

BRIEF REPORT

Localized Scarletiform Rash of the Ears and Antecubital Fossa in COVID-19

Timothy Truong Phamduy, DO, Douglas Morris Young, DO, and
Paras Batuk Ramolia, MD

The worldwide spread of the novel coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to a global pandemic since its identification in Wuhan, China in December 2019.¹ Few cases of COVID-19-associated dermatologic manifestations have been reported in the literature to date. This report describes the clinical features of a localized pruritic scarlatiniform rash of the ears and antecubital fossa on defervescence in a 29-year-old patient with COVID-19. Our case stands to further illuminate the dermatologic manifestations of this novel disease. (J Am Board Fam Med 2021;34:S183–S185.)

Keywords: Community Medicine, COVID-19, Dermatology, Exanthema, Family Medicine, Itching, Pandemics, Primary Health Care, Prurigo, Pruritus, Rash, Scarlet Fever

Introduction

The rapid, worldwide spread of the novel coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to a global pandemic since its identification in Wuhan, China in December 2019.¹ The diagnosis is suspected clinically in patients who present with symptoms of fever, cough, dyspnea, myalgia, and fatigue and is confirmed via laboratory testing.² Few cases of COVID-19-associated dermatologic manifestations have been reported in the literature to date. This report describes the clinical features of a cutaneous eruption of the ears and antecubital fossa in a patient with COVID-19.

Case Report

On 23 March 2020, a 29-year-old male health care worker presented to our outpatient clinic in

Abilene, Texas with a 2-day history of sore throat and dry cough. He also reported new-onset fever, myalgia, and fatigue, which started the morning of presentation. The patient's only significant dermatologic past medical history was alopecia areata, for which he received monthly intralesional steroid injections. His last injection was administered 1 month before presentation. He denied any recent travel or known sick contacts.

Physical examination revealed a body temperature of 38.8°C, pulse of 101 beats per minute, and oxygen saturation of 95% while the patient was breathing ambient air. His breathing was unlabored. Rapid antigen detection tests for influenza A, influenza B, and group A streptococci were negative. Given that the patient was a health care worker, a nasopharyngeal swab was obtained to test for SARS-CoV-2 via real-time reverse-transcriptase–polymerase-chain-reaction (rRT-PCR) assay and was subsequently positive. Given clinical stability, the patient was instructed to self-isolate at home, monitor for clinical progression with daily temperature checks, and continue supportive therapy.

The patient reported taking 1 dose of an over-the-counter cold medication containing acetaminophen, dextromethorphan, and doxylamine the night before presentation and then a single dose of acetaminophen monotherapy the following 2 nights for throat pain.

This article was externally peer reviewed.

Submitted 17 April 2020; revised 28 May 2020; accepted 2 June 2020.

From 7th Medical Group, Dyess Air Force Base, US Air Force, Abilene TX (TTP, DMY); Abilene Dermatology & Skin Surgery Center, Abilene TX (PBR).

Funding: The authors received no specific funding for this work.

Conflict of interest: The authors declare that there are no conflicting or competing interests.

Corresponding author: Timothy Phamduy, DO, 1581 Varnum Avenue, Lowell, MA 01854 (Email: timothy.phamduy@gmail.com).

Two days after his initial presentation, day 5 of illness, the patient reported resolution of fevers and gradual improvement of his other presenting symptoms. He also noted the development of a pruritic, scarlatiniform, erythematous, papular eruption of the helical rim, antihelix, and earlobe. On day 6 of illness, the rash spread to circumferentially involve the elbows with greater involvement of the antecubital fossa (Figure 1). The rash gradually improved without therapy. By day 11 of illness, the eruption led to slight desquamation of the affected areas before complete resolution (Figure 2).

Discussion

Dermatologic manifestations of other coronaviruses have been previously reported in the literature.^{3,4} However, a complete understanding of the clinical spectrum of SARS-CoV-2 infection is still rapidly developing – ranging from asymptomatic carriers to acute respiratory distress syndrome and even death.^{1,5}

Although SARS-COV-2 seems to have no demonstrated tropism for the skin,⁶ there have been reports of dermatologic manifestations of COVID-19 patients. Guan et al. report a case series of 1099 patients of which 2 patients (0.2%) had rashes that were not described further.⁷ Another case series from Lecco Hospital, Lombardo, Italy reports that

Figure 1. Image left elbow on day 11 of illness demonstrating a localized pruritic scarlatiniform of erythematous papules.



Figure 2. Image of the right ear demonstrating residual skin erythema and slight desquamation on day 11 of illness.



of the 88 confirmed COVID-19 positive patients they examined, 18 patients (20.4%) had some form of cutaneous manifestation – erythematous rash, widespread urticaria, and varicella-like vesicles of primarily truncal distribution with low or absent pruritus.⁸ Case reports have also noted a dengue-like petechial rash as well as a morbilliform, maculopapular, nonpruritic rash as presenting symptoms in patients subsequently diagnosed with COVID-19.^{9,10} Additional reports discuss a transient nonpruritic livedoid eruption and acro-ischemia of the extremities mimicking perniosis.^{11–14} Hoenig et al describe a self-resolving, erythematous, slightly-edematous rash of the malar region, neck, and ears of a 26-year-old patient with presumptive COVID-19 based on close-contact exposure; however, due to shortages of SARS-CoV-2 testing kits, the patient was not tested.¹⁵ As had been noted with other coronaviruses,⁴ the dermatologic manifestations of Kawasaki disease in children have also been reported in association with SARS-CoV-2.¹⁶

Our patient's history of alopecia areata and the treatment he was undergoing may warrant consideration as a confounding factor. However, neither the autoimmune disorder, which causes nonscarring hair loss nor intralesional steroid injections, which may

cause atrophy of the skin at the site of injection, have been known to cause rashes in unaffected areas as described in our case.¹⁷

Our report illustrates a case of a pruritic scarlatiniform rash of the ears and antecubital fossa after defervescence in a patient with confirmed SARS-CoV-2. We feel our patient's rash adds to the growing body of data for clinical features of COVID-19 and is worth sharing with the medical community. Additional research and case reports will help further clarify the full clinical spectrum of COVID-19.

We thank Drs. Klees Thomas and Audra Cochran for their expertise and assistance throughout all aspects of our case report and for their help in the critical review of our manuscript.

To see this article online, please go to: <http://jabfm.org/content/34/Supplement/S183.full>.

References

1. Undiagnosed Pneumonia-China (HU): RFI. ProMED-mail 2019 Dec 30. Available from: promedmail.org/promed-post/?id=6864153. Accessed April 10, 2020.
2. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020;395:497–506.
3. Peiris JSM, Lai ST, Poon LLM, et al. Coronavirus as a possible cause of Severe Acute Respiratory Syndrome. *Lancet* 2003;361:1319–25.
4. Chang LY, Lu CY, Shao PL, et al. Viral infections associated with Kawasaki disease. *J Formos Med Assoc* 2014;113:148–54.
5. Rothe C, Schunk M, Sothmann P, et al. Transmission of 2019-nCoV infection from an asymptomatic contact in Germany. *N Engl J Med* 2020;382:970–1.
6. Yao XH, Li TY, He ZC, et al. A pathological report of three COVID-19 cases by minimally invasive autopsies. *Zhonghua Bing Li Xue Za Zhi* 2020;49: E009. Available from: <http://dx.doi.org/10.3760/cma.j.cn112151-20200312-00193>.
7. Guan W, Ni Z, Hu Y, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med* 2020;382:1708–20. Available from: <http://dx.doi.org/10.1056/NEJMoa2002032>.
8. Recalcati S. Cutaneous manifestations in COVID-19: a first perspective. *J Eur Acad Dermatol Venereol* 2020;34:e212–13.
9. Joob B, Wiwanitkit V. COVID-19 can present with a rash and be mistaken for Dengue. *J Am Acad Dermatol* 2020;82:e177. Available from: <http://dx.doi.org/10.1016/j.jaad.2020.03.036>.
10. Hunt M, Koziatek C. A case of COVID-19 pneumonia in a young male with full body rash as a presenting symptom. *Clin Pract Cases in Emerg Med* 2020;4:219–21. Available from: <https://escholarship.org/uc/item/29j8q4pm#author>.
11. Zhang Y, Cao W, Xiao M, et al. Clinical and coagulation characteristics of 7 patients with critical COVID-19 pneumonia and acro-ischemia. *Zhonghua Xue Ye Xue Za Zhi* 2020;41: E006. Available from: <http://dx.doi.org/10.3760/cma.j.issn.0253-2727.2020.0006>.
12. Covid-19 and skin lesions: the French Dermatology Society calls for vigilance but also for caution. French Society of Sexually Transmitted Dermatology and Pathology 2020 Apr 08. Available from: https://www.sfdermato.org/media/pdf/actualite_slide/cp-lesions-cutanees-covid-08042020vdefbis-5107ba5bb7ba4261ee926df55350f90a.pdf. Accessed April 10, 2020.
13. Otto AM. Skin manifestations are emerging in the coronavirus pandemic. *The Hospitalist* Available from: https://www.sfdermato.org/media/pdf/actualite_slide/cp-lesions-cutanees-covid-08042020vdefbis-5107ba5bb7ba4261ee926df55350f90a.pdf. Accessed April 10, 2020.
14. Manalo IF, Smith MK, Cheeley J, Jacobs R. Dermatologic manifestation of COVID-19: transient livedo reticularis. *J Am Acad Dermatol* 2020;83:700. Available from: <http://dx.doi.org/10.1016/j.jaad.2020.04.018>.
15. Hoenig LJ, Pereira FA. Eruption as a clinical manifestation of COVID 19: photographs of a patient. *Clin Dermatol* 2020; 38:502–5. Available from: <http://dx.doi.org/10.1016/j.clindermatol.2020.04.001>.
16. Jones VG, Mills M, Suarez D, et al. COVID-19 and Kawasaki disease: novel virus and novel case. *Hosp Pediatr* 2020;10:537–40. Available from: <http://dx.doi.org/10.1542/hpeds.2020-0123>.
17. Pratt CH, King LE, Jr, Messenger AG, Christiana AM, Sundberg JP. Alopecia areata. *Nat Rev Dis Primers* 2017;3:17011. Available from: <http://dx.doi.org/10.1038/nrdp.2017.11>.