

A first case of erythema multiforme-like contact dermatitis caused by propolis

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Erythema multiforme-like contact dermatitis is a rare form of non-eczematous contact reaction. It can sometimes pose diagnostic difficulties and has been reported after exposure to several, usually strong, allergens. Propolis is increasingly used in cosmetic products for its alleged antibacterial and anti-inflammatory properties. We report here the first case of propolis-induced erythema multiforme-like contact dermatitis.

Case Report

A 26-year-old woman presented with a maculopapular rash, evolving over a few days. It had begun with a pruritic eczema-like lesion on her right ankle that rapidly spread to her legs, arms and abdomen. The target-like shape of lesions suggested erythema multiforme-like contact dermatitis (Fig. 1). A lesional biopsy showed a pattern compatible with eczema, with an eosinophilic infiltrate. Hence, topical application of a contact allergen was suspected. The patient remembered using propolis essence on her right ankle for an insect bite a few days before the lesions occurred. As treatment with a potent topical corticosteroid yielded no improvement, systemic corticosteroid therapy was started for 4 days, and led to rapid improvement with no relapse after 2 months. Two months later, the patient was patch tested with the European baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), with her own propolis essence 10% pet., and with propolis 10% pet. (Chemotechnique). After 2 days of exposure, readings were performed on day (D) 2 and D3 in accordance with ICDRG guidelines, and showed positive reactions to *Myroxylon pereirae* (balsam of Peru),



Fig. 1. (a) Spiral-shaped eczematous eruption of the right ankle related to propolis application. (b, c) Target-shaped plaques at a distance from the contact site.

fragrance mix I, and nickel, and also strong positive reactions to propolis, both with her personal essence and with the commercial patch test preparation (Figure S1).

Discussion

Erythema multiforme-like contact dermatitis is an atypical and rare form of allergic contact dermatitis. This type of non-eczematous contact reaction is usually observed with strong allergens such as exotic woods, plants, dyes, and *p*-phenylenediamine, or with topical non-steroidal anti-inflammatory drugs (1). Typically, it is characterized by eczema at the initial contact site, followed by localized or diffuse spread of target-like lesions. Histology shows mostly an eczematous pattern and, rarely, findings typical for erythema multiforme.

With natural products becoming more and more popular, propolis is increasingly being used in cosmetics and for

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the self-treatment of various benign diseases, because of its alleged antiseptic, anti-inflammatory and antioxidant properties. Propolis is a resinous material produced by honeybees. The chemical composition of propolis depends on the plants accessible to bees and on the season. It is composed of > 50 compounds (resins, vitamins, essential oils, wax, etc.) (2). Propolis is a well-known contact allergen, usually inducing 'classic' contact eczema. Propolis was originally described as an occupational contact allergen often seen in beekeepers, but the incidence of propolis allergy seems to be increasing, owing to its use as a cosmetic and medicinal agent. According to the literature, 1.2–6.6% of patch tested patients react to propolis (3). The main allergens are 3-methyl 2-butenyl caffeate and phenylethyl caffeate, which were not tested in our patient (2). Because propolis shares allergens with *M. pereirae* and fragrance mix I, positive reactions to these allergen mixes are often described (4), as was the case with our patient.

In addition to allergic contact dermatitis, there are also reported cases of systemic reactions (5) or fixed drug eruptions (6) after propolis ingestion. To our knowledge, a case of propolis-induced erythema multiforme-like contact dermatitis has hitherto not been described. This type of contact dermatitis caused by propolis provides evidence for the strong sensitization potency of propolis.

Supporting Information

Additional Supporting Information may be found in the online version of this article:

Figure S1. (a) Positive (++) patch test reaction to *Myroxylon pereirae* (balsam of Peru), nickel and fragrance mix I from the European baseline series. (b) Positive (+++) patch test reaction to the patient's own propolis essence 10% pet. and to propolis (10% pet.) from the Chemotechnique series.

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FRAGRANCE MIX 1

NICKEL

BAUNG PEROU

(a)

PROPOLIS

CHENO TECHNIC

PROPOLIS

10% huile vaseli

(b)