

Allergic contact dermatitis caused by a black tattoo ink in a patient allergic to shellac

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Assessment of a patient with probable allergic contact dermatitis caused by a tattoo ink is a difficult task, because regulations regarding the substances used as tattoo inks continue to be limited, and ink component information is difficult to access (1). Moreover, in most cases, patch testing with the culprit ink is often of little benefit. We report a case in whom patch testing with the ink gave a positive result.

Case Report

A 26-year-old man had been tattooed 4 months before presentation. He had a large black tattoo over his left leg,

in which numerous pruritic papules, 1–3 mm in size, had arisen a few weeks after tattooing. A skin biopsy of a papule showed small pigment deposits and a band-like dense infiltrate in the superficial dermis with numerous eosinophils. Patch tests with the Spanish baseline and cosmetics series (Chemotechnique Diagnostics, Vellinge, Sweden) and the black ink originally used and provided by the patient (Infinity Black; The Gilman Brothers Company®, Gilman, CT, USA) 'as is' were performed. Readings at day (D)2 and D3 showed positive (++) reactions to shellac (20% eth.) and to the original black ink (++) (Fig. 1). The clinical features, patch tests and biopsy led us to diagnose chronic allergic contact dermatitis caused by a tattoo ink in a patient with hypersensitivity to shellac. Shellac is often used as a binding agent in black tattoo ink. In our case, the material safety data sheet did not specify which binding agents were used.

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Fig. 1. Patch tests show positive reactions to the original black ink.

Discussion

Tattoo inks contain pigments and carriers that bind the pigments with water. Shellac is used as a binding agent

combined with other substances (ammonia, borax, etc.), especially in black inks. Normally, the material safety data sheets of inks do not specify what types of binding agent they use. Shellac is a purified resin used in cosmetics such as mascaras, lipsticks, nail polishes, and hairsprays. Allergy to shellac in patients with eyelid and/or lip dermatitis has been reported in recent years (2), but, to our knowledge, this is the first reported case of allergic contact dermatitis likely caused by shellac in a tattoo ink. Moreover, this finding encourages patch testing with the culprit ink.

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