

Photoallergic Contact Sensitization to 6-Methylcoumarin in Poikiloderma of Civatte

Vasanop Vachiramon and Penpun Wattanakrai

A 49-year-old woman presented with asymptomatic progressive erythema, hyperpigmentation, atrophy, and telangiectasia on her neck. The clinical appearance and histopathology of the skin lesion was consistent with poikiloderma of Civatte. Photopatch-testing with our standard photoallergens yielded a positive reaction to 6-methylcoumarin, which was found in the patient's perfume. This report describes the first case in which photoallergic contact sensitization to 6-methylcoumarin may play an important role in the pathogenesis of poikiloderma of Civatte.

POIKILODERMA OF CIVATTE is a benign dermatosis characterized by a combination of erythema, hyperpigmentation, atrophy, and telangiectasia. It is seen commonly on the upper chest and sides of the neck and less commonly on the lateral aspects of the cheeks, sparing the shaded area under the chin. The etiology and pathogenesis of poikiloderma of Civatte are still debated. Chronic exposure to ultraviolet light,¹ hormonal changes associated with menopause,^{2,3} genetic factors,⁴ and photo-sensitizing chemicals in perfumes or cosmetics⁵ have been implicated in the pathogenesis of poikiloderma of Civatte. We report a case of photoallergic contact sensitization to 6-methylcoumarin in a patient with poikiloderma of Civatte.

Case Report

A 49-year-old woman with underlying hypertension presented with progressive erythema and hyperpigmentation of 5 years' duration on the anterior aspect (a V-shaped patch) and both sides of her neck. She denied experiencing itching, burning, stinging, or other symptoms of inflammation, both at room temperature and when warmed. She had used perfumes and various cosmetics for many years. There was no history of chronic sun exposure or photosensitivity. She had entered menopause 1 year earlier. There was no family history of similar skin lesions. On examination, she

had a reticulated erythematous and hyperpigmented patch with an atrophic surface and telangiectasia on the anterior aspect and both sides of her neck (Fig 1).

A skin biopsy specimen from the anterior part of the neck showed epidermal atrophy and increased melanin in the basal layer. Superficial perivascular lymphocytic infiltration, solar elastosis, and dilated blood vessels were found in the upper and mid-dermis.

She was patch-tested with a standard series, a fragrance series, and a face and cosmetic series (Chemotechnique Diagnostics, Malmö, Sweden). Photopatch testing was also performed with the Scandinavian photopatch series, a sunscreen series, and the patient's own products. The patch-test result was negative, but the photopatch-test result showed photoallergic contact dermatitis from 6-methylcoumarin (++) reaction and usnic acid (+ reaction) on the irradiated side only (Fig 2). We found coumarin in the ingredients listed on her perfume's package. She was advised to stop using perfume, use adequate sunscreen and sun protection, and wait for a spontaneous resolution. However, the patient had two sessions of 595 nm flashlamp-pumped pulsed dye laser treatment at a private clinic, for a cosmetic reason. There was marked improvement of telangiectasia but with residual hyperpigmentation. She continued to improve during 5 months of follow-up, without further treatment.

Discussion

Poikiloderma of Civatte refers to erythema associated with a mottled pigmentation on the sides of the neck, most commonly in middle-aged or elderly women. Civatte first described the condition in 1923.⁶

From the Division of Dermatology, Department of Internal Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

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The etiology and pathogenesis of poikiloderma of Civatte are still incompletely understood. Cumulative solar radiation,¹ an unknown endocrine factor,^{2,3} and a photoallergic mechanism⁵ have been implicated. The distribution on the face and neck (and the sparing area shaded by the chin) implies that exposure to light and photosensitizing agents in cosmetics are probably important factors. A genetic predisposition has been reported to possibly be transmitted as an autosomal dominant trait.⁴

There are only a few reports in the literature suggesting that poikiloderma of Civatte might be a contact sensitization disorder.⁷ A case of poikiloderma of Civatte in a 24-year-old woman who had a positive patch-test reaction to Kathon CG was reported⁸; her skin lesions improved within 2 months after complete avoidance of her moisturizing cream, which contained the allergen. Recently, Katoulis and colleagues patch- and photopatch-tested 32 patients with poikiloderma of Civatte. Eight patients were found to have positive reactions to fragrance mix and/or balsam of Peru or to allergens in the fragrance series. The investigators concluded that contact sensitization to perfume ingredients may possibly be pathogenic in poikiloderma of Civatte.⁵

Our patient was photosensitive to 6-methylcoumarin and was found to be using a perfume whose ingredients contained the coumarin. 6-Methylcoumarin, a synthetic organic lactone, is structurally related to furocoumarins. It is a fragrance used in cosmetics, toiletries, perfumes, and soaps. The clinical reaction may cause both phototoxicity and photoallergy.⁹⁻¹¹ The negative photopatch-test reaction with the patient's perfume may have been due to the low concentration of coumarin in the perfume, which



Figure 1. Reticulated erythematous and hyperpigmented patch with atrophic surface and telangiectasia on the anterior part of the neck.

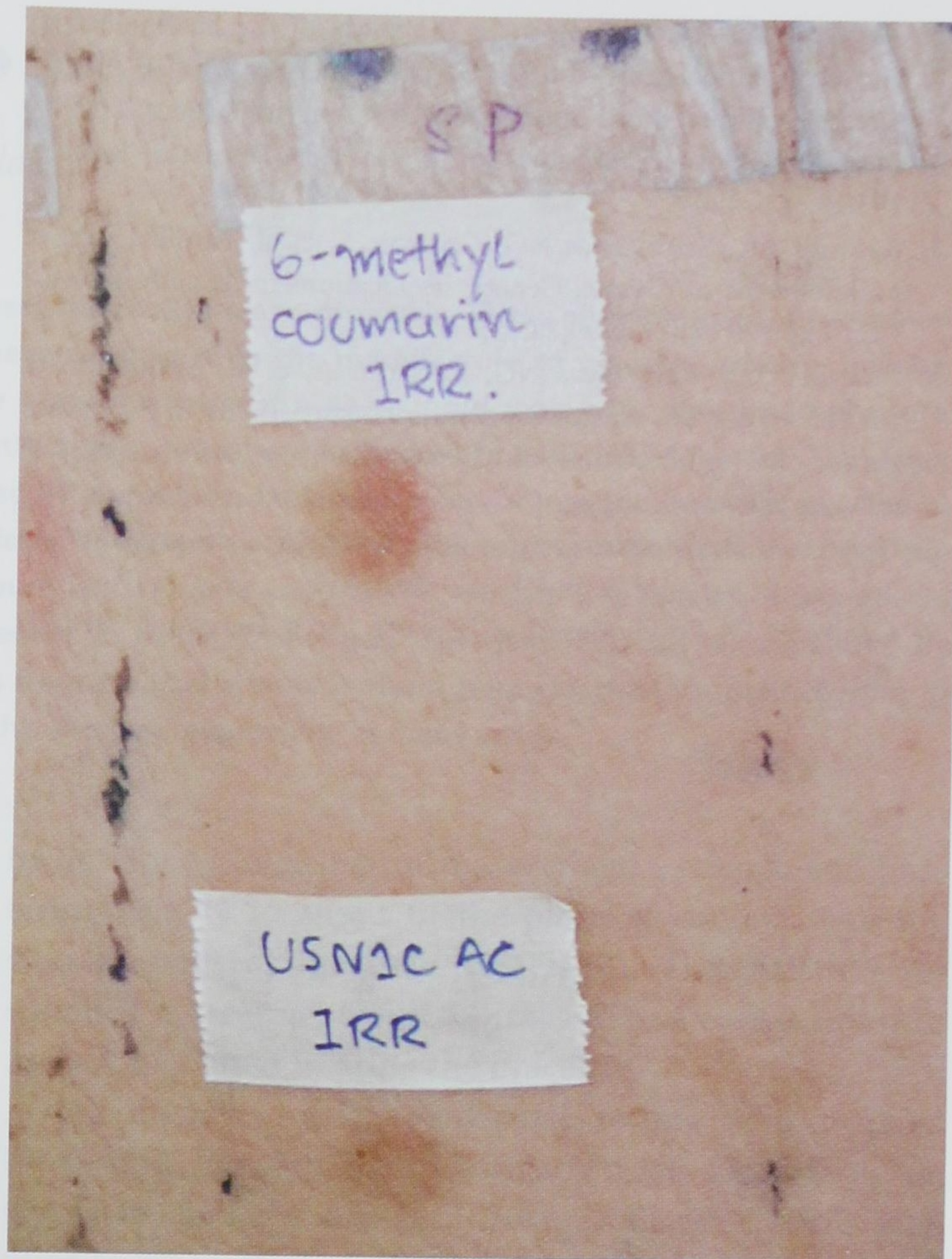


Figure 2. A photopatch test showing positive reactions to 6-methylcoumarin (++) and usnic acid (+).

was unable to elicit a positive response. The photopatch test also yielded a positive reaction to usnic acid,^{12,13} an allergen found in lichens and mosses and used as a fragrance and preservative; it is chemically related to the furocoumarins.

We propose that photoallergic contact dermatitis from 6-methylcoumarin may have played a role in producing poikiloderma of Civatte in this patient. To the best of our knowledge, the role of photoallergic contact dermatitis from 6-methylcoumarin in poikiloderma of Civatte has not previously been reported. In addition to the conclusion of Katoulis and colleagues mentioned above,⁵ we suggest that any patient who is clinically diagnosed with poikiloderma of Civatte and has a history of cosmetics and perfume use should undergo patch testing and photopatch testing to evaluate possible allergic contact sensitization and photoallergic contact sensitization as causes of poikiloderma of Civatte.

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