

LETTER TO THE EDITOR

Allergic contact dermatitis to silver in a patient treated with silver sulphadiazine after a burn

Editor

A 26-year-old woman was referred to the Contact Unit for study of allergens. The patient had suffered a second degree burn of 10 × 3 cm diameter 7 months ago, caused by hot oil and located on her right forearm and wrist. She started treatment with topical silver sulphadiazine (Silverderma® 1% cream, Aldo-Unión laboratories, Barcelona, Spain), but after 15 days she presented progressive worsening of the burnt area, with appearance of peri-lesional erythema and blisters. Suspecting allergy to the cream used, the treatment was changed into topical nitrofurazone (Furacin® 0.2% ointment, SEID S.A. laboratories, Barcelona, Spain). The patient presented significant improvement of contact dermatitis, with complete resolution of the lesions.

Once in the Contact Unit, patch tests were carried out with the Grupo Español de Investigación en Dermatitis de Contacto y Alergia Cutánea (GEIDAC) standard series (TRUE Test®, Marti Tor laboratory, Barcelona, Spain, including methyl paraben, component of Silverderma® 1% cream), metal series Allergeaze®, Marti Tor laboratory, Barcelona, Spain (including silver nitrate 1% aqueous), vehicles series Chemotechnique®, Chemotechnique Diagnostics, Vellinge, Sweden (including propylene glycol, methyl paraben, cetyl alcohol, sorbitan oleate, polyoxyethylene stearate and isopropyl myristate, components of Silverderma® 1% cream), white petrolatum (another component of Silverderma® 1% cream) and own products provided by the patient (Silverderma® 1% cream and Furacin® 0.2% ointment). The test chamber used for own products and Allergeaze® and Chemo-

technique® sensitizers was Curatest®, Lohmann & Rauscher GmbH & Co, Neuwied, Germany non-woven epicutaneous patch test strips (Lohmann & Rauscher). International Contact Dermatitis Research Group (ICDRG) guidelines were used to test. The occlusion time was 48 h and readings were made at 48 and 96 h (also according to the ICDRG), observing both times positivity to silver (++) (Fig. 1a) and Silverderma® 1% cream (+++) (Fig. 1b). The rest of allergens, including nitrofurazone, were negative, concluding that this was a case of allergic contact dermatitis to Silverderma® cream 1%, probably attributed to silver, one of the components.

Allergic contact dermatitis (ACD) is often caused by the application of topical antibiotics, especially neomycin, bacitracin and nitrofurazone. Sensitization depends on customs of prescription of each zone and in our area is widely used nitrofurazone, despite its known high risk of ACD and the high rates of sensitization that exist in the population.^{1,2} Both silver sulphadiazine (SS) and nitrofurazone are used in daily practice for the treatment of ulcers, burns and cutaneous infections.³ In this case report, we highlight that the contact allergen is not nitrofurazone, as it could be expected from the above, but silver sulphadiazine.

Silver is an antimicrobial agent known since ancient times and since 1968 it has been used in combination with sulphadiazine for treating and preventing ulcers and infections in burns. It is marketed under names: Flammazine® and Silverderma®, Sinclair Pharmaceutical España S.L., Madrid, Spain.

SS is active against a wide range of organisms, including yeasts, Gram-positive and Gram-negative, pseudomonas and anaerobes. The mechanism of antimicrobial action of SS has not been well elucidated, but it seems that promotes bacterial lysis.⁴

Adverse systemic effects appear when SS is applied to large areas. There is a risk of producing blood disorders and cutane-

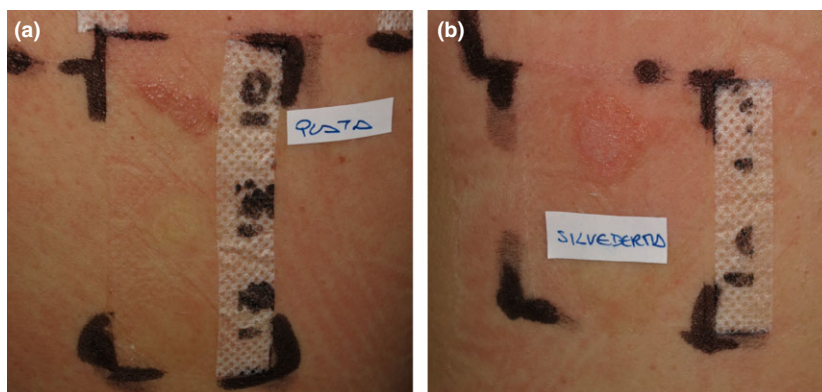


Figure 1 Patch testing with readings at 48h. (a) Positivity to silver (++) . (b) Positivity to Silverderma® 1% cream (+++).

ous side-effects, like ACD, erythema multiforme and argyria (blue-gray pigmentation of the skin, caused by the deposition of silver, with possible systemic involvement^{5,6}).

Last cases reported in the literature of ACD by SS date from 1992 to 1995, from Fraser-Moodie and McKenna, respectively, who reported cases of hypersensitivity to SS after its topical use in burns. The first author objectified reactivity in patch tests to silver nitrate and cetyl alcohol (components of Flamazine®). In our case, cetyl alcohol was also tested and was negative. The main factors involved in hypersensitivity are the alteration of skin barrier, prolonged use and application in occlusion.⁷

We report a case of allergic contact dermatitis to Silvederma® cream 1% attributed to silver contained in this product. We tested all the components of this cream, observing positivity for silver and negativity for the other preservatives. We emphasize that nitrofurazone was well tolerated by the patient even though in our medium it is considered as one of the main contact allergens. When ACD to topical antibiotic is suspected, it is recommended to suspend the administration and replace it with another one. Furthermore, it is important to perform patch tests to confirm hypersensitivity to the allergen involved and prevent its future use.

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