

Short Communication

Erythema-multiforme-like eruption on the application site of a nitroglycerin patch, followed by widespread erythema multiforme

J. F. SILVESTRE, I. BETLLOCH, J. GUIJARRO, M. P. ALBARES AND G. VERGARA

Section of Dermatology, Hospital General de Alicante, C/ Pintor Baeza s/n, 03010 Alicante, Spain

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Erythema multiforme is an unusual pattern of contact dermatitis, most commonly caused by allergy to tropical woods and plants, topical medicaments, metals and trichloroethylene (1).

Case Report

A 61-year-old woman presented with a widespread itchy cutaneous eruption that had been present for 5 days. This had started on the application site of a nitroglycerin patch, and had remained most severe in this area. The patient had been on diltiazem orally and nitroglycerin patches (Nitradisc 10[®]) for the last 20 days. She had never been on sublingual nitroglycerin or oral isosorbide dinitrate.

Cutaneous examination (Fig. 1) showed a large erythematous-oedematous patch on the chest and multiple smaller papulo-oedematous lesions over the remainder of the trunk. The eruption was erythema-multiforme-like. A skin biopsy from the patch on the chest showed exocytosis, hydropic degeneration of the basal layer, oedema of the papillary dermis and a superficial and deep perivascular infiltrate of lymphocytes, all such findings being consistent with erythema multiforme.

Patch tests with the GEIDC standard series, Nitradisc 10[®] (80 mg nitroglycerin per patch), Solinitrina spray[®] (0.4 mg nitroglycerin per dose), and Nitradisc 10[®] adhesive without nitroglycerin (a gel-like matrix composed of glycerin, purified water, lactose, polyvinyl alcohol, povidone and sodium citrate) gave a positive reaction only to the Nitradisc 10[®] patch (++). The patient on her own applied again another Nitradisc 10[®] patch and a similar local eruption appeared: she also complained of widespread pruritus.

Discussion

Nitroglycerin had been used orally for longer than a century and hardly caused sensitization, but since used topically, it has caused allergic contact dermatitis more frequently. Most cases described in the literature are eczematous local reactions on the area of the patch or

ointment application, although some cases of widespread cutaneous reactions have been described. Nitroglycerin itself has been the allergen implicated in almost all reported cases (2–5). For patch testing, nitroglycerin can be applied at 0.2–0.5% aq. or 2% pet. As nitroglycerin is difficult to handle because it can explode, in



Fig. 1. An erythema-multiforme-like reaction patch on the application area of the nitroglycerin patch and multiple smaller papulo-edematous lesions over the remainder of the trunk.

some reported cases, nitroglycerin allergy has been proven by application of various commercial preparations of nitroglycerin in different excipients (6). We strongly suspect that the causal agent in this case was the nitroglycerin, though we could not prove it.

Drugs, both systemically and topically, can cause erythema-multiforme-like eruptions. Litt (7) provides a list of more than 200 drugs that have been associated with erythema multiforme, and neither nitroglycerin nor isosorbide dinitrate are on it (7).

References

1. García-Pérez A, Alomar A. Manifestaciones clínicas del eczema, In: Giménez-Camarasa J M (ed): *Dermatitis de contacto*, 1st edition. Madrid: Aula Médica, 1999: 59–60.
2. Holdiness M R. A review of contact dermatitis associated with transdermal therapeutic systems. *Contact Dermatitis* 1989; 20: 3–9.
3. Hogan D J, Maibach H I. Adverse dermatologic reactions to transdermal delivery systems. *J Am Acad Dermatol* 1990; 22: 811–814.
4. Fisher A A. Dermatitis due to transdermal therapeutics systems. *Cutis* 1984; 34: 526–531.
5. Chandraratna P A N, O'Dell R E. Allergic reactions to nitroglycerin ointment: report of 5 cases. *Curr Therap Res* 1979; 25: 481–484.
6. De la Fuente R, Armentia A, Dies J M. Contact dermatitis from nitroglycerin. *Ann Allergy* 1994; 72: 344–346.
7. Litt J Z. *Drug eruption reference manual 2000*. New York: Parthenon Publishing Group, 2000: 627–628.