

# A sudden rash and blisters on the left leg in Bali

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## CASE REPORT

A 23-year-old previously healthy Dutch woman developed an erythematous, non-itching rash in a handprint pattern at the lateral side of her left thigh on the fourth day of a beach holiday in Bali. Apart from her stay on the beach and an enjoyable nightlife, her further exposure and travel history was unremarkable. In the following 24 hours, the rash became extremely painful with development of blisters at the sites of the erythema. Physical examination (*figure 1A*) revealed a tender skin with coalescing vesicles and bullae (*figure 1B and 1C*) atop streaky erythematous plaques on her left thigh (*figure 1A*). The patient was afebrile and the rest of the physical examination was unremarkable.

**Figure 1.** Physical examination revealed a tender skin (*A*) with coalescing vesicles and bullae (*B and C*) atop streaky erythematous plaques on her left thigh (*A*)



## WHAT IS YOUR DIAGNOSIS?

See page 234 for the answer to this photo quiz.

## DIAGNOSIS

The patient was diagnosed with 'Lime disease' or phytophotodermatitis as a result of exposure of lime juice to her left leg. Before the onset of the eruption, the patient had manually squeezed limes daily. Phytophotodermatitis is a phototoxic dermatological reaction that occurs when skin is exposed to lime or certain plants, or their extracts, containing furocoumarin (photosensitising agent), in combination with sunlight. Unlike photoallergic reactions, phototoxic reactions occur independently of the host's immune system. Exposure to long-wavelength ultraviolet radiation (UVA) can activate furocoumarin by absorption of photons, leading to type I reactions,<sup>1</sup> which are independent of oxygen and can cause cellular damage by forming aberrant cross-links in cellular DNA, resulting in inhibition of DNA synthesis. In type II reactions, psoralen and oxygen form free radicals, resulting in epidermal, dermal, and endothelial cell membrane damage that manifests as oedema, erythema, and bullae.<sup>1</sup>

The erythema develops 12-24 hours after exposure, with vesiculation occurring after 72 hours.<sup>2</sup> The lesions do not follow any dermatomes. Exfoliation and dyspigmentation follow, with resolution over 6-12 months, usually without scarring. The overall incidence of phytophotodermatitis is unknown and there appears to be no predilection for race. The differential diagnosis may include cellulitis, impetigo, erythema migrans, herpes virus infection,

allergic contact dermatitis and jellyfish envenomation.<sup>3,4</sup> Phytophotodermatitis in children may be misdiagnosed as child abuse, especially when the lesions have the appearance of a hand mark and fingerprints.

Here we report a case of lime-induced phytophotodermatitis. Careful history taking results in prompt recognition of this unique phototoxic reaction and an understanding of its cause will help physicians counsel patients to end this extremely painful skin reaction by avoidance of exposure and to prevent repeated episodes. In our patient, the eruptions resolved without specific treatment and the skin remained hyperpigmented for several months.

## REFERENCES

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