

- 3 Guerrero-Gonzalez GA, Ocampo-Garza J, Vazquez-Martinez O, Garza-Rodriguez V, Ocampo-Candiani J. Combined use of simulation and digital technologies for teaching dermatologic surgery. *J Eur Acad Dermatol* 2016; **30**: e175–e176.
- 4 Liu KJ, Tkachenko E, Waldman A *et al*. A video-based, flipped classroom, simulation curriculum for dermatologic surgery: a prospective, multi-institution study. *J Am Acad Dermatol*. 2019; **81**: 1271–1276.
- 5 Nicholas L, Toren K, Bingham J, Marquart J. Simulation in dermatologic surgery: a new paradigm in training. *Dermatol Surg*. 2013; **39**: 76–81.

DOI: 10.1111/jdv.16621

Urticarial eruption in coronavirus disease 2019 infection: a case report in Tangerang, Indonesia

Dear Editor,

We have read with great interest the articles regarding cutaneous manifestations in coronavirus disease 2019 (COVID-19) infection. Studies showed 20.4% of COVID-19-infected patients developed cutaneous manifestations and might be the only presenting symptom.¹ To date, previous cases reported urticaria as one of the cutaneous manifestations in COVID-19.^{1–4} This atypical symptom might lead to misdiagnosis, delayed diagnosis and virus transmission, especially in countries where cutaneous manifestation of COVID-19 has not been reported widely such as in Indonesia. We would like to report a case of urticaria in COVID-19-positive non-ICU hospitalized patient from Indonesia to bring awareness to its cutaneous manifestations.

A 51-years-old patient was admitted to our hospital on 12 April 2020 with presenting symptoms including fever, cough, dyspnoea and diarrhoea. His RT-PCR for COVID was positive on 10 April 2020; therefore, he was diagnosed with COVID-19. The patient has history of hypertension, diabetes, dyslipidemia and hyperuricemia on therapy. The vital signs were as follows: blood pressure 160/100 mmHg, pulse rate 106/min, respiratory rate 24/min, temperature 37.1°C and SpO₂ 97% on room air. The result of the examinations on admission is as follows: low haemoglobin (12.8 g/dL), red blood cell count ($4.31 \times 10^6/\mu\text{L}$), pO₂ (75 mmHg), HCO₃ (19.8 mmol/L), total CO₂ (20.8 mmol/L), base excess (–5 mmol/L) and high ESR (17 mm/h), LDH (300 U/L), CRP (6.9 mg/dL). Chest CT scan on April 12 showed fibrotic bands in both lungs with no ground-glass opacity. Chest X-ray on April 21 showed bilateral lung opacities predominantly in peripheral, lower zone (Fig. 1). The patient was treated with azithromycin, hydroxychloroquine, cefoperazone-sulbactam, omeprazole and medicines for his comorbidities. On day 3 of hospitalization, suddenly, he developed pruritic urticaria involving the face (Fig. 2a,b) and without involvement of the rest of the skin. It appeared 5 days after the onset of symptoms.

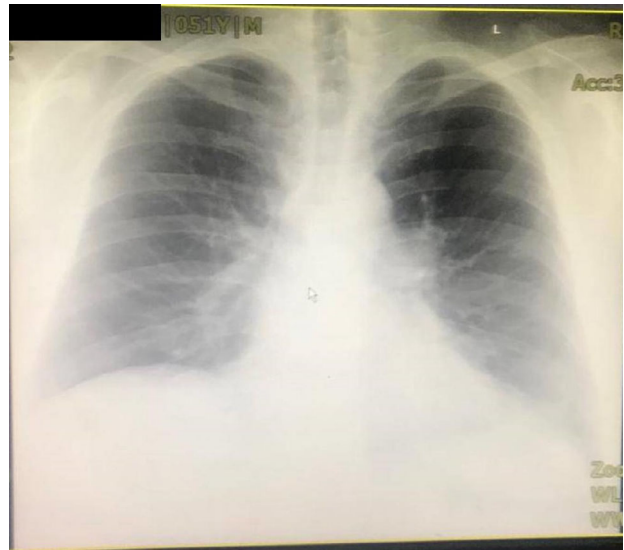


Figure 1 Chest X-ray on April 21.

However, no urticaria triggers other than viral infection were found, as there was no history of food allergy, drug allergy, chronic urticaria, nor other allergies. There was no history of consuming new medicine in 15 days prior besides COVID-19 treatment in hospital. Oral antihistamine loratadine was added to his treatment with improvement of symptom on the next day. The suspicion of urticaria caused by the medicines given in hospital could be eliminated by the fact his urticaria improved even the medicines continued to be given.

This report was consistent with previous studies, and treatment with oral antihistamines led to clinical improvement as well. A case in Spain reported urticaria in COVID-19-infected patient which biopsy revealed a perivascular infiltrate of lymphocytes, some eosinophils and upper dermal oedema.⁴ However, biopsy was not done in this case because of the equipment limitation. The authors postulated the pathophysiology of urticaria in COVID-19 might be described by three hypotheses. Firstly, it has widely known that viral infection causes nonimmunological urticaria by mast cell activation through complement activation.⁵ Secondly, vasculitis might be the underlying cause as in pathophysiology in urticarial vasculitis. Angiotensin-converting enzyme 2 (ACE2), the protein which SARS-CoV-2 uses to enter cells, was widely distributed in human's body, particularly vascular endothelial. This might lead to formation of antibody-antigen complex, which deposited at vascular wall, which is followed by complement activation and mast cell degranulation.^{6,7} Thirdly, the urticaria might be associated with bradykinin in Kinin–kallikrein system in conjunction with ACE2. But more studies regarding BK-mediated urticaria are needed.^{8–10}

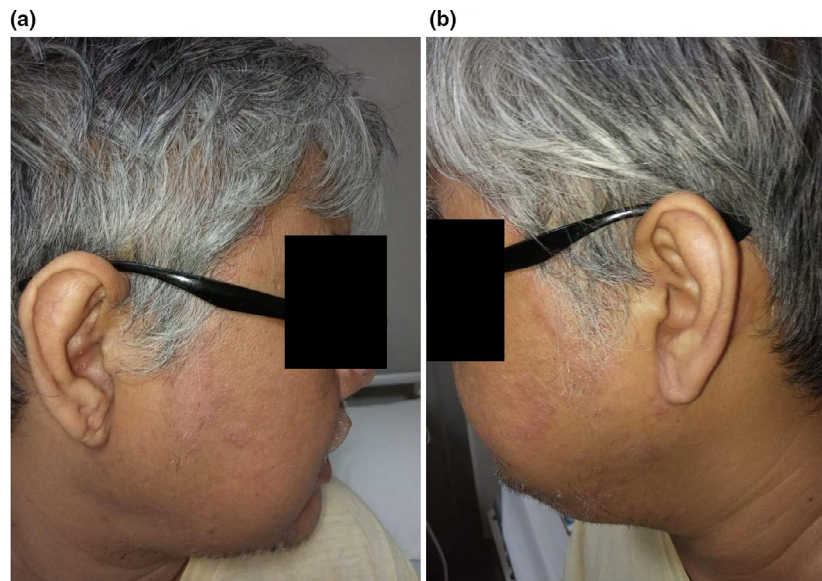


Figure 2 Urticaria involving face, on the right side (a) and left side of the face (b).

Apparently, previous studies showed there was not any correlation of urticaria in COVID-19 with disease's severity, which is consistent with our case, because the patient was in stable condition and to date has fully recovered.

Acknowledgement

The patient in this manuscript has given written informed consent to the publication of their case details.

Funding source

none.

C. Gunawan,^{1,*}  A. Angela,¹  A. Widysanto² 

¹Faculty of Medicine, Pelita Harapan University, Tangerang, Indonesia,

²Department of Pulmonology, Siloam Hospital Kelapa Dua, Tangerang, Indonesia

*Correspondence: C. Gunawan. E-mail: catherinegunawann@gmail.com

References

- Recalcati S. Cutaneous manifestations in COVID-19: a first perspective. *J Eur Acad Dermatol Venereol* 2020. <https://doi.org/10.1111/jdv.16387>. [Epub ahead of print].
- Wang D, Hu B, Hu C *et al*. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA* 2020; **323**: 1061.
- Henry D, Ackerman M, Sancelme E, Finon A, Esteve E. Urticarial eruption in COVID-19 infection. *J Eur Acad Dermatol Venereol* 2020. <https://doi.org/10.1111/jdv.16472> [Epub ahead of print].
- Fernandez-Nieto D, Ortega-Quijano D, Segurado-Miravalles G, Pindado-Ortega C, Prieto-Barrios M, Jimenez-Cauhe J. Comment on: Cutaneous manifestations in COVID-19: a first perspective. Safety concerns of clinical images and skin biopsies. *J Eur Acad Dermatol Venereol* 2020. <https://doi.org/10.1016/j.sciaf.2019.e00146> [Epub ahead of print].

- Wedi B, Raap U, Wiczorek D, Kapp A. Urticaria and infections. *Allergy Asthma Clin Immunol* 2009; **5**: 10.
- Hamming I, Timens W, Bultuis MLC, Lely AT, Navis GJ van, Goor H. Tissue distribution of ACE2 protein, the functional receptor for SARS coronavirus. A first step in understanding SARS pathogenesis. *J Pathol* 2004; **203**: 631–637.
- Mehregan DR. Pathophysiology of urticarial vasculitis. *Arch Dermatol* 1998; **134**: 88–89.
- Tolouian R, Zununi Vahed S, Ghiyasvand S, Tolouian A, Ardalan M. COVID-19 interactions with angiotensin-converting enzyme 2 (ACE2) and the kinin system; looking at a potential treatment. *J Ren Inj Prev J Ren Inj Prev [Internet]* 2020; **9**: 19.
- Nishad AAN, Arulmoly K, Priyankara SAS, Abeyesundara PK. A forgotten cause of allergy at ER that is still difficult to diagnose and treat at poor resource setting: angioedema after using angiotensin converting enzyme inhibitors for 4 years. *Case Rep Immunol* 2019; **2019**: 1676391. <https://doi.org/10.1155/2019/1676391>
- Hofman ZLM, van den Elzen MT, Kuijpers J *et al*. Evidence for bradykinin release in chronic spontaneous urticaria. *Clin Exp Allergy* 2020; **50**: 343–351.

DOI: 10.1111/jdv.16622

Atypical erythema multiforme palmar plaques lesions due to Sars-Cov-2

Dear Editor,

Since coronavirus disease 19 (COVID-19) was declared as a pandemic, all medical specialties were at the front, including