

Allergic Contact Dermatitis from Heparin-Containing Gel: Use of Scratch Patch Test for Diagnosis

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Précis

We report a case of patch-test-negative allergic contact dermatitis, diagnosed by scratch patch testing, from a gel containing heparin.

Discussion

Heparin is a sulfated glycosaminoglycan with anticoagulant properties. It is usually injected intravenously or subcutaneously but is also available for topical application. Cutaneous allergic reactions due to subcutaneously injected heparin have been reported.^{1,2}

A 43-year-old woman had applied a gel (Lioton gel, Sanofi-Synthelabo S.P.A., Milan, Italy) containing sodium heparin (61,760 daltons) 100,000 IU twice daily on her left forearm because of a hematoma that had developed after blood sampling. Three days after treatment, the patient developed erythema and edema on the application site; this spread to the other arm, accompanied by intense pruritus and burning (Fig 1A). Erythematous and edematous plaques also appeared on her left buttock and hip (Fig 1B). She had used the same gel previously with no adverse effects. She had not taken other drugs in the previous 3 months. The dermatitis cleared after 5 days of oral corticosteroid treatment.

A month later, patch testing was performed with Finn Chambers (Epitest Ltd Oy, Tuusula, Finland) on Scanpor tape (Norgesplaster A/S, Venne, Norway), the Società Italiana di Dermatologia Allergologica Professionale e Ambientale (SIDAPA) standard series, a preservatives series, sodium heparin 5% aqueous (aq), and the constituents of Lioton gel (methyl-4-hydroxybenzoate, propyl-4-hydroxy-

PEARLS provide insight into understanding disease pathogenesis or improving treatment. ZEBRAS inform about previously unrecognized conditions or atypical variants of known disorders.

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benzoate, lavender oil, ethyl alcohol, and triethanolamine). There were no positive reactions. Because of the high molecular weight of heparin and to increase skin permeability, we patch-tested with heparin, scarifying the skin with a sterile prick lancet (scratch patch test) and using sodium heparin 5% aq, as well as with other components of Lioton gel on the right arm. A positive reaction (++) to sodium heparin was observed at day (D) 2. At D3 and D4, the reaction became more erythematous, extending also to the forearm. Test results with the other constituents of the gel were negative. Eight healthy control subjects had no positive reactions on scratch patch tests with heparin or to components of Lioton gel.

Allergic reaction to subcutaneously injected heparins is not a rare occurrence,^{3,4} but there are only a few reports of contact dermatitis from topical heparin.⁵

Closed patch tests may sometimes be inadequate, especially for high-molecular-weight haptens such as sodium heparin, which penetrates poorly through intact epidermis. Scratch patch test is performed as classic patch test in an area where the epidermis has been damaged mechanically (eg, by scratching). The time of reading and the method of grading the reaction are identical to those of conventional patch testing.

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DECKER



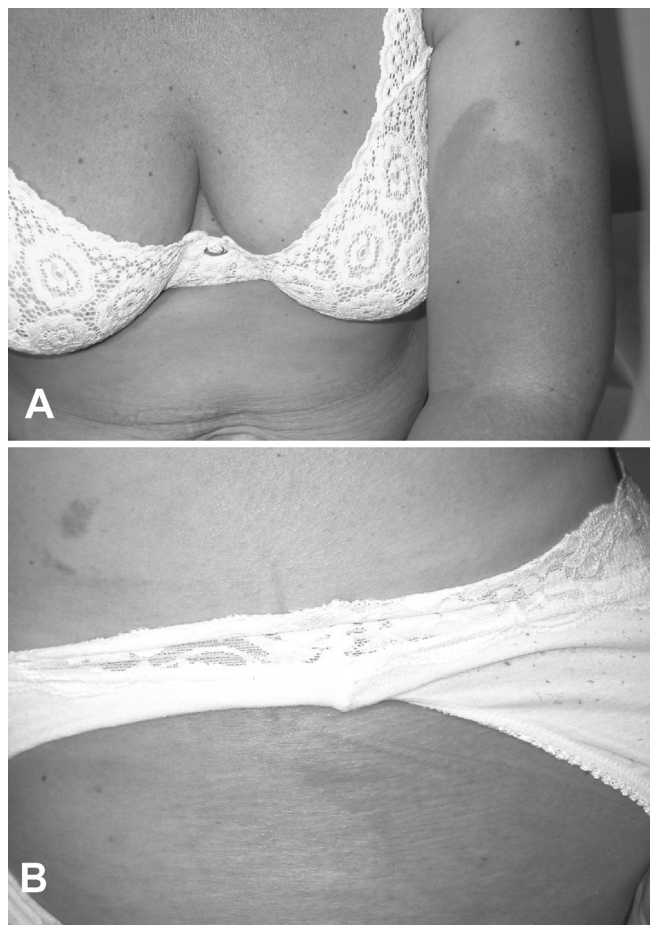


Figure 1. A, Erythematous edematous itching and burning lesions located on the patient's left arm and forearm. B, Erythematous lesions on the patient's buttock and homolateral hip.

Allergy to Imidazole Antifungals Retained in Shoes

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Précis

This patient initially had an irritant dermatitis that was then complicated by allergy to topically applied econazole.

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Pearl

When contact sensitization to topical heparin is strongly suspected in the face of doubtful patch-test results, scratch patch testing may confirm the diagnosis.

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The patient reported that she had only applied the econazole several times and that the severe dermatitis persisted for months after she discontinued the econazole, remitting only after she began wearing different shoes.

Discussion

A 26-year-old female was referred for patch testing for a persistent foot dermatitis that had been ongoing for 2 years. It started on the dorsal aspect of the right foot and spread to involve the dorsal aspects of both feet and the

dorsal aspects of the first and fifth toes of both feet. It was severely pruritic but had improved in recent months following the wearing of new shoes and the use of halobetasol ointment.

Patch testing was performed with a modified North American Contact Dermatitis Group standard panel, a foot dermatitis panel, samples cut from the patient's shoes, and a number of topical medicaments that had been applied to the patient's feet. Allergens were removed at 48 hours, and a reading was performed at 120 hours. There were ++ reactions to econazole nitrate 1% in alcohol, miconazole 1% in alcohol, and a 1% econazole prescription cream that the patient had used. There was a 1% reaction to a sample from a shoe that the patient had had for the previous 5 years. There were no other positive reactions; there were negative reactions to clotrimazole 5% in petrolatum and to a topical clotrimazole product the patient had used.

Allergy to imidazole antifungals is uncommon. When it occurs, cross-reactivity patterns are relatively predictable; miconazole and econazole commonly cross-react, whereas clotrimazole and ketoconazole typically do not cross-react with these agents.¹ Retention of allergens in clothing and shoes is a well-known entity. However, the author has seen

this as a more common problem in shoes than in clothing, presumably due to several factors: the close contact between the shoe and the skin; the moist environment inside shoes, which leads to allergen uptake and release by the shoe; and the fact that shoes (as opposed to clothing) are rarely washed.²

Pearl

Topical imidazole antifungals are commonly used as first-line over-the-counter treatment of foot dermatoses. Patients may not provide a history of using these agents, but such agents can persist in shoes for long periods, and all patients with suspected allergic contact dermatitis of the feet should be tested with a panel of imidazole antifungals.

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