

Rosemary contact dermatitis and cross-reactivity with other labiate plants

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Rosemary, a plant belonging to the labiate family, is frequently used in the making of cosmetics and also for medicinal purposes. There are few reported cases of contact dermatitis due to this plant. Here we present 1 case and asses the existence of cross-reactivity with plants from the same family. 53-year-old man with several episodes of a pruritic and erythematous eruption that resulted in peeling of the skin, after applying rosemary alcohol, on the chest reported. Epicutaneous tests were done with the standard European series (GEIDC), with the commercial plant series (Bial-Aristegui) and with plants from the labiate family. Results were positive for 3 of 4 labiate species tested. we present a case of rosemary contact dermatitis, where we have found cross-reactivity with 3 of 4 species tested from the same family.

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Rosemary (*Rosmarinus officinalis*) is an evergreen bush, native to the Mediterranean area, and belongs to the labiate family (*Lamiaceae*), among which we can find origanum, sage, mint, thyme and lavender.

In phytotherapy, branches with leaves and flowers are used to make shampoo, soap and eau de cologne due to their content of essential oil, flavonoids, rosmarinic acid and terpenical derivatives. For external use only, as an antiseptic, healing and analgesic medicine in rheumatic processes, peripheral circulatory or scalp stimulants, decoction, alcoholic extract or essential oil diluted at 5% in oil or alcoholic solution are used (1).

We present a case of allergic contact dermatitis from rosemary alcohol, and we asses the existence of cross-reactivity with plants from the same family.

Case Report

A 53-year-old man, non-atopic and without any pre-existing skin disease who had retired early because of a slipped disk, was seen at our clinic because of several episodes of a pruritic erythema and severe swelling of the face, chest and dorsal aspect of arms for 2 years. These episodes resulted in peeling in the following days.

The patient related the episodes to the application of rosemary alcohol on chest, prepared by himself.

For 4 years, the patient had had a rosemary plant in his garden, and he used the alcohol preparation as a balsam on the thorax, if he had trouble with the bronchi.

Occasionally, he cooked with origanum but never noticed any adverse reactions.

He denied any contact with other plants of the labiate family.

Test Results

Epicutaneous tests were performed with the Standard European series (GEIDC), commercial plants series (Bial-Aristegui Laboratory) and with flowers and leaves from the labiate family (rosemary, sage, origanum, thyme and lavender).

We obtained flowering rosemary, lavender and sage plants from the garden of one of the authors. Thyme and origanum were bought as dried spices.

The rosemary was tested with fresh and dry leaves 'as is' and with dry leaves wetted with distilled water, as well as the alcohol form prepared by the patient.

In 10 eczema patients, epicutaneous test was performed with the same specimens obtained

Table 1. Results of the epicutaneous tests with the labiate family plants. D2, D3 and D4: after 48, 72 and 96 hr, respectively

	D2	D3	D4
Rosemary fresh leaves (as is)	+++	+++	+++
Rosemary dry leaves + water (as is)	+	+	+
Rosemary dry leaves (as is)	+	+	+
Rosemary flower (as is)	++	++	++
Sage fresh leaves the top side (as is)	+++	+++	+++
Sage fresh leaves the underside (as is)	+++	+++	+++
Lavender fresh leaves the top side (as is)	+	+	+
Lavender fresh leaves the underside (as is)	+	+	+
Lavender flowers (as is)	–	–	+
Thyme dry leaves (as is)	–	+	+
Thyme dry leaves + water (as is)	–	–	+
Origanum dry leaves (as is)	–	–	–
Origanum dry leaves + water (as is)	–	–	–?
Rosemary alcohol (as is)	+	+	+
Rosemary alcohol in 50% water	–	–	–

from the same plant for rosemary, lavender and sage. For origanum and thyme, we don't know, because they were bought as dried spices. The results were negative in all of them.

The results are shown in Table 1 and Fig. 1. Readings followed GEIDC guidelines.

Discussion

To date, in literature, there are few contact dermatitis cases from rosemary (2–4).

In 1997, Fernández et al. (2) published a case of contact dermatitis from rosemary, applied as a poultice to the knee. They obtained a positive result only with regard to the rosemary leaves. No cross-reactivity with thyme, origanum or mint, also tested, was found.

Later in the year 2001, a case of cheilitis from rosemary was published, where rosemary was used as a spice to season food. Once again positive results were found in relation to rosemary only: there was no cross-reactivity with 2 species of mint tested at the same time (3).

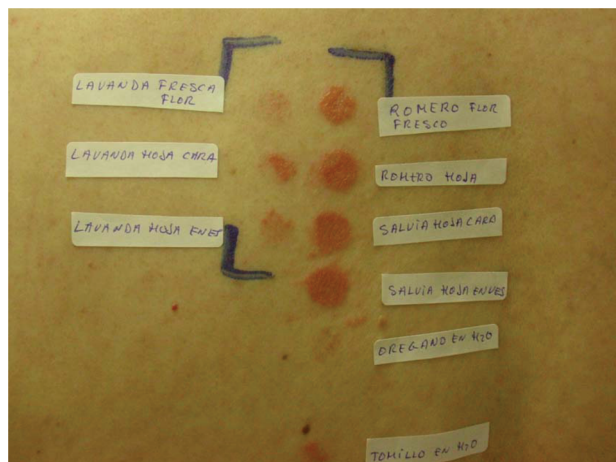


Fig. 1. Results of the tests after 96 hr.

In a study by Armisen et al., a female presented several episodes of dermatitis on face, hands and arms, after picking rosemary. After testing several plants of the same family (mint, origanum and thyme), they detected cross-reactivity only with regard to thyme (4).

In our case, we tested leaves and flowers separately, finding a stronger reaction to the leaves. On testing the fresh rosemary leaves, dry rosemary and dry rosemary re-hydrated with distilled water, we obtained a positive response to the fresh leaves + + +, in contrast to the dry leaves or the re-hydrated one, +. This makes us suspect that the most sensitizing component is the essential oil, but as it is volatile, it could lose part of its sensitizing effect, on drying.

Moreover, in this case, we can confirm the cross-reactivity, with 3 of 4 species tested belonging to the labiate family.

Among the most frequent published causes of airborne contact dermatitis are plants, particularly Compositae. Almost all the airborne allergens have been occupational (5), including rosemary (6).

According to the accepted criteria, dermatitis is considered as airborne depending on the allergen volatility and the distribution of the lesions (5). That is why we consider that in our case; in addition to the contact dermatitis on thorax due to direct application of the product, the associated facial dermatitis suggests, besides the possibility of a self-extended dermatitis, an airborne dermatitis.

Conclusion

We present a case of non-occupational contact dermatitis from rosemary alcohol.

We have found cross-reactivity with 3 of 4 species tested from the same family.

Differences seem to exist in the results of the skin tests with the different parts of the plant, as well as whether it is tested in fresh or dry form.

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