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Case Report

Contact Dermatitis Caused by Ginkgo

Abstract

We reported a female with a delayed-type allergic skin reaction caused by ginkgo nuts and trees. Patch tests showed positive reactions to ginkgo extracts and ursiol. The sensitized stage of her contact dermatitis might involve taking a walk or picking up gingko nuts, and the provocation stage might occur when walking along the street.

Background

Ginkgo trees and maples are well known for their colorful autumn leaves, and many people in Japan enjoy seeing them in the autumn. Gingko trees produce a lot of nuts (fruit), and many people pick up these nuts when viewing ginkgo leaves in the autumn. The ginkgo nuts (fruit) are known to cause allergic contact dermatitis or to irritate the skin [1,2]. In 1963, there was an epidemic of 35 cases of contact dermatitis due to ginkgo trees and fruit among students [3]. There have been many similar epidemics in the world. When students go to school, they take the same route every day. The roads often run beneath ginkgo trees, and students trample the ginkgo nuts in season. Here we describe a female case of contact dermatitis provoked by walking along a street lined with ginkgo trees.

Case

A 70-year-old female, homemaker, developed erythema with vesicles on her face, neck and arms (Figures 1a,b). She took a walk every day along a street lined with ginkgo trees. A few days before she came to us for treatment, she picked up fallen gingko nuts from the street using her bare hands. One day later, she developed eruptions with itching on her cheeks, neck and arms after walking along the street with ginkgo trees without contacting the gingko trees or fruit. We treated her as a case of contact dermatitis due to ginkgo nuts or trees based on our interview with her. She underwent patch testing using Finn Chambers on Scanpor (Smart Practice Japan) according to the ICDRG criteria (readings were 48 and 72 hours later). Test materials were gingko extract (TORII PHARMACEUTICAL CO., LTD.) 10% pet. And urusiol (TORII PHARMACEUTICAL CO., LTD.) 0.002% pet. The results showed positive reactions to ginkgo extract and ursiol (48h / 72h; ++/ ++) (Figure 2). Laboratory data were in the normal range. We recommended that she did not eat ginkgo fruit or walk close to ginkgo trees.

Discussion

In Japan, many ginkgo trees grow along the street. Ginkgo trees are the world's oldest trees, and the leaves of ginkgo trees change color

Figure 1a: Clinical findings of dermatitis on the face.

Figure 1b: Clinical findings of dermatitis on her arm.

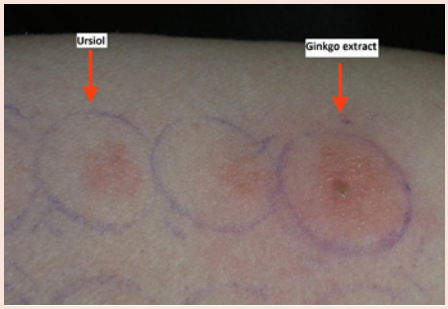

Figure 2: The results of patch testing.

depending on the season. Ginkgo trees are tolerant of pollution, and thus can thrive when planted along the street [2,4]. In the autumn, many people in Japan walk along streets with ginkgo trees to see their colorful leaves or pick up fallen gingko nuts for eating. Ginkgo nuts contain the ginkgo fruit, which can cause allergic reactions or irritation [1,2]. Most people in Japan know that ginkgo fruits contain substances that can easily cause a skin rash. The allergenicity of ginkgo results from contact with the fresh part of the ginkgo fruit [2]. It was interesting that our patient developed a skin rash when walking along the street without contacting ginkgo nuts or fruits. We speculated that her skin rash may have been caused by inhaling ginkgo pollen or ingredients of the ginkgo fruit, or that she was splashed by crushed ginkgo fruits that she trampled underfoot. She could have been sensitized by picking up ginkgo nuts or taking a walk, and the provocation stage might have occurred by walking. This case could be an airborne contact dermatitis due to Ginkgo.

There have been several previous reports on the allergens in ginkgo fruit. There is no type 1 allergen in ginkgo extracts [5]. Ginkgo 1 is the main allergen of Ginkgo biloba L. [6], but there are other possible ginkgo allergens such as salicylic acid and ginkgolic acid [2]. These allergens were related to the pentadecylcatechols (catechols with a C15 side chain) of poison ivy [2], as shown in a previous report that found cross-reactivity between ginkgo fruit and poison ivy [7]. Because the structure of ginkgolic acid is similar to that of anacardic acid [8] and urusiol [9], some people show cross-reactivity between ginkgo fruit and urusiol.

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