

# Recurrent Bilateral Lime Disease in a Young Female- Case Report

Allergy &amp; Rhinology

Volume 13: 1–3

© The Author(s) 2022

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/21526567221074944

journals.sagepub.com/home/aar



Lakshmi Nagireddi, DO<sup>1</sup> , Rachel Raimondo, OMS-III<sup>3</sup>,  
and Robert Hostoffer Jr, DO, FAAFP, FACOP<sup>3,2</sup>

## Abstract

**Introduction:** Lime phyto dermatitis, also known as margarita dermatitis, is a condition that results in a skin rash after sunlight exposure when handling certain plants. Misdiagnosis is common due to its resemblance to skin burns or allergic contact dermatitis. Detailed history and disease recognition is important to provide accurate treatment recommendations.

**Case Report:** A 32-year-old woman presented with a recurrent rash on her hands that would only occur in the summer months. She was previously misdiagnosed as allergic contact dermatitis. History revealed yearly vacations involving margaritas and squeezing lime into her drinks followed by exposure to sunlight. A presumptive diagnosis of lime phyto dermatitis was made and she was advised to avoid contact with limes followed by exposure to direct sunlight.

**Discussion:** Lime phyto dermatitis occurs after direct contact with lime and sunlight exposure. A phototoxic compound found in limes, Furocoumarin, has been implicated as a cause for lime disease. Detailed history is important in establishing a diagnosis of lime disease. Treatment is symptomatic with topical corticosteroids, avoidance of furocoumarin-containing objects, cold compresses, and subsequent UV exposure.

**Conclusion:** We present the first case of recurrent, bilateral phyto dermatitis in a 32-year-old woman following contact with limes and subsequent sunlight exposure in the summer months.

## Keywords

phytophotodermatitis, lime-induced phytophotodermatitis, citrus dermatitis

## Introduction

Phytophotodermatitis is a skin condition that is associated with sunlight exposure after handling certain plants.<sup>1</sup> Phytophotodermatitis secondary to lime exposure is also known as margarita dermatitis or lime-induced photodermatitis.<sup>2</sup> Diagnosis of this condition is often difficult due its resemblance to skin burns or allergic contact dermatitis.<sup>1</sup> Previous cases have been reported with a predominance in females after a one-time exposure to specific plants.<sup>1–4</sup> We describe the first case of recurrent, bilateral phytophotodermatitis in a 32-year-old woman following contact with limes and subsequent sunlight exposure in the summer months.

## Case Report

A 32-year-old woman with a history of mild intermittent asthma, allergic rhinitis and allergic conjunctivitis presented with concerns of a recurrent rash. The patient reported the presence of a rash on her hands that would only occur in the months of May and June over the past few years. The rash consisted of a confluent group of erythematous vesicles and bullae on the dorsal surfaces of her first and second digits

on bilateral upper extremities (Figure 1). It was initially non-pruritic and would become pruritic as the rash would progress with an associated burning sensation. In previous years she was diagnosed with allergic contact dermatitis of her hands and given a course of oral steroids which did result in the improvement of her symptoms.

However, a cause for her recurrent dermatitis was never established. Our patient initially denied the use of any products, hobbies, or activities that she would only perform in the summer months. Further history revealed that prior to her most recent reaction, she went to vacation in Florida, at which time she was on the beach, drinking margaritas and squeezing lime into her drinks. She noticed the rash starting to appear within 24 h. She then

<sup>1</sup>Broward Health Medical Center, Fort Lauderdale, Florida, USA

<sup>2</sup>University Hospitals, Cleveland Medical Center, Cleveland, Ohio, USA

<sup>3</sup>Lake Erie College of Osteopathic Medicine, Erie, Pennsylvania, USA

## Corresponding Author:

Lakshmi Nagireddi, DO, 5915 Landerbrook Drive, Suite 110, Mayfield Heights, OH 44124, USA.

Email: supriya.nagireddi@gmail.com





**Figure 1.** Shows the manifestation of lime-induced photodermatitis in an adult female with similar findings noted on the other hand.

admitted to yearly beach trips in the months of May and June where she would often be drinking margaritas outside in the sun. At the time of this evaluation, no cutaneous reaction or hyperpigmentation was present. Due to the recurrency of her symptoms, diagnosis of lime-induced photodermatitis was difficult, and she was often misdiagnosed as allergic contact dermatitis. A presumptive diagnosis of lime-induced photodermatitis was made and our patient was ultimately advised to avoid contact with limes and exposure to direct sunlight.

## Discussion

Lime-induced photodermatitis occurs after contact with lime and exposure to sunlight.<sup>4</sup> It can occur on the face, neck, or extremities.<sup>2</sup> However, epidermal injury is limited to areas of direct contact with lime, or as described in our case, with the beverage glass used.<sup>2</sup> Plants containing furocoumarin, a naturally occurring phototoxic compound found in limes, has been implicated as a cause for lime-induced photodermatitis.<sup>3</sup> With the absorption into the skin and exposure to UVA radiation, furocoumarin causes damage to the cell DNA and membrane resulting in epidermal injury.<sup>3</sup> Other furocoumarin containing plants and fruits include celery, carrots, lemons, dill, grapefruit, oranges, parsnip, and peppers.<sup>3</sup> While lime is the most known cause of phytophotodermatitis, celery is the most common cause.<sup>1</sup>

Detailed history is important in establishing a diagnosis of lime-induced photodermatitis. In the adult population,

lime-induced phytophotodermatitis is often misdiagnosed as allergic contact dermatitis due to its similar appearance and distribution.<sup>3</sup> Unlike allergic contact dermatitis, it does not occur after every lime exposure as it must be followed by exposure to UVA radiation.<sup>3</sup> It is common for phytophotodermatitis to result in hypo- or hyperpigmented areas on the skin months after the initial reaction.<sup>1-4</sup> Spontaneous disappearance or a linear gravity pattern of pigmentation are key diagnostic clues of phytophotodermatitis.<sup>3</sup> Alternatively, in the pediatric population, this condition can be mistaken for child abuse due to the distribution of skin discoloration present.<sup>2</sup> Previous case reports have shown that handling citrus fruits and then proceeding to hold a child can result in skin discoloration in the form of handprints. Treatment is symptomatic with topical corticosteroids for painful vesicles, avoidance of furocoumarin-containing objects, cold compresses, and subsequent UV exposure.<sup>2,3</sup> While use of sunscreen can potentially decrease the risk of lime's disease by blocking UV rays, not all products are protective against UVA radiation.

## Ethical Approval

This study was approved by our institutional review board.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## Statement of Human and Animal Rights

This article does not contain any studies with human or animal subjects.

## Statement of Informed Consent

There are no human subjects in this article and informed consent is not applicable.

Conflict of Interest: none.

Funding Source: none.

Abbreviations: none.

## Author Contributions

Lakshmi Nagireddi, DO: Conception of study, analysis and interpretation of data, data generation, preparation and revision of manuscript.


Rachel Raimondo, OMS-III: Conception of study, analysis and interpretation of data, preparation and revision of manuscript.

Robert Hostoffer Jr, DO, FAAFP, FACOP3: Conception of study, preparation and revision of manuscript.

**Trial Registration**

Not applicable, because this article does not contain any clinical trials.

**ORCID iD**

Lakshmi Nagireddi  <https://orcid.org/0000-0003-0554-5213>

**References**

1. Choi JY, Hwang S, Lee SH, Ho Oh S. Asymptomatic hyperpigmentation without preceding inflammation as a clinical feature of Citrus fruits-induced phytophotodermatitis. *Ann Dermatol.* 2018;30(1):75–78.
2. Fitzpatrick JK, Kohlwes J. Lime-Induced phytophotodermatitis. *J Gen Intern Med.* 2018;33(6):975.
3. Harshman J, Quan Y, Hsiang D. Phytophotodermatitis: rash with many faces. *Canadian Family Physician.* 2017;63(12):938–940.
4. Abugroun A, Gaznabi S, Natarajan A, Daoud H. Lime-Induced phytophotodermatitis. *Oxf Med Case Reports.* 2019;11(11):470–472.