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REVIEW

Allergic Contact Dermatitis to Fragrances: Part 2[☆]

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Abstract Allergic contact dermatitis due to fragrances usually manifests as subacute or chronic dermatitis because fragrances are found in a wide range of products to which patients are repeatedly exposed. The typical patient is a middle-aged woman with dermatitis on her hands and face, although other sites may be affected depending on the allergen and the product in which it is found. The standard patch test series of the Spanish Contact Dermatitis and Skin Allergy Research Group (GEIDAC) contains 4 fragrance markers: balsam of Peru, fragrance mix I, fragrance mix II, and lylal. Testing with a specific fragrance series is recommended in patients with a positive result to any of these 4 markers. The use of a specific fragrance series and new legislation obliging manufacturers to specify the fragrances used in their products, will help to improve the management of allergic contact dermatitis due to fragrances.

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Dermatitis de contacto alérgica por fragancias. Parte II

Resumen La dermatitis de contacto alérgica por fragancias suele presentarse clínicamente como un eczema subagudo o crónico debido a la ubicuidad de este alérgeno en los productos de uso cotidiano y el contacto repetido. El paciente típico es una mujer de edad media con afectación de las manos y la cara, aunque la localización de las lesiones variará dependiendo del alérgeno y del producto causante. Dentro de la batería estándar del Grupo Español en Investigación de Dermatitis de Contacto y Alergia Cutánea (GEIDAC) están incluidos 4 marcadores de fragancias: el bálsamo del Perú, la mezcla de fragancias I, la mezcla de fragancias II y el lylal. En caso de que alguno de estos marcadores sea positivo está indicada la utilización de una serie de fragancias específicas para el diagnóstico. Esto, unido a la nueva legislación que obliga a la industria a notificar qué ingredientes y fragancias utiliza en sus productos, nos ayudará a la resolución de la dermatitis de pacientes alérgicos.

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Introduction

The primary objective of this article is to provide an update on the current situation regarding allergic contact dermatitis caused by fragrances. In Part 1, we reviewed relevant legislation, the main sources of exposure, and epidemiology. In Part 2, we focus on the usual clinical manifestations of this disease and propose an algorithm for the diagnosis and treatment of affected patients.

Clinical Features

Allergic contact dermatitis is the most common cutaneous adverse effect associated with the use of fragrances.¹ It manifests mainly as subacute or chronic eczema caused by contact with fragrance allergens, a group of substances that are difficult to avoid in daily life. The typical patient is a 40-year-old woman with dermatitis affecting the hands or face,²⁻⁴ although any part of the body can be affected, depending on the type of product used and the area it is applied to.⁵ Most studies find the hands to be the site most commonly affected by cosmetic products^{1,5-7} and even more so by products used in the household and the workplace.⁸ Fragrances are seldom the only cause of hand eczema, and their application often complicates underlying conditions, such as irritant dermatitis and atopic dermatitis.^{9,10} Some series find the face to be the most commonly affected site¹¹ by direct application of cosmetic products, although airborne fragrances can also be responsible. Another frequently affected site is the legs in patients with vascular ulcers who become sensitized to the fragrance ingredients in their topical medication.^{12,13} A history of axillary eczema associated with deodorant or of cutaneous rash at sites where cologne or perfume is applied significantly increases the likelihood of a patient being allergic to fragrances. Fragrances are considered to be the most common cause of primary sensitization.¹⁴

The neck is commonly affected by contact dermatitis due to fragrance allergy (Fig. 1) as a result of the direct application of perfumes and colognes. The presence of eczematous lesions on the laryngeal prominence (Adam's apple) as a result of the application of aerosolized perfume is known as the atomizer sign.¹⁵

Cheilitis, which is usually a chronic disease, can be allergic in origin and caused by fragrances. A retrospective study of 129 patients with cheilitis found the second most common cause to be allergens found in cosmetic, dental, and food products.¹⁶

Fragrances can cause skin diseases other than allergic contact dermatitis, as follows:

- 1 Contact urticaria may be allergic or nonallergic, and wheals are sometimes associated with respiratory symptoms.¹⁷ Cases of contact urticaria have been reported after application of skin patches containing cinnamic aldehyde, cinnamyl alcohol, and balsam of Peru.¹⁸
- 2 Irritant contact dermatitis is associated with products containing high concentrations of fragrances, particularly deodorants, because they are applied to moist areas of delicate skin, such as the axilla. Other affected sites include the eyelids and the perineum.¹⁹
- 3 Contact dermatitis caused by exposure to the sun after application of fragrances includes photoallergic dermatitis and phototoxic dermatitis. Photoallergic contact dermatitis to fragrances has been reported with coumarin and oakmoss absolute,²⁰⁻²² but the most common cause is musk ambrette, a compound which was used in various products as a fragrance fixative²³ and is now prohibited. Positive photopatch reactions have been reported with oakmoss absolute, eugenol, cinnamic aldehyde, 6-methyl coumarin, and hydroxycitronellal, although most were interpreted as phototoxic reactions.²⁰ Poikiloderma of Civatte, a condition characterized by irregular hyperpigmented plaques with unevenly distributed telangiectases and mild atrophy on the sides of the neck, is the result of chronic actinic damage. Some authors believe it to be a phototoxic reaction associated with the application of fragrance in this area.^{24,25} Berloque dermatitis is a proven phototoxic reaction²⁶ consisting of brownish-red lesions that arise on the area where a perfume or cologne is applied when the skin is exposed to sunlight.
- 4 Pigmented cosmetic dermatitis, first described in Japan in the 1970s, is the result of contact allergy to the ingredients of cosmetic products, including fragrances.²⁷ The symptoms are similar to those of Riehl melanosis. Positive patch test results have demonstrated a direct association with geraniol, benzyl alcohol, methoxycitronellal, and several essential oils (eg, ylang-ylang and jasmine absolute). Fragrances can also cause depigmentation of the skin.
- 5 Isolated reports have been published of other clinical conditions associated with fragrances, including bullous contact allergy²⁸ and erythema multiforme.²⁹

Diagnosis

The information supplied by the patient leads us to suspect fragrance allergy, especially when the area affected is one where a cosmetic product with a high fragrance concentration (eg, cologne, perfume, or deodorant) is commonly applied. The history should include the cosmetic products used by the patient and exacerbating factors such as profession, hobbies, and exposure to sunlight. In the physical examination, the presence of dermatitis on the face, retroauricular area, axilla, chest, or anal/vulvar area should alert the physician to the possibility of fragrance allergy. However, any part of the body can be affected. Furthermore, other forms of dermatitis (irritant, atopic) can be complicated by sensitization to fragrances.

A confirmed diagnosis of allergic contact eczema is based on symptoms and patch testing, the results of which should be clinically relevant.

Allergens Used in Patch Tests

Of the more than 2800 substances catalogued as fragrances by the Research Institute of Fragrance Materials, at least 100 are allergenic.³⁰ Fortunately, the fact that only a limited number are responsible for most cases of sensitization facilitates detection of allergy using patch tests in which small groups of fragrances are analyzed together in mixes.

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