Lesions With a Distinct Fingerprint Presentation

What's the diagnosis?

A 17-year-old adolescent girl presented with scattered brown macules over the dorsal aspect of the hands bilaterally and a brown patch in the shape of a hand on the right upper arm of 3 weeks' duration.

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The Diagnosis: Phytophotodermatitis

Phytophotodermatitis (PPD) is a nonimmunologic cutaneous phototoxic inflammatory reaction resulting from the activation of photosensitizing botanical agents such as furanocoumarins in contact with the skin by exposure to UVA light.[1,2] Furanocoumarins, including psoralens and angelicins, become photoexcited and covalently bind to pyrimidine bases on DNA strands, resulting in acute damage to epidermal, dermal, and endothelial cells.[1,3]

Vegetation most commonly implicated in this plant solar dermatitis are celery, fennel, parsnip, parsley, and hogweed (Apiaceae [formerly known as the Umbelliferae family]), as well as oranges, lemons, limes, and grapefruits (Rutaceae or citrus family).[1,3] Psoralens found in the Persian lime have been noted to cause phototoxic eruptions in the United States, with the rind containing higher concentrations than the pulp.[4]

Clinical features of PPD include erythema, edema, and vesicle or bullae formation 12 to 36 hours after psoralen and UV light exposure. Burning and pain may be present, but pruritus is not a common characteristic of the eruptions, distinguishing PPD from allergic phytodermatitis.

Hyperpigmentation appears on resolution of the lesions and slowly fades over months to years.[1,3,5] Mild exposure may lead to hyperpigmentation without a vesicular or erythematous eruption.[1] Phytophotodermatitis follows a benign course and often spontaneously resolves; however, prolonged hyperpigmentation may cause concern for these patients.

Phytophotodermatitis is common among patients preparing drinks and foods with citrus juices or after gardening. Our patient had prepared limeade 3 weeks prior to presentation. The distribution of cutaneous exposure to furanocoumarins influences clinical presentation and may range from blotches and streaks to distinct fingerprint smudges and handprints, as seen in our patient. The distinct full handprint on the right arm was striking. The bullous lesions and resulting hyperpigmentation may mimic burns and healing bruises. In children, PPD often is mistaken for child abuse.[1,6,7] In adults, it often is misdiagnosed as poison oak dermatitis, erythema multiforme, and thrombocytopenic purpura.[1,3] It is important to recognize PPD to avoid delay in or misdiagnosis and to better counsel patients on how to avoid recurrent episodes of PPD.

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