

CLINICAL REPORT

Systemic Contact Dermatitis from Herbal and Homeopathic Preparations Used for Herpes Virus Treatment

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Systemic contact dermatitis may occur in contact-sensitized individuals when they are exposed to haptens orally, transcutaneously, intravenously or by inhalation. We report the case of a woman developing a diffuse skin eruption after the topical use of Rhus toxicodendron alcoholic extract and the oral introduction of a homeopathic preparation of the same substance for herpes treatment. An open test, performed with the Rhus toxicodendron tincture, showed an erythematous response at 48 h and vesicular reaction at 96 h that was still present after 7 days. Patch test with 65% ethyl alcohol gave negative results. The open test performed, as control, in eight healthy informed subjects revealed negative responses to Rhus tincture application. The result is interesting because in Italy, allergic contact dermatitis to Rhus is uncommon and this case increases the understanding of the pathogenetic mechanism leading to systemic contact dermatitis development. Key words: homeopathy; plant extracts; mother tincture; Rhus toxicodendron; herpes virus infection.

(Accepted November 10, 2003.)

Acta Derm Venereol 2004; 84: 223–226.

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Homeopathy is becoming one of the leading complementary ways to treat health problems, especially when conventional medicine provides only limited relief and does not completely solve the patient's problem. Homeopathic intervention has been shown to lead to a modest but significant reduction in the use of medications commonly used to treat different allergic conditions (1), even when this employment is associated with considerable costs (2).

In one study the effectiveness of a homeopathic complex has been surprisingly proven to prevent recurrences of genital herpes (3). Homeopathy, together with Chinese herbs, massage therapy and hypnotherapy, has been used in the treatment of childhood eczema (4), even though the side-effects of these remedies are not extensively reported (5).

Allergic contact dermatitis due to Rhus toxicodendron, in a phytotherapeutic preparation, has been described already in two patients. One had used it as an ointment for the treatment of musculoskeletal aches and the other for herpes lesions on the upper lip (6).

We report here the case of a woman who developed a diffuse skin reaction after the topical use of an alcoholic extract of Rhus toxicodendron and the oral introduction of a 7CH preparation in pellet form of the same substance (see Discussion for explanation of the homeopathic nomenclature).

CASE REPORT

A 45-year-old woman was admitted to our department with an acute and widespread eczematous dermatitis. In her past history, she complained of recurrent herpes virus infection of the lips and genitals. Fifteen days before the appearance of the diffuse eruption, having noted the presence of a group of vesicles on the right thigh and on the vulva and presuming them to be herpes virus lesions, she had applied the alcoholic solution (mother tincture) of Rhus toxicodendron. The patient had been treating the recurrent herpes virus lesions with this tincture for more than 10 years. The remedy was prescribed by a qualified homeopath but can be bought over the counter.

After having used this tincture locally for 10 days, she had also taken 7CH micropellets of the same substance (3–5 micropellets several times a day for 4 days). Three days before admission in our clinic, while she was still using these remedies, she reported that an erythema, initially limited to the sites of application of the tincture, had extended to the other thigh and to the forearms, neck and face.

Upon examination, the patient showed a bright erythema with distinct boundaries that involved the pubic region, the inguinal area and the inner surface of the thighs. Figurative satellite lesions were evident in the hypogastric region at the edge of the pubic erythema (Fig. 1). A digitate lesion was evident on the proximal area of the left thigh. On the flexor surface of the right thigh, a non-erythematous area was evident with a cigarette-paper wrinkling-like appearance of the skin where the patient had first applied the homeopathic product (Fig. 2a). A round erythema with partial



Fig. 1. Bright erythema with distinct limits involving the pubic region, the inguinal area and the inner surface of the thighs together with figurate satellite lesions.

central clearing, resulting in a large target lesion and simulating erythema multiforme (EM), was present on the inner and extensor surface of the left thigh (Fig. 2b). Wheals arising on an erythematous base were noted on the flexor surface of the right forearm (Fig. 3). Erythematous-infiltrated skin lesions were also detected on the neck, the right retroauricular area, and the right side of the forehead and face. A small erythematous area was evident between the fingers. The visible mucosae were uninvolved. She had no history of drug allergies or atopy.

Laboratory investigations revealed leucocytosis ($>10 \times 1000/\text{mm}^3$), elevated anti-herpes virus IgG antibodies and normal IgE serum levels.

Histopathological examination of a skin biopsy obtained from a lesion of the forearm showed a focal spongiosis of the epidermis, a dermal oedema associated with perivascular and interstitial lymphomonocytic infiltrate with neutrophils and eosinophils in the superficial dermis.

During hospitalization, the patient was treated with prednisone per os (25 mg/daily) that was progressively tapered when she was at home. After a few weeks a significant improvement of the cutaneous manifestations followed.

Two months later after remission of skin eruption, the patient underwent allergological investigation. Patch tests, carried out with the Italian standard series (widened) adopted by the Società Italiana di Dermatologia Allergologica Professionale e Ambientale, revealed positive reactions to balsam of Perù 25%, fragrances mix 8% and Dermatophagoides mix 30% (in petrolatum, Chemotechnique Diagnostic). Patch tests were left in place for 48 h and readings were carried out at 96 h and 7 days after application.



Fig. 2. (a) Non-erythematous area with a cigarette-paper wrinkling-like appearance of the skin on the flexor surface of the right thigh. (b) Round erythema with partial central clearing resulting in a large target lesion on the inner and extensor surface of the left thigh.

An open test was performed on the flexor surface of the left forearm with the *Rhus toxicodendron* tincture



Fig. 3. Wheals arising on an erythematous base were noted on the flexor surface of the right forearm.



Fig. 4. Open test with *Rhus toxicodendron* tincture 7 days after application.

as it was. At the site of application we observed an erythematous-oedematous response at 48 h, and a vesicular reaction at 96 h that was still present after 7 days (Fig. 4). Patch test with ethyl alcohol 65% gave negative results. As control, an open test was performed in eight healthy subjects revealing negative responses to the application of *Rhus* tincture.

DISCUSSION

Toxicodendron radicans (poison ivy), *T. vernix* (poison sumac), *T. diversilobum* and *T. toxicarium* (poison oak) are four species of the genus *Toxicodendron* (formerly classed as *Rhus*) belonging to the Anacardiaceae family and are widely distributed in North America. Up to 50% of the North American population is in fact sensitized to urushiol, an oleoresin containing penta- and hepta-decylcatechols that are potent contact allergens (6–8).

The acute dermatitis caused by poison ivy is characterized by a linear arrangement of the lesions that is typical of phytodermatitis acquired by inadvertent contact with the plant and is often caused by a transfer of the antigen from the hands or fingers to the affected area. Consequently, one sees streaks from finger transfer, broader localized involvement of areas from rubbing, and sometimes even handprints in a mitten pattern.

Occasionally urticaria and eruptions resembling EM are observed. Fomites (clothing, animals, tools, etc.) that are contaminated with the oleoresin may remain allergenic for a long time.

In our case, the herbal remedy had been used both as a mother tincture and as granular preparation per os. According to the information obtained from the manufacturer, the preparation of the mother tincture was according to the homeopathic rules. In other words, the fresh plant is macerated in 65% ethyl alcohol for 15 days. No colouring or preservative

ingredients are added. In preparing the pellets, one drop of mother tincture is diluted in 100 drops of 70% alcohol. The bottle containing the diluted solution, according to the known process of 'dynamization', is shaken with 100 strong and rhythmical bumps. The first dilution is indicated with the abbreviation 1CH where the letter 'C' is for centesimal and 'H' for Hahnemann, the Saxon doctor who created the homeopathy. The homeopathic granules orally introduced by our patient were obtained from the 7CH dilution of the tincture that was used to impregnate granules formed by lactose and saccharose.

In fact, according to the principles of homeopathy, a substance producing certain symptoms in normal concentrations is diluted many-fold in order to produce a preparation that can be used to treat those same symptoms. Clearly, as the species of the genus *Toxicodendron* can produce a weeping vesicular rash, it was on this basis the rational choice of a substance as the *Rhus toxicodendron* extract from which to prepare a homeopathic remedy for treating symptoms such as those seen with herpes infections.

Recently, the clinical and histopathological characteristics of systemic contact dermatitis (SCD) due to the ingestion of raw sap from lacquer trees (*Rhus verniciflua*, *R. trichocarpa*, *R. javanica*) have been described in 31 patients from Korea where *Rhus* is ingested to treat gastrointestinal problems, including ingestion and gastritis, and as a health food, in cooked meat (especially chicken), in herbal medicine, or taken by inhalation (9).

The patients with SCD to *Rhus* developed different cutaneous lesions such as a maculopapular eruption, EM, erythroderma, pustules, purpura, wheals and blisters. They all experienced generalized or localized pruritus together with systemic effects such as gastrointestinal problems, fever, headache, leucocytosis with neutrophilia (9). The same skin lesions were observed in another very recent Korean study on 42 patients with SCD from ingestion of *Rhus* (10).

Park et al. (11) have obtained a 40% positive patch test result in patients with a known history of allergy to *Rhus toxicodendron* and a 12% positivity in patients without previous recollection of contact with the plant. This means that, if ingested, lacquer can cause SCD in a patient without a known history of contact allergy (9).

Our case can be considered as a SCD due to *Rhus toxicodendron*, in which the mechanism responsible for sensitization was probably related to the recurrent application of the tincture on the skin. Although patients with dermatitis due to *Rhus* may develop a lot of skin lesions resembling EM (12), urticaria or a maculopapular eruption, we believe that the oral intake of the homeopathic substance led to the diffusion of the skin eruption beside the sites of tincture application. Even if the

concentration of the homeopathic drug contained in the oral preparation was very low, it is known that elicitation of the dermatitis, after extremely low doses, cannot entirely be excluded in contact-sensitized individuals.

In fact in such patients, a systemically administered allergen may reach the skin through the circulation and produce widespread involvement of it with eruptions resembling eczema, maculopapular rash, urticaria and rarely EM or vasculitis (13). However, a SCD may also occur in sensitized individuals when they are exposed to some haptens transcutaneously or by inhalation (14). A systemic Rhus uptake due to its dermal penetration through the epidermis should also be considered in this case. We believe that only oral re-exposure of the patient to Rhus without concomitant topical application of this remedy could distinguish whether the elicitation of the dermatitis was really caused by the oral intake of the allergen or was related to its transcutaneous absorption.

It must be borne in mind that the oral administration of a specific allergen is able to induce a state of systemic immunological unresponsiveness specific to that, termed 'oral or mucosal tolerance' that is the opposite of sensitization (15).

We believe that the induction of oral tolerance has not occurred in our case, probably because of the sporadic ingestion of the homeopathic granules that were taken in doses presumably not capable of developing the defensive mechanism of mucosal immunity.

The case has also been reported for the rareness of the allergen in Italy, where it is uncommon to observe any allergic contact dermatitis to Rhus toxicodendron, unlike in the USA where more allergic contact dermatitis is due to poison ivy than to any other cause.

The diffusion of homeopathy is increasing, and successful use of this medicine is reported in sporadic cases in the literature (16–18). As the efficacy of homeopathic medicines is not really proven in most cases, we believe that further investigations should be performed in order to discover any unwanted effects (19, 20).

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