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Herbal medicine as a cause of recurrent facial oedema

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Case Report

A 61-year-old non-atopic man was referred to us with complaints of recurrent and increasingly frequent episodes of facial oedema, typically accompanied by erythema and a burning sensation. The symptoms had affected him intermittently over a 20-year period; they mostly lasted for approximately 7–14 days per episode, and were followed by spontaneous resolution (Fig. 1). There was no history of concomitant itch, urticaria, or swelling of the tongue or airways. The patient was otherwise in good health and took no prescription medications. He had previously been evaluated on multiple occasions by his general practitioner and twice by allergists, but the cause of facial oedema remained unresolved. Although the episodes of facial oedema normally appeared only once every second to third year, their frequency had increased dramatically over the winter of 2013–2014, reaching a total of eight. Importantly, as he developed pneumonia during the autumn of 2013, his children bought him a bottle of Echinaforce® (Fig. 2), a herbal medicine intended to improve his immune system (herb and root extract from the plant *Echinacea purpurae*, in the plant family Asteraceae/Compositae) (1). Accordingly, each time he felt ill, he took Echinaforce®.

The allergist had performed extensive blood screening and prick testing with inhalation and food allergens, and with latex protein, prior to referral – all were normal or gave negative results. We then performed extensive patch testing, including with the European baseline series, a fragrance series, relevant occupational allergens, and the patient's personal care products, to identify possible contact allergy. The only positive reaction was to sesquiterpene lactone (SL) mix on three readings (2+ on D2, 2+ on D5, and 1+ on D7). The patient was asked about previous symptoms related to plants containing SL (2), and reported that the first episode of facial oedema appeared after he had purchased a house with a connecting overgrown garden in the mid-1990s. Also, he had sometimes noticed itchy dermatitis on the legs while wearing shorts and removing weed. When informed about the possible connection between contact allergy to plants containing SL, repeated intake of Echinaforce, and the development of facial oedema, he confirmed that the facial oedema occurred after oral intake of Echinaforce®.

Fig. 1. The patient's private pictures taken when he was symptomatic (a) and when he was asymptomatic (b).

Discussion

Allergic reactions to SL may present clinically as facial oedema and erythema rather than typical allergic contact

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Fig. 2. The herbal medicine Echinaforce® used by the patient.

dermatitis, which is characterized by papules and vesicles. SL allergy tends to mainly affect patients with atopic dermatitis and age >40 years. Recurrent summertime flares, winter remissions and eruptions that affect ultraviolet-exposed body areas are typical, and may guide the clinician towards the diagnosis (2). Importantly, patch testing is the only method for detecting contact allergy to SL. The main source of SL is the Asteraceae/Compositae family of plants, which consist of >25 000 species, found throughout the world as decorative plants, weeds, and food plants (3). Our patient was most likely sensitized to SL from gardening, but developed repeated eruptions during the winter of 2013–2014, owing to oral intake of herbal medicine containing SL. He did not observe reactions after ingestion of SL-containing vegetables.

It is estimated that approximately 5–10% of patients attending dermatological clinics for dermatitis have symptoms caused by plants or plant products (3). Sensitization results from both direct and indirect (airborne) skin contact. Ingestion of herbal products has been reported to cause exacerbation of already established allergic contact dermatitis, and the deterioration of our patient's condition following the intake of Echinaforce® illustrates this phenomenon (2).

Despite a global turnover of 62 billion dollars in 2009 (4), herbal medicines often lacks proper scientific validation. Review articles on the safety of herbal medicines derived from Asteracea/Compositae species describe severe adverse reactions, including anaphylaxis, acute asthma attacks, and facial and upper airway angioedema (1, 5). Our case highlights three important points: (i) facial oedema can be caused by contact allergy to plants, (ii) patch testing is essential to diagnose SL allergy, and (iii) the use of herbal medicine may result in unexpected and serious adverse reactions, and should be included in the medical history of patients with facial oedema.

References

1 Paulsen E. Contact sensitization from Compositae-containing herbal remedies and cosmetics. *Contact Dermatitis* 2002: **47**: 189–198.

2 Warshaw E M, Zug K A. Sesquiterpene lactone allergy. *Dermatitis* 1996: **7**: 1–23.

3 Le Coz C J, Ducombs G, Paulsen E. Plants and plant products. In: *Contact Dermatitis*, 5th edition, Johansen J D, Lepoittevin J P, Frosch P J (eds): Berlin, Heidelberg, Springer, 2011: pp. 873–899.

4 Cravotto G, Boffa L, Genzini L, Garella D. Phytotherapeutics: an evaluation of the potential of 1000 plants. *J Clin Pharm Ther* 2010: **35**: 11–48.

5 Huntley A, Coon J, Ernst E. The safety of herbal medicinal products derived from echinacea species. *Drug Saf* 2005: **28**: 387–400.

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