

Allergic contact dermatitis to mango flesh

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A 22-year-old white female student presented to the Emergency Department with a 2-day history of patchy pruritic erythema of the face, neck, and arms with periorbital edema. The eruption began as an isolated patch of nasal erythema, with subsequent extension to involve the entire face. Within 2 days, fine pinpoint papules were noted on the face, anterior chest, neck, and upper extremities. Periorbital edema was present without intraoral abnormalities or laryngeal changes. An erythematous, mildly lichenified plaque was noted on the ventral left wrist.

The past medical history was significant for two similar, milder episodes of allergic reactions of uncertain etiology occurring within the previous 2 months. The previous eruptions resolved after treatment with oral loratadine and topical fluocinonide cream 0.05%. The patient denied any history of contact urticaria or new household or personal hygiene contactants, although she did report frequent ingestion of peeled mangoes. Her brother had a history of eczematous dermatitis.

In the Emergency Department, the patient was administered intravenous diphenhydramine and a single 50 mg dose of oral prednisone. She continued treatment with a 5-day course of prednisone, 50 mg daily, with loratadine, 20 mg daily, and diphenhydramine as needed; however, no symptomatic improvement was seen over 4 days. She was then advised to restart fluocinonide cream twice daily.

Patch testing was performed to the North American Contact Dermatitis Group Standard Series utilizing methods of the International Contact Dermatitis research group with Finn chambers. Mango skin and mango flesh harvested 5 mm below the skin surface were also placed in duplicate and tested under Finn chambers. Positive (1+) reactions were noted to nickel and *p*-tertbutylphenol formaldehyde resin, and bullous reactions were found to mango skin and surface flesh in duplicate (Fig. 1). Complete avoidance of mango led to resolution of the initial eruption. The clinical relevance of nickel and *p*-tertbutylphenol formaldehyde resin was thought to be associated with the wrist lesion immediately below a glued portion of a wristwatch strap and metal clasp.

Discussion

Mango dermatitis, the common term referring to allergic contact dermatitis attributed to the sap, skin, bruised leaf, or stem of *Mangifera indica*, has been reported in the literature.^{1,2} The mango plant, found in Asia, India, Hawaii, Florida, Mexico, and Central America, shares similar chemical compounds to other allergens of the Anacardiaceae plant family, which includes the poison ivy group. Although mango ingestion has been reported to cause anaphylactic reactions,^{3,4} mango pulp has not previously been found to cause contact allergic reactions.

The antigenic oleoresins urushiol and cardol in mango have shown cross-reactivity to the contact allergens of *Toxicodendron* plants (including poison ivy, poison oak, and poi-

son sumac), *Anacardium occidentale* (cashew nut tree), *Semecarpus anacardium* (Indian marking nut), *Rhus vernicifera* (lacquer tree), and *Anacardium melanorrhoea* (rengas or black varnish tree).^{1,5} All are members of the Anacardiaceae family of tropical and subtropical plants, which sensitize via urushiol (3',5'-pentadecylcatechol).⁶ The ginkgo tree fruit contains related allergenic catechols, as does the Brazilian pepper tree commonly cultivated in Florida and known as the "Florida Holly."^{5,6} Mango dermatitis may present similarly to poison ivy dermatitis, with linear papulovesicles characteristic of phytodermatitis, but also has a wide spectrum of clinical presentations.¹

Calvert *et al.*¹ reported four cases of mango dermatitis, confirmed by patch testing to a series composed of sap, crushed leaf, crushed stem, and fruit skin, with strongly



Figure 1 Positive patch test reactions, in duplicate, to mango skin (left column) and mango flesh 5 mm below the skin (right column)

positive reactions read at 48 and 96 h. Patients' exposures included picking mangoes and contact with the mango tree itself. Clinical presentations included linear papulovesicles and, most commonly, a combination of urticarial and eczematous plaques. Biopsies revealed epidermal spongiosis and intraepidermal vesiculation, and all cases showed a moderately heavy superficial and deep dermal lymphohistiocytic infiltrate with variable numbers of perivascular and interstitial eosi-

nophils. Two cases presented with dermal edema. The severity of presentation corresponded to both previous exposure to Anacardiaceae family members and the potency of the tree component to which patients were exposed, with the sap being the most antigenic. The time to eruption was influenced by previous contact, ranging from within hours in those with previous exposure to 6 days on first exposure. Tucker and Swan⁷ reported the case of a man with a pruritic and eczematous eruption on his leg for 3 days which presented 1 week after peeling a mango and resting his hand on that site. He had been sensitized to poison ivy and oak when much younger.

It was previously thought that the pulp of the fruit was safe for mango-sensitive individuals, provided that someone else peeled it for them.² Previous reports of diagnostic patch testing for mango dermatitis have not included the flesh immediately below the skin surface. We report that the 5 mm of flesh under the skin contains enough penetrated antigen to elicit a positive response in sensitized individuals. The removal of skin with some surface flesh may provide a safer strategy for allergic patients wishing to continue enjoying mangoes.

References

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