

***Rosa centifolia* in a
'non-scented'
moisturizing body
lotion as a cause of
allergic contact
dermatitis**

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Case Report

A 27-year-old non-atopic Caucasian woman, with a history of polymorphic light eruption, presented in March 2008 with a 2-week history of a rash following the use of Rose Absolute®-eau de parfum- (Yves Rocher, 56201 La Gacilly, France) and Louis Widmer® non-scented body lotion (Louis Widmer SA, Brussels, Belgium). Erythema, papules, and oedematous plaques were present on the neck (the only site where she had applied the perfume) and also on the upper chest, arms and shoulders, abdomen, and upper thighs.

Six months before she had also suffered from a severe itching and erythematous eruption with blister formation on the right ankle, following the application of Flexium® spray (Melisana NV, Brussels, Belgium) (which contains etofenamate, eucalyptus, and pine

Table 1. Positive patch test results (in 2 patch test sessions: May 2008 and July 2009)

Tested allergens	Patch test reactions		
	D2	D4	D7
Colophonium 20% pet.	+	++	NR
<i>Myroxylon Pereirae</i> 25% pet.	+	+	NR
Fragrance Mix I 8% pet.	+	++	+
Fragrance Mix II 14% pet.	-	+	+
Cinnamyl alcohol 2% pet. ^a	+	NR	NR
Rose oil 5% alc. ^b	+	++	+
Rose centifolia 5% alc. ^b	+	++	+
Rose oil Bulgarian 2% pet. ^a	-	+	+
Geranium oil Bourbon 2% pet. ^a	-	+	+
Lavender oil 5% alc. ^b	+	++	+
Lavender oil 10% alc. ^b	+	++	+
Linalool 10% pet.	++	++	NR
Limonene 10% pet.	++	++	NR
Citral 2% pet.	++	++	NR
Farnesol 5% pet.	+	++	NR
Louis Widmer® non-scented body lotion	+	++	+
Rose Absolute®-eau de parfum	-	+	+

Allergens from Trolab, except ^aChemotechnique and ^bprepared by a pharmacist in-house. NR, not read.

needle oil, isopropyl alcohol, macrogol, oleth-5, propylene glycol, sodium hydroxide, carbomer, and water) covered with Tensoplast® adhesive tape (BSN medical NV, Leuven, Belgium) to treat joint pain. She experienced itching after a few hours but the tape had only been removed 1 week later. She had used Flexium® spray several times before without any skin problem, but had experienced adhesive tape intolerance. Topical corticosteroids and a moisturizer had gradually provided relief of the symptoms.

Patch testing was performed in May 2008 and again in July 2009 using van der Bend chambers® (van der Bend, Brielle, the Netherlands) mounted on Micropore® (3M Health Care, Borken, Germany), and fixed with Mefix® (Mölnlycke Health Care, Göteborg, Sweden). Positive reactions were observed to colophonium and other fragrance markers in the baseline series (all obtained from Trolab, Almirall Hermal GmbH, 21456 Reinbek, Germany), as well as to the body lotion and the perfume she had used (Table 1). Because of the presence of '*Rosa centifolia*' on the ingredient list of the body lotion and the reaction to the Rose Absolute®-eau de parfum, further patch tests were performed with rose oil and some of the fragrance ingredients present in the perfume (as labelled), with the ingredients of Fragrance Mix I (FM I) and II (FM II), and also with geranium and lavender oil and some terpenes also common to rose oil (1–3). Several positive reactions were obtained (Table 1, Figs 1

and 2). Oxidized forms of linalool and limonene are not commercially available, but we tested aged materials and obtained positive patch test results.

In view of the dermatitis she had suffered from 6 months previously, patch tests with the known allergenic vehicle components of Flexium® (except pine needle oil which was unavailable) and photo-patch testing with the potential photosensitizer etofenamate (4), the active principal, were performed; this resulted in a positive photo-patch test to the latter only. She since has again used this medication without any problem, however, without sunlight exposure. Therefore, the lesions on the ankle can certainly be attributed to the adhesive tape which indeed contained colophonium.

Discussion

This patient presented with positive reactions to rose oil, illustrating the link with the allergic contact dermatitis from the non-scented moisturizing body lotion (Table 1, Figs 1 and 2), as well as to several ingredients of Rose Absolute®-eau de parfum, i.e. citral and farnesol (both present in FM II), and linalool and limonene. The latter two are common ingredients of several essential oils (including rose, lavender, and geranium oils (2, 3, 5)) and are terpene chemicals which become more irritant (6) and allergenic on air oxidation (7–9). The reactions observed in our patient, however, were clearly allergic in nature.

The patient most probably became primarily sensitized by Rose Absolute®-eau de parfum (which she had been using for approximately 1 year without any problems), with subsequent dermatitis from the 'non-scented' body lotion. She had, however, used both products simultaneously when the dermatitis occurred. The relevance of the positive test to cinnamyl alcohol could not be determined, but after discontinuation of fragrance-containing cosmetics, she became symptom free.

Two major species of roses are cultivated for the production (by distillation) of rose oil, i.e. *Rosa damascene*, the damask rose, which is widely grown in Bulgaria (70–80%), Turkey, Russia, India, and China, and *Rosa centifolia*, the cabbage rose, which is more commonly grown in Morocco, France, and Egypt (10). The pale petals of the latter variety are particularly used in France for distillation of rose-water, which is used for many purposes including for its cooling and refresh-

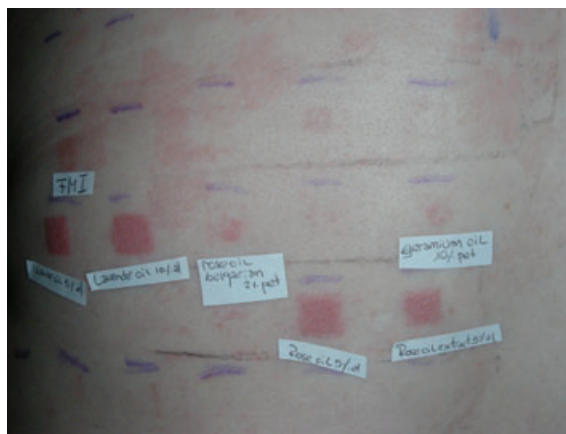


Fig. 1. Positive patch test reactions to several rose oil preparations, lavender- and geranium oils, and fragrance mix I (D4 reading).



Fig. 2. Positive patch test reactions to lavender oil, limonene, and linalool (D2 reading).

ing effect, and also against redness and inflammation of the eyes (2).

Allergic contact dermatitis from rose oil has been reported previously, due to its presence in perfumes and essential oils used by aromatherapists, and as fragrance raw materials (extracts) used in traditional cosmetics and/or in topical pharmaceutical products (11–15). Rose oil has been regarded as a rare sensitizer, perhaps because of its occurrence in popular ‘fragrance-free’ soaps or in ‘non-scented’ body lotions and, conceivably, in many ‘all-natural’ products (16). It may be a more common allergen than previously recognized, through. To our knowledge, this is the second report of contact dermatitis due to a ‘non-scented’ cosmetic product (16), in which ‘*Rosa centifolia*’ was present and not recognized as a fragrance component.

Indeed, according to cosmetic legislation in the EU, plant-derived materials, such as essential oils, are given an International Nomenclature of Cosmetic Ingredients (INCI) name in Latin on the cosmetic labels, hence, fragrance-allergic patients (and sometimes medical doctors) cannot easily recognize them as potential allergenic culprits. Both parties need to be educated to read labels and look for plant extracts that are potential perfume sensitizers and/or cross-reacting agents. Indeed, single fragrances such as the terpenes limonene and linalool would have had to be labelled at concentrations of 10 p.p.m. or greater had they been added as single chemicals to the leave-on cosmetic body lotion (17). However,

as they were concealed in the rose oil, separate labelling was not legally required. The likely presence of limonene, linalool, farnesol, citral, geraniol, etc. next to the Latin INCI name in brackets should therefore be indicated on the label.

A product labelled as ‘non-scented’ or ‘fragrance-free’ should not contain essential oils because, even at low concentrations, such products may still elicit allergic reactions, especially in subjects reacting to multiple essential oil ingredients as in this case. It causes confusion to consumers. Therefore, we would suggest a change in legislation so that ‘non-scented’ or ‘fragrance-free’ could not legally appear on the label of products that contain essential oils.

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