Systemic Contact Dermatitis from Propolis Ingestion

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Propolis, also known as bee glue, is a substance collected by worker bees and it is used as a material for constructing and maintaining their beehives. It has been used topically and orally by humans for its anti-inflammatory properties. However, the growing use of propolis has been paralleled by reports of allergic contact dermatitis as a reaction to the substance. Contact dermatitis with generalized cutaneous manifestations elicited by propolis ingestion has not been previously reported. Here we report on the first case of systemic contact dermatitis from propolis ingestion in a 36-year-old woman. (Ann Dermatol 23(1) 85 ~ 88, 2011)

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INTRODUCTION

Propolis is a resinous material collected from trees, and it is increasingly being used in cosmetic and medicinal preparations as an herbal remedy. Products containing propolis are marketed in various oral forms such as tablets, toothpastes, gargles, syrups and lozenges. However, adverse reactions due to propolis ingestion have been reported and these include allergic contact cheilitis, stomatitis, perioral eczema, labial edema, oral pain and dyspnea. As these products are increasingly being used for many purposes, the potential adverse consequences should be closely examined.

CASE REPORT

A 36-year-old woman presented with severely pruritic, multiple, erythematous papules, patches and edema of the face, neck, arms, abdomen and thighs. Before the cutaneous eruption, the patient had been ingesting propolis solution as a natural tonic for a few weeks (Fig. 1). She had obtained the propolis solution from a beekeeper. The cutaneous examination revealed swollen erythematous papules and patches on the face, neck, abdomen and thighs, and marked erythematous swelling with oozing and crusting on the bilateral forearms (Fig. 2). The patient denied she had made any changes of using medicinal or cosmetic products such as hair dye and fragrances. The past history and family history revealed no specific findings except for the use of a propolis ointment on the patient’s hands seven years ago. The patient did not recall any adverse effects at that time.

A skin biopsy was performed from the patient’s left forearm lesion. The histopathological findings revealed...
Fig. 2. (A) Erythematous patches and swelling on the face and (B) erythematous swelling with oozing and crusting on the forearms.

Fig. 3. Spongiosis, edema of the papillary dermis with vascular dilation and a perivascular infiltration of eosinophils and lymphocytes (H&E, x100, x400).

Fig. 4. A patch test to propolis showed an extreme positive reaction (+++) on the 96-hour-reading.

Spongiosis with marked crust, edema of the papillary dermis with vascular dilation and perivascular infiltration of eosinophils and lymphocytes (Fig. 3). The findings were consistent with contact dermatitis. The cutaneous lesions improved after four weeks of applying topical steroids and the oral administration of steroids and antihistamines. After a washout period of four weeks following the complete healing of the skin eruptions, a patch test with propolis (as is and also as 10% propolis in petrolatum) and using the standard Korean series was performed. The patient had an extreme positive patch-test reaction to propolis as is and the 10% propolis in petrolatum (both ++++) at the 48-hour and 96-hour readings (Fig. 4). The patient showed a strong positive reaction to the 4-phenylenediamine base (++) and doubtful reactions
positive reaction to balsam of Peru. The increase in the use and popularity of propolis-containing products has been paralleled by the linear increase in the frequency of propolis-related allergic contact dermatitis. Originally, contact allergy to propolis was mostly reported in people with occupational exposure, yet most of the current cases are the result of the use of propolis-containing products that are either applied topically or ingested orally. Ingested propolis has resulted in allergic contact cheilitis, stomatitis, perioral eczema, labial edema, oral pain and dyspnea. However, contact dermatitis with a generalized cutaneous manifestation after the oral ingestion of propolis has not been previously reported. Propolis-induced systemic contact dermatitis was likely as the cutaneous eruption in our patient developed in response to the systemic exposure to propolis. Systemic contact dermatitis can be elicited by transepidermal, subcutaneous, intravenous, intramuscular or oral exposures. Systemic contact dermatitis caused by food has been described, including several cases of systematically-induced contact dermatitis from aromatic substances and balsam of Peru.

As propolis is commonly used in cosmetic and medicinal preparations, dermatologists should be aware of this important sensitizer. Obtaining a careful history and specifically the use of propolis-containing products should be done when allergic contact dermatitis is suggested without any suspected contact history.

REFERENCES
