

Allergic contact dermatitis to nickel: Can systemic isotretinoin therapy promote sensitization?

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There is some evidence for the development of allergic contact dermatitis (ACD) during therapy with oral isotretinoin. We report the case of a young man who developed nickel allergy to his jewellery during isotretinoin treatment.

1 | CASE REPORT

A 21-year-old non-atopic man suffering from severe acne vulgaris was put on systemic isotretinoin therapy (0.3 mg/kg). After 2 months of therapy, he complained of eczema on his wrists, neck, and under his belt buckle. All skin lesions occurred in areas in contact with metal jewellery accessories that he had been wearing for years without them causing any problem before starting isotretinoin.

Patch testing was performed with the Società Italiana di Dermatologia Allergologica Professionale e Ambientale (SIDAPA) baseline series (F.I.R.M. A., Florence, Italy). Van der Bend patch test chambers (Brielle, The Netherlands) were applied on the upper part of the patient's back. The readings on day (D) 2 and D4, according to the Italian guidelines,¹ showed a strong positive reaction only to nickel (++/+++). Systemic treatment with isotretinoin was stopped, the metallic accessories were removed and the eczematous manifestations healed with moisturizers and topical steroids.

2 | DISCUSSION

Systemic retinoids can cause several cutaneous adverse effects, the most common being xerosis.² Systemic retinoids modify both the structure and function of the epidermis. Retinoids inhibit the production of sebum and, therefore, increase transepidermal water loss. Retinoids can cause a loss of tonofilaments and hemidesmosomes and increase epithelial fragility.³ All this damage to the barrier function of

the epidermis and a thinner stratum corneum allow an increased penetration of haptens. Furthermore, retinoids increase the density of Langerhans cells, the antigen-presenting cells in the sensitization phase of ACD, enhancing immune-responsiveness.

Therefore, it can be assumed that the use of systemic isotretinoin may encourage the onset of ACD. There are only three reported cases in the literature concerning the development of new contact sensitisation in patients taking oral isotretinoin. One case was a student who developed dermatitis to rubber gloves she had tolerated before starting isotretinoin.⁴ The second case, a young adult, developed allergies to multiple ingredients in ointments used for isotretinoin-induced xerosis.⁵ Another case involved a young boy who, after 5 months of isotretinoin therapy for acne, presented new eczematous plaques underneath his watch and his belt buckle due to sensitization to nickel.⁶ The present case seems to add further evidence on the role of oral isotretinoin as a potential promoter of allergic sensitization, especially to metals. Further studies are required to verify this hypothesis.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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