



Aromatherapy and occupational allergic contact dermatitis: two further cases due to lavender oil and other essential oils.

Monica Corazza¹, Graziana Amendolagine¹, Alessandro Borghi¹, Giulia Toni¹, Maria Michela Lauriola²

¹Section of Dermatology and Infectious Diseases, Department of Medical Sciences, University of Ferrara, Italy

²Policlinico San Marco, Dermatology Department, Corso Europa 7, Zingonia–Osio Sotto (Bg), Italy

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Address:

Section of Dermatology and Infectious Diseases, Department of Medical Sciences, University of Ferrara

Via L. Ariosto 35

44121 Ferrara, Italy

Phone: +39 0532239684

E-mail: graziana.amendolagine@gmail.com

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Nowadays the use of natural products and alternative medicine is very fashionable. Aromatherapy is the systemic or topical application of essential oils to "maintain and promote physical, psychological and spiritual well being".¹ Masseurs are at high risk of developing occupational contact dermatitis from fragrances and essential oils;^{2,3} two further cases of occupational contact dermatitis caused by essential oils are described.

Case reports

A 38-year-old non atopic male presented with chronic dermatitis of his hands, especially involving the palmar surfaces, tenar eminences and first two fingers (Fig 1a) He has worked as masseur for years; during the last 4 months he had begun to practice a new kind of relaxing massages with pure lavender essential oil, diluted 3% in petrolatum oil. Topical steroids gave only transient benefits while a spontaneous improvement of the eczema during holidays and weekends was reported. Patch testing was performed with the Italian Society of Allergological, Occupational and Environmental Dermatology (SIDAPA) baseline series (Lofarma, Milano, Italy), a botanical integrative series and with the massage oil tested "as is" on Van der Bend chambers (Van der Bend, Brielle, The Netherlands). Patch tests were applied under occlusion on the patient's back for 2 days; readings were performed on day (D) 2 and D4 according to ESCD guidelines.⁴ A botanical additional series (FIRMA SpA, Florence, Italy) set up with numerous haptens, selected according to the literature,⁵ was performed. The patient showed positive reactions to fragrance mix I (++D2/+++D4), lavender absolute 2% pet (++D2/+++D4) and the lavender oil tested "as is" (++D2/++D4) (Fig 1b).

A 40-year-old atopic masseur with a history of psoriasis, presented with chronic eczema of both his wrists and the palmar surfaces of his hands and with fissured acral pulpitis (Fig 2a). The stop-restart test with massage oils used was positive. Patch tests with the SIDAPA series, the botanical series and the patient's products tested "as is" were carried out. Positive reactions were observed to fragrance mix I (+D2/++D4), Nickel sulphate (++D2/++D4), Propolis 20% pet (+D2/+D4), lavender absolute 2% pet (+D2/+D4), peppermint oil 1% pet (+D2/++D2), pyrethrum 2% pet

(+D2/+D3) and three out of five of his own essential oils (Fig 2b). These five essential oils used products that were also tested in 3 control cases and resulted negative.

Discussion

According to the WHO, 80% of the world's population uses plant-derived medicines for primary care: approximately one-third of natural medicines are for the treatment of wounds or skin disorders. Lavender oil is an essential oil obtained from lavender (*Lavandula angustifolia*), the flowering plant species belonging to the genus *Lavandula*, a member of the Lamiaceae family. Lavender is commonly used in personal and household care items as well as in aromatherapy. It has many properties, such as fragrance, sedative, soothing and antimicrobial effects; it is also considered antidepressive and effective for burns and insect bites.⁶ The main components of lavender oil, terpenes linalool, linalyl acetate and caryophyllene, have been shown to autoxidize in contact with oxygen in the air, forming sensitizing hydroperoxides.⁷ Pure lavender oil was shown to be a weak sensitizer, but the oxidized sample was classified as a moderate allergen. Furthermore essential oils usually are complex mixtures in which new sensitizing substances could form over time in chemical reactions between the components of the mixture; different sensitizers together could induce a stronger inflammatory reaction than a single one.^{7,8} Identifying the responsible allergenic component of essential oils is difficult and moreover the co-sensitization to multiple perfumes and essential oils is common. This may be explained by pseudo cross-reactivity or random cross-reactivity or concomitant sensitization.⁹ In our cases the patients showed many allergies simultaneously, both of them to fragrance mix I. For this reason it is important to advise patients who are allergic to perfumes to avoid “natural” products. A recent study demonstrated that the prevalence of contact allergy to lavender was 2.2% and the three most frequent concomitant positive reactions were to fragrance mix I, fragrance mix II and Myroxylon pereriae resin.¹⁰ It is important to remember that the exposure to lavender could go unreported, because patients have the false belief that anything “natural” is “safe”.

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Figure legends

FIG. 1a Chronic eczema of the first patient's hands, involving the palmar surfaces, tenar eminences and first two fingers; **1b** Results of patch test of the first patient on D4 (96 hours).

FIG. 2a Fissured acral pulpitis of the second patient's hands; **2b** Results of patch test of the second patient on D4 (96 hours).

FIG. 1**FIG. 2**