

Correspondence

Type I and type IV systemic contact dermatitis to balsam of Peru with a particular reaction to cinnamyl alcohol

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A 46-year-old Pakistani woman presented with a 2-year history of a recurrent daily urticarial rash, throat tightness after ingestion of certain foods and intermittent eczema affecting her legs. Results of previous skin prick tests to common foods were unremarkable. She had sub-clinical hypothyroidism and was on no relevant medications.

Physical examination revealed mild eczema on the lower legs that responded to topical steroids. Dermographism was not present. The history of the rash was suggestive of chronic spontaneous urticaria and a non-specific dermatitis. The patient was concerned that unaccountable foods were triggering her symptoms. She was patch tested to an extended European baseline, clothing and azo dyes, and modified fragrance series (Table 1) with readings taken at 48 and 96 h. The latter reading showed positive results for cobalt (+), balsam of Peru (BOP) (resin of *Myroxylon pereirae*) (+), hydroxyperoxides of linalool (++) and hydroxyperoxides of limonene (++) with a negative reaction to cinnamyl alcohol. Appropriate advice was given on avoiding contact with fragranced substances. The possibility of food hypersensitivity to cobalt and BOP was discussed, and the patient was informed of the need to avoid foods that contain histamine (cheese, spinach and tomatoes) and those that

trigger histamine release (citrus fruit, bananas, pineapples, strawberries and papaya). Given the unexplained hive-like reactions and the patient's concerns with its association with foods, a short patch test was performed on the lower back to our modified fragrance battery (10 allergens; Table 2), cobalt and BOP. An immediate urticarial reaction to BOP and cinnamyl alcohol (Fig. 1a) developed after 20 min, which subsided at 24 h (Fig. 1b). Dietary avoidance of BOP containing food such as curry (contains cinnamon), fizzy drinks (Dr Pepper contains benzoate), and chewing gum (contains eugenol-mint flavouring) resulted in a marked improvement in the patient's symptoms; she now has only one urticarial eruption a day and has no eczematous changes on her legs.

A type IV delayed hypersensitivity to BOP resulting in an eczematous eruption is common and the incidence has been estimated at 5.8%.¹ In that study, relevance was quoted at 67%, which does not take into account a possible food-mediated contribution and may mean the incidence is under-reported.¹ BOP is a natural resin that can be used in the treatment of burns and wounds because of its antiseptic properties, and is also found in a number of citrus-scented products (perfumes, colognes, air fresheners, candles, cosmetics, oral hygiene products, haircare products, and household or industrial cleaners).²

Table 1 Modified fragrance series.

	Allergen
1	2% Cinnamyl alcohol
2	2% Eugenol
3	1% <i>Evernia furfuracea</i>
4	1% Hydroperoxides of linalool
5	2% Citral
6	2% Isoeugenol
7	0.3% Hydroperoxides of limonene
8	2% <i>Evernia prunastri</i>
9	1% Cinnamal
10	2% Hydroxycitronellal

Table 2 Identifiable foods that contain balsam of Peru and cause cutaneous flares on ingestion.

Food group	Examples
Citrus fruits	Oranges, lemons, grapefruit, bitter oranges, tangerines, and mandarin oranges, marmalade, juices
Flavouring agents	Danish pastries, bakery goods, sweets, chewing gum
Spices	Cinnamon, cloves, vanilla, curry, allspice, anise and ginger
Spicy condiments	Ketchup, chilli sauce, barbecue sauce, chutney and liver paste
Beverages	Alcohol (e.g. wine, beer, gin and vermouth), cola and other soft drinks (e.g. Dr Pepper, flavoured tea)
Tomato-containing sauces	Chilli, pizza, Italian and Mexican foods with red sauces
Foods	Pickles and pickled vegetables, chocolate

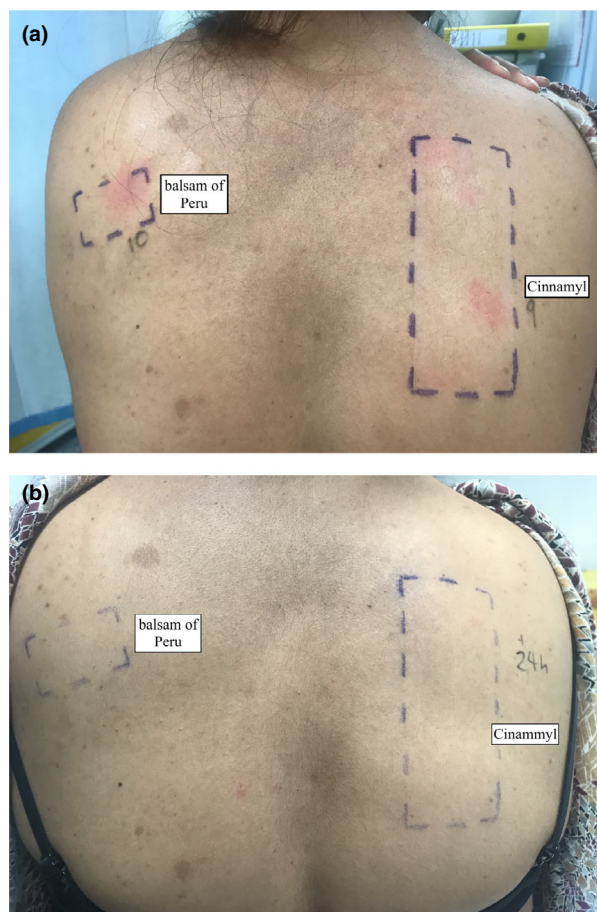


Figure 1 (a) An immediate urticaria to balsam of Peru (resin of *Myroxylon balsamum* var. *pereirae*) and cinnamyl alcohol developed after 20 min, and (b) had subsided at 24 h.

It also has preservative properties. BOP contains cinnamic acid, cinnamyl cinnamate, benzyl benzoate, benzoic acid, vanillin and eugenol, and can also contain ferulic acid and coniferin.² A number of these components are found in food and food products (Table 2): eugenol is found in spices, vanillin is a major component of vanilla, cinnamyl is found in cinnamon, benzoic acid derivatives are found in many preservatives, ferulic acid is found in citrus and tomato, and coniferin alcohol is a fermentation product of brewer's yeast and thus is present in alcoholic beverages.¹

Systemic contact dermatitis (SCD) occurs when parenteral or oral exposure to certain allergens elicits a reaction very similar to an allergic contact dermatitis after previous cutaneous sensitization with the same allergen has occurred.² Typical culprits include metal salts (nickel, mercury cobalt, chromium), substances of plant origin (poison ivy, BOP), drugs (antibiotics, nonsteroidal anti-inflammatory drugs, antihistamines, corticosteroids) and also preservatives. Both immediate urticaria (type I IgE-mediated-like reaction)³ and a chronic eczema (type IV

reaction)¹ have been described to oral ingestion of BOP but the mechanism is poorly understood.^{2,4} Food avoidance as treatment may be useful but is a contentious issue.^{4,5} In a study of 45 patients who had a chronic dermatitis and positive patch tests to BOP, there was complete or significant improvement of dermatitis in 47%.⁶

Our patient is unique as she presented with both type I and type IV hypersensitivity reactions. Patch testing showed that she had delayed eczematous reactions to various allergens including BOP, and she also had immediate urticarial reactions to cinnamyl and BOP. Oral avoidance of cinnamon-containing foods has resulted in a marked improvement in her symptoms. This case serves as a reminder to advise patients with positive patch tests BOP that dietary avoidance of foods containing BOP may be required.

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IgG4-related disease: a rare case of isolated cutaneous involvement

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Immunoglobulin G4-related disease (IgG4-RD), a relatively new entity of unknown pathogenesis, which is characterized by plasma cell-rich lesions and a fibroinflammatory process in various organs, including the skin, pancreas, biliary tract, periorbital tissues, kidney, lung, aorta, meninges, and salivary, lacrimal, thyroid and pituitary glands.¹ The disease affects the middle-aged to elderly people, and the sex