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Title: Non-occupational protein contact dermatitis induced by mango fruit

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Introduction: Immediate contact skin reactions are considered a subset of the contact urticaria syndrome, which includes contact urticaria and protein contact dermatitis (PCD). These entities are clinically expressed by development of wheals, erythema and/or eczema within minutes after contact with proteins or low molecular weight allergens. Herein we report a case compatible with a PCD caused by exposure to mango.

Case report: A 51-year-old woman presented with a severe acute-onset pruritic eczematous cheilitis involving both lips and a perioral erythematous dermatitis. The lesions appeared 2 weeks before consultation. Accompanying angioedema, urticaria, or associated systemic symptoms were not present. Past medical history was unremarkable. The patient worked as a household keeper and upon further questioning, she recalled episodes of generalized eczema after having had contact with litre tree (*Lithracea caustica*), a native Chilean tree of the family *Anacardiaceae*. The patient attributed her dermatitis to fresh-cut mango intake. Nonetheless, she referred previous mango intake without any negative consequences.

Open patch tests were negative whereas occluded patch tests revealed a strong reaction to mango flesh at 48 hours (+++). A prick-by-prick test evinced an immediate moderate-strong reaction to mango flesh (wheal of 9mm in diameter), whereas mango skin and kiwi flesh were negative.

Thus, the plausible diagnosis was PCD due to mango flesh. The clinical picture resolved with a week course of topical steroids. Complete avoidance of mango was advised.

Discussion

Mango is a worldwide consumed tropical fruit from the mango tree (*Mangifer indica*) of the *Anacardiaceae* family. Mango fruit contains several potentially sensitizing substances like catechols (including urushiol), resorcinols and proteins^{1,2}. However, allergic reactions to mango

fruit have rarely been reported. A spectrum of hypersensitivity reactions ranging from immediate type I responses (urticaria, angioedema, oral allergy syndrome) to delayed type IV reactions (contact dermatitis) has been described. Sensitization to mango may develop either by a direct contact or secondary to a cross-reactivity reactions with other urushiol-containing plants, particularly belonging to *Anacardiaceae* family³.

Reports of dermatitis due to mango flesh are scarce, usually corresponding to contact dermatitis³. Most cases of mango allergic contact dermatitis occur in non-atopic individuals and are related to the sap, mango skin or leaves¹ exposure either after a direct contact or ingestion. In the lips, it is manifested as an eczematous cheilitis. Patch testing confirms the delayed hypersensitivity reaction. In such cases, prick-by-prick tests are thought to be negative⁴.

PCD was initially reported as an occupational contact dermatitis, mainly observed in food handlers with eczematous lesions confined to the hands and the forearms. Isolated reports of chronic cheilitis with erythema and dryness secondary to several foods (hazelnut, carrots, mustard) have been reported.⁵ The pathogenesis of PCD remains seen as a thorny issue, but most authors claim the co-occurrence of type I and IV reactions⁶. The diagnosis of PCD lies in prick tests and/or scratch tests, as patch tests are rarely positive; specific IgE may be useful if available⁶. Although initially the diagnosis of PCD was restricted to those patients with positive scratch but negative patch test result, further studies expanded PCD to cases showing an additional type IV contact allergy to proteins. Furthermore, isolated reports of non-occupational PCD and cases showing both positive Prick-by-prick and patch tests have been reported.⁷⁻⁹ To the best of our knowledge, there are no previous reports in the literature of PCD due to mango. The reported patient represents an example of non-occupational variant presenting a combined type I and IV hypersensitivity to mango flesh.

The reported case illustrates the rare occurrence of an acute eczematous localized contact dermatitis showing positive results of both immediate prick-by-prick and delayed patch tests with mango flesh. The real significance of these results and its relationship between either more classic occupational PCD or allergic contact dermatitis remains to be elucidated.

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Figures: