An acute, progressive, asymmetrical pruritic eruption

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CASE

A boy, aged 15 years, presented to his general practitioner (GP) with a four-day history of a pruritic and progressively worsening cutaneous eruption.

He had been picking mangoes in Queensland five days prior. While attempting to remove the stem of a mango with his right hand, he experienced a high-pressure discharge of mango sap onto his skin and clothing. He was wearing a T-shirt and shorts at the time.

There were no immediate symptoms after the exposure to mango sap and he did not have an opportunity to clean the sap from his skin for several hours.

By the time he presented to his GP, he had an extensive eruption on his trunk and upper limbs (Figure 1A) with sparing of his back (Figure 1B).

He was not on any medications or supplements and had no drug or food allergies. The patient and all family members have consumed mangoes without incident in the past.

QUESTION 1

How would you describe the eruption in Figure 1?

QUESTION 2

What does the linear rash on his wrist in Figure 2 suggest?

QUESTION 3

What is your working differential diagnosis?

QUESTION 4

What would be your management?

ANSWER 1

The rash was asymmetrical and mainly affected his left trunk and forearms with involvement of both antecubital fossae. It was erythematous with confluent plaques and papules. There were no visible excoriations, vesicles or bullae. There was sparing of his back.

ANSWER 2

The linear pattern of the eruption on his wrist is suggestive of contact dermatitis. It is quite rare in skin disease for acute geometric shapes to occur in the absence of koebnerisation, congenital mosaicism and dermatitis artefacta (self-harm). Other linear patterns of inflammatory disease include conditions such as dermographism and lichen striatus. These are not consistent with the patient's history and the rest of his cutaneous signs. The patient stated that he normally wears a silver wrist bracelet, which was removed prior to his presentation to his GP. Mango sap had possibly pooled around his bracelet. Linear patterns are also seen in plant dermatitis when people brush past plants to which they are allergic.

ANSWER 3

The history of mango sap exposure and subsequent sunlight exposure raise a few potential diagnoses.

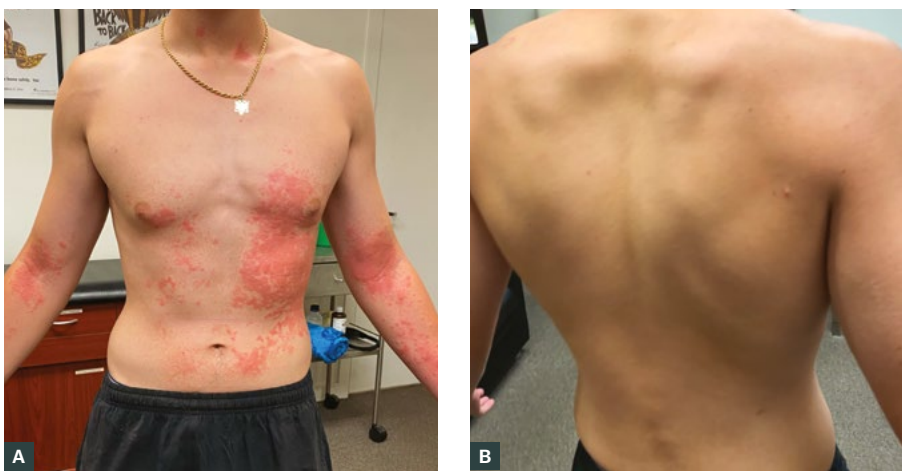

Figure 1. (**A**) Cash shown on trunk and upper limbs. (**B**) Posterior aspect of the trunk.

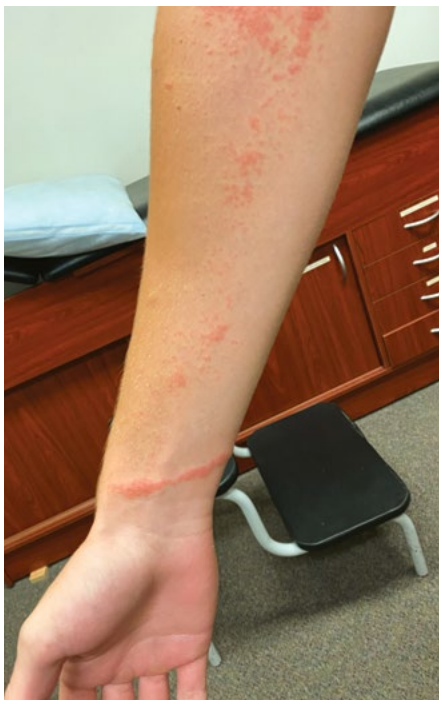

Figure 2. Linear eruption on the patient's right wrist.

The main differential diagnoses to consider include allergic contact dermatitis, irritant contact dermatitis and phytophotodermatitis.

Allergic contact dermatitis, a delayed type IV hypersensitivity reaction, is the most commonly reported manifestation of mango allergy. In comparison, type 1 hypersensitivity reactions, which can present with urticaria, angioedema and severe anaphylactoid reactions are uncommon.[1]

The reported causative allergen in mango allergic contact dermatitis is urushiol, which might cross-react with other plants, such as poison ivy. Following an initial exposure that leads to sensitisation, subsequent exposure causes an inflammatory response with development of a rash. Characteristically, the rash occurs after a delay of 6–48 hours and worsens despite removal of the offending agent.

Irritant contact dermatitis is another possibility given that mango sap itself is caustic. An acute irritant contact dermatitis presents with burning or painful skin, whereas a delayed acute irritant contact dermatitis might present more similarly to an allergic contact dermatitis 8–24 hours after initial exposure.[2,3]

Phytophotodermatitis is a phototoxic reaction caused by UV exposure to the skin after coming into contact with furocoumarins, which are found in certain plants.[4] This is classically seen with citrus fruits like lime, but has rarely been described with mango sap.[5–7] Phytophotodermatitis is unlikely here given the atypical distribution of the rash on his torso but not his face. The patient was wearing a T-shirt, which protected him from UV light at the time of sap exposure.

ANSWER 4

A skin biopsy could be performed, but in this case was not done as it was unlikely to change management.

Patch testing can be done for mango with extracts of pulp and skin, to confirm the diagnosis of allergic contact dermatitis. Both allergic and irritant contact dermatitis can be managed with either topical or systemic corticosteroids with the addition of emollients.[8]

In view of the severity of the eruption, the patient was treated with a weaning dose of oral prednisolone, topical corticosteroids and non-sedating oral antihistamines prescribed in consultation with a dermatologist, and responded well.

Key points

- Contact dermatitis should be considered in the differential diagnosis of rashes occurring in those picking fruit.
- It is important to educate fruit pickers to use appropriate protective equipment and picking technique to avoid unwanted exposure to potential noxious stimuli.
- Management of contact dermatitis includes avoidance of the offending agent, regular emollients, topical corticosteroids or calcineurin inhibitors, and when necessary, systemic short-term, anti-inflammatory agents such as prednisolone.

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References

1. Berghea EC, Craiu M, Ali S, Corcea SL, Bumbacea RS. Contact allergy induced by mango (*Mangifera indica*): A relevant topic? Medicina (Kaunas) 2021;57(11):1240. doi: 10.3390/medicina57111240.
2. Patel K, Nixon R. Irritant contact dermatitis – A review. Curr Dermatol Rep 2022;11(2):41–51. doi: 10.1007/s13671-021-00351-4.
3. Sheehan MP. Plant associated irritant & allergic contact dermatitis (phytodermatitis). Dermatol Clin 2020;38(3):389–98. doi: 10.1016/j.det.2020.02.010.
4. Harshman J, Quan Y, Hsiang D. Phytophotodermatitis: Rash with many faces. Can Fam Physician 2017;63(12):938–40.
5. Haddad Jnr V. Skin manifestations caused by Brazilian traumatic, allergenic, and venomous plants: Main species, therapeutic and preventive measures. J Venom Anim Toxins Incl Trop Dis 2004;10(3):199–206.
6. Goon AT, Goh CL. Plant dermatitis: Asian perspective. Indian J Dermatol 2011;56(6):707–10. doi: 10.4103/0019-5154.91833.
7. Kotrulja L, Ozanić-Bulić S, Sjerobabski-Masnec I, Šitum M, Poduje S. Photosensitivity skin disorders in childhood. Coll Antropol 2010;34 Suppl 2:263–66.
8. Li Y, Li L. Contact dermatitis: Classifications and management. Clin Rev Allergy Immunol 2021;61(3):245–81. doi: 10.1007/s12016-021-08875-0.

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