gloves and he can therefore be placed in a high-risk group for developing sensitization to natural latex (1). What is unusual about the case is that both type I and type IV allergies to natural latex arose, and while the patient was taking systemic CyA and corticosteroids.

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