

COVID CONCEPTS

Acute Urticaria in a Young Female with COVID-19

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ABSTRACT

This is the first known case of a young female (18 years old) with widespread urticaria amid active Covid-19 infection at a drive-up testing facility. Covid-19 should currently be on the differential diagnosis for urticaria seen in both the inpatient and outpatient setting.

INTRODUCTION

First reported in December 2019, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes the respiratory illness COVID-19 has resulted in a worldwide pandemic. We report a case of acute urticaria in conjunction with systemic symptoms during infection with the SARS-CoV-2 virus in a young female.

CASE PRESENTATION

A healthy 18-year-old female presented to a drive-up COVID-19 testing site in April 2020 with a 10-day history of fever, lethargy, dry cough, shortness of breath, chills, nasal congestion, headache, and loss of taste. Eight days following the onset of symptoms, the patient observed the appearance of pedal edema and pruritic lesions on the legs, which spread to the torso and face.

The lesions persisted for less than 24 hours with recurrence or appearance of new lesions over 6 days. The patient denied

cutaneous pain, arthralgia, facial edema, new medications, or history of rash including urticaria.

Photographs provided from days 9 and 11 on telehealth follow-up demonstrated well-circumscribed, erythematous, edematous papules and plaques involving the chest, abdomen, back, arms, legs (Figures 1A-C, 2B), feet, and cheeks (Figure 2A). Mucosal surfaces were uninvolved. Testing for IgG antibodies for SARS-CoV-2 returned positive. The patient was advised to treat the rash with oral antihistamines and over the counter topical hydrocortisone 1% cream, but no other systemic medications were recommended for the infection. The patient's urticarial eruption resolved within 18 days of symptom onset and she fully recovered from her respiratory illness, with residual intermittent fatigue, within 21 days.

DISCUSSION

To our knowledge, this is the first reported case of acute urticaria in a young patient (18 years or younger) with a confirmed COVID-

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19 infection. Two additional reports in the European literature describe development of acute urticaria in three infected adults aged 27, 39, and 71; however, development occurred at symptom onset or within 48 hours compared to several days into the infection as observed in our patient.^{1,2} Further, the association between SARS-CoV-2 infection and acute urticaria in these cases is likely more than presumptive as the most common trigger for acute urticaria is noted to be an upper respiratory infection with viral infections being frequently implicated.^{3,4}

Figure 1. (A-C) Evolution of urticaria on the legs over the course of Day 9. **(D)** Lessened but persistent recurrence of urticaria on the legs on Day 11.

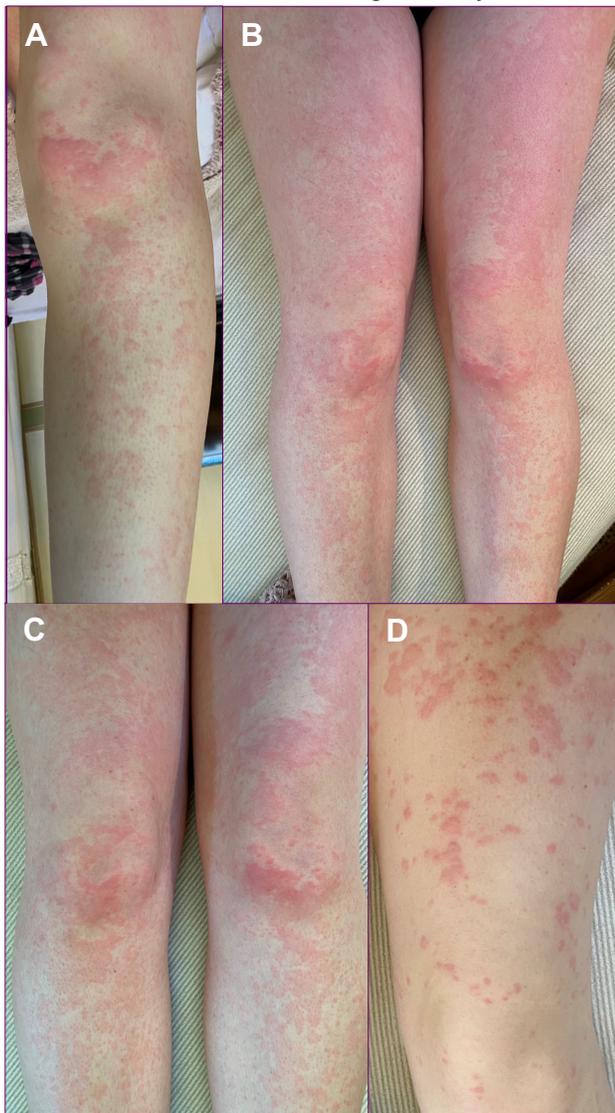


Figure 2. Urticaria migrated from the legs and torso to the patient's face.



As with other pathogenic etiologies for urticaria, the mechanism by which urticaria manifests may be a result of the virus itself and/or the immune system. Increased urticarial disease activity has been correlated with an increase in serum interleukin-6 (IL-6).⁵ In severely ill patients with COVID-19, associated elevations of IL-6 have been recently demonstrated in a systematic review and meta-analysis.⁶ Consequently, these elevations in IL-6 may explain the emergence of urticaria in COVID-19 patients. However, additional research is required to better elucidate the role the SARS-CoV-2 virus and other viruses in the development of acute urticaria.

As urticaria is commonly seen in outpatient US dermatology clinics, we felt COVID-19 to be an important diagnostic consideration when evaluating such patients during this

timeframe, particularly those with pertinent systemic symptoms.

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