

# An aberrant reaction to *Candida albicans* antigen used for recalcitrant warts successfully treated with oral prednisone



Andrew La'Pelusa, BS,<sup>a</sup> Jennifer Rorex, BS,<sup>a</sup> Nathan M. Weir, MD, PhD,<sup>a</sup> and Jeffrey Bryant Travers, MD, PhD<sup>a,b,c</sup>  
Dayton, Ohio

**Key words:** immune therapy; papillomavirus.

## INTRODUCTION

Cutaneous papillomavirus infections are a common cause of morbidity.<sup>1,2</sup> Although many treatment regimens for common warts are available, no single form of therapy is the clear method of choice. Immunotherapy with *Candida albicans* antigen injections is an accepted method that can be effective, with few side effects reported. The immunotherapeutic *Candida* antigen (CA), is used intralesionally for the treatment of recalcitrant warts.<sup>3-5</sup> *Candida* antigen induces a delayed hypersensitivity reaction in healthy patients such that the cell-mediated immune response enhances the immune system's identification of the viral infection. Although safe, previous studies report pain, edema, and a purple digit as rare aberrant reactions to such treatment.<sup>6,7</sup>

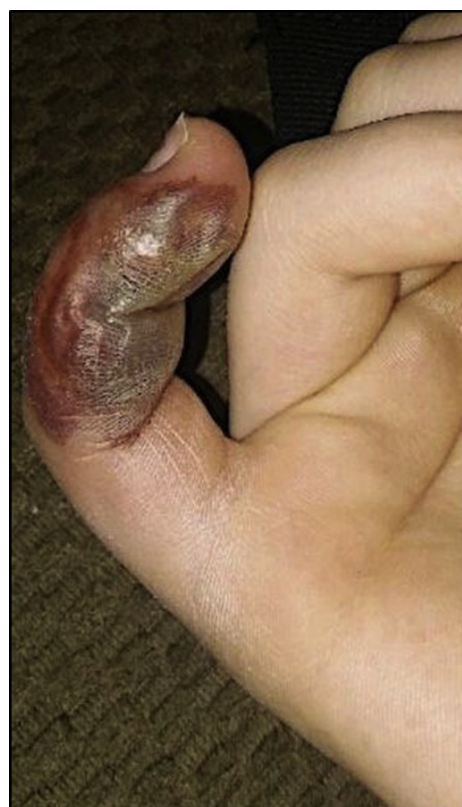
## CASE REPORT

An 11-year-old, 56.3-kg girl with a 5-mm verrucous papule with thrombosed capillaries on the lateral distal right fifth digit presented to the clinic with concerns for wart removal. After unsuccessful treatment with cryotherapy, the patient and her mother were provided education about the immunotherapeutic CA. At the time of the first treatment approximately 2 months after cryotherapy, not only did the patient receive a 0.1-mL of 50  $\mu$ m/mL CA (LETI Laboratories, Barcelona, Spain) into finger, we also injected 0.1 mL of CA into the ipsilateral volar forearm as a test site.

The patient and family were instructed to obtain a picture of the volar forearm test site 2 days later. At her follow-up appointment 1 month later, the family noted a minimal reaction from the injections (less

*Abbreviation used:*

CA: candida antigen



**Fig 1.** Photo taken 2 days after the second 0.1-mL injection of CA into the fifth digit. The patient experienced redness, edema, and mild pain.

From the Departments of Dermatology<sup>a</sup> and Pharmacology,<sup>b</sup> Boonshoft School of Medicine, Wright State University and Dayton VA Medical Center.<sup>c</sup>

Funding sources: None.

Conflicts of interest: None disclosed.

Correspondence to: Jeffrey Bryant Travers, MD, PhD, Boonshoft School of Medicine, Wright State University, 3640 Col. Glenn Hwy, Dayton, Ohio 45436. E-mail: [Jeffrey.travers@wright.edu](mailto:Jeffrey.travers@wright.edu).

JAAD Case Reports 2018;4:242-4.

2352-5126

© 2018 by the American Academy of Dermatology, Inc. Published by Elsevier, Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.jidcr.2018.01.010>

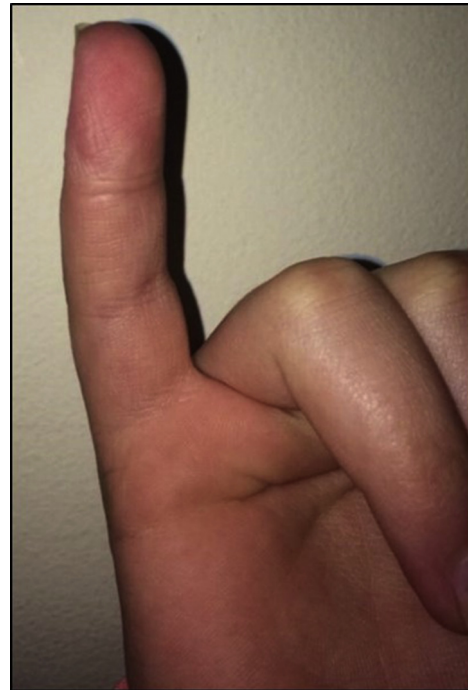


**Fig 2.** The patient reported an improvement at the end of a tapering dose of oral prednisone regimen (see text for dosage).

than 5 mm from the provided digital picture of forearm test site), and the wart was approximately the same size (5 mm). At this visit, the recalcitrant wart was treated with a second injection of 0.1 mL CA. Later that night, the patient was taken to urgent care by her mother with the reported concern of redness, pain, and edema in the digit. The patient was given ibuprofen, 200 mg 3 times a day. One day later the finger worsened with increased swelling and mild pain (Fig 1). Two days after the injection, the patient was seen in the clinic and examined. It was noted that there was no dysesthesias of the tip of the affected finger as would be associated with compartment syndrome. The patient was then started on a tapering dose of oral prednisone: five 10-mg tablets of oral prednisone per day for 3 days, three 10-mg tablets of oral prednisone per day for 3 days, and one 10-mg tablet of oral prednisone per day for 3 days. The patient reported an improvement at the end of the treatment regimen (Fig 2). Approximately 2 months later, the finger was asymptomatic, although slight erythema was noted (Fig 3). The wart resolved.

## DISCUSSION

Although considered safe, CA antigen is reported to cause exuberant reactions in some cases.<sup>6,7</sup> Of



**Fig 3.** Approximately 2 months after the oral prednisone treatment, the finger exhibited mild erythema and was otherwise asymptomatic with resolution of the wart.

interest, this reaction might be dose dependent, with less chance of reaction using diluted CA antigen.<sup>7</sup> Neither the original test site nor the first wart injection resulted in significant inflammation. This finding suggests that having a minimal antecedent reaction does not predict a future exuberant one.

We report this case to increase awareness of the possible complications that may arise when using CA antigen in an otherwise healthy patient. Moreover, as no specific treatment (other than surgical incision to the area because of worries about compartment syndrome) was described in original reports of CA reactions,<sup>6,7</sup> this report indicates that a course of systemic prednisone at 1 mg/kg with rapid taper has efficacy.

## REFERENCES

1. Jabłonska S, Majewski S, Obalek S, Orth G. Cutaneous warts. *Clin Dermatol.* 1997;15(3):309-319.
2. Sanfilippo AM, Barrio V, Kulp-Shorten C, Callen JP. Common pediatric and adolescent skin conditions. *J Pediatr Adolesc Gynecol.* 2003;16(5):269-283.
3. Kwok CS, Holland R, Gibbs S. Efficacy of topical treatments for cutaneous warts: a meta-analysis and pooled analysis of randomized controlled trials. *Br J Dermatol.* 2011;165(2):233-246.
4. Signore RJ. Candida albicans intralesional injection immunotherapy of warts. *Cutis.* 2002;70(3):185-192. Erratum in: *Cutis.* 2002;70(5):294.
5. Johnson SM, Horn TD. Intralesional immunotherapy for warts using a combination of skin test antigens: a safe and effective therapy. *J Drugs Dermatol.* 2004;3(3):263-265.

6. Perman M, Sterling JB, Gaspari A. The painful purple digit: an alarming complication of *Candida albicans* antigen treatment of recalcitrant warts. *Dermatitis*. 2005;16(1):38-40.
7. Signore RJ. Comment on: The painful purple digit: an alarming complication of *Candida albicans* antigen treatment of recalcitrant warts. *Dermatitis*. 2005;16(4):216.