

CORRESPONDENCE

Systemic allergic contact dermatitis to black cumin essential oil expressing as generalized erythema multiforme

The seeds of *Nigella sativa*, more commonly known as black cumin, contain 0.4%-2.4% essential oil [1]. In addition to the increasing scientific attention paid to its antioxidant and anticancer activities [2], black cumin essential oil (BCEO) also has immunogenic properties. We report a case of severe systemic allergic contact hypersensitivity induced by both local and oral use of BCEO.

A 56-year-old woman, with a history of allergic contact dermatitis to nickel, presented with a 2-day history of severe bullous target-like lesions, compatible with an erythema multiforme, without Nikolski's sign, nor mucosal involvement (*figure 1*). Histopathological characteristics of a lesion included a lymphocytic infiltrate at the dermal-epidermal junction, dermal edema, basal vacuolization and keratinocyte necrosis. The eruption began in the auditory canals, spreading to the sides of the neck, trunk and back, and cleared within 1 month with systemic corticosteroid treatment. She had been treated 15 days before the eruption for mental fatigue, with daily ingestion of 2 capsules of BCEO (containing 500 mg of organic *Nigella sativa* oil and 7.5 mg of vitamin E) and application in the auditory canals of the same oil. No recent herpetic eruption or other drug intake was reported.

Skin tests were done with the form of BCEO used by the patient, i.e. pure BCEO. Patch tests, performed 4 months after resolution, revealed positivity +++ at 72 hours (according to ICDRG criteria), a patch stayed negative with vitamin E. Histological analysis of the positive skin test site revealed abundant spongiosis and lymphocytic exocytosis, resulting in the formation of epidermal vesicles, associated with an infiltrate of lymphocytes and eosinophils in the upper dermis, suggesting a delayed-type hypersensitivity reaction. The ROAT was positive (erythema, infiltration and diffuse papules) after 72 hours of twice daily applications, confirming that the patient was strongly allergic to BCEO. Oral provocation test with BCEO was not performed for ethical reasons and a definite elimination of this product was recommended to the patient.

Herbal medicines are often perceived by the general public as a "soft" alternative to Western Medicine, but the use of these substances can be risky since they can induce both irritant and allergic contact dermatitis [3]. In two previously reported cases, BCEO-induced allergic contact dermatitis was limited to the site of skin contact [4, 5].



Figure 1. Bullous target-like lesions in the auditory canals, along the sides of the neck and trunk.

We describe here the first case of BCEO-induced systemic allergic contact dermatitis, presenting as generalized erythema multiforme, after the use of both topical and oral BCEO. We hypothesize that the patient was sensitized though the cutaneous route and that the oral intake of BCEO may have contributed to the systemic extension of the lesions. Recently, a Stevens-Johnson syndrome induced by BCEO was notified (C. Bara, personal communication). Clinicians should be aware of potentially severe adverse events of essential oils [6], the more so since one compound of BCEO, i.e. thymoquinone, is currently being tested in clinics for the treatment of several types of cancers [2]. ■

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1. Ali BH, Blunden G. Pharmacological and toxicological properties of *Nigella sativa*. *Phytother Res*. 2003; 17: 299-305.
2. Padhye S, Banerjee S, Ahmad A, Mohammad R, Sarkar FH. From here to eternity - the secret of Pharaohs: Therapeutic potential of black cumin seeds and beyond. *Cancer Ther* 2008; 6: 495-510.

3. Nosbaum A, Vocanson M, Rozieres A, Hennino A, Nicolas J. Allergic and irritant contact dermatitis. *Eur J Dermatol*. 2009; 19: 325-32.
4. Steinmann A, Schätzle M, Agathos M, Breit R. Allergic contact dermatitis from black cumin (*Nigella sativa*) oil after topical use. *Contact Derm* 1997; 36: 268-9.
5. Zedlitz S, Kaufmann R, Boehncke W. Allergic contact dermatitis from black cumin (*Nigella sativa*) oil-containing ointment. *Contact Derm* 2002; 46: 188.
6. Vigan M. Essential oils: renewal of interest and toxicity. *Eur J Dermatol* 2010; 20: 685-92.

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