



# A Challenging Case of COVID-19 With Skin Manifestations and Normal Chest Computed Tomography



Elham Zare<sup>1</sup>, Maryam Panahi<sup>2</sup>, Zahra Mahboubi Fooladi<sup>3\*</sup>

1. Department of Internal Medicine, North Khorasan University of Medical Sciences, Bojnurd, Iran.

2. School of Medicine, Tehran University of Medical Sciences, Tehran, Iran.

3. Department of Radiology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

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## ABSTRACT

We report a case of laboratory-confirmed COVID-19 with an unusual presentation of fever and rash without any respiratory symptoms. Skin manifestations can help physicians to rapidly diagnose and control this pandemic disease.

## Introduction

COVID-19 outbreak first evolve in China as an influenza-like illness. It mostly represents with fever, cough and myalgia. However, some individuals experience uncommon presentations such as skin rash. Herein, we introduce a patient with skin symptoms and no respiratory finding.

## Case Presentation

A 39-year-old male, with no notable past medical history, presented to the emergency department with complaints of fever, headache, weakness, skin rash (Figure 1), and sore throat from 3 days earlier to admission; no respiratory distress was mentioned. He consumed no herbal or chemical medicine.

## \* Corresponding Author:

Zahra Mahboubi Fooladi, MD.

Address: Department of Radiology, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

E-mail: [zahra.mahboubi.66@gmail.com](mailto:zahra.mahboubi.66@gmail.com)

Vital signs at the presentation day included temperature, 39.3° C; blood pressure, 160/60 mm Hg; respiratory rate, 22 breathes per minute; oxygen saturation, 94% in room air; and regular pulse rate of 98.

Physical examination revealed livedo reticularis eruption on upper extremities and upper trunk, the livedo eruptions were transient and non-pruritic; the next day, vascular eruption resolved and changed to maculopapular, morbilliform rash which extended to the abdomen; and on the day 4, it began to disappear; the rash was completely faded on the day 7.

No mucosal involvement was seen. No adenopathy or organomegaly was detected, too. The pulmonary examination was normal. Laboratory data revealed absolute lymphopenia (720 U/L), leukocyte count (7200 U/L), and thrombocytopenia (platelet count 111000/mm<sup>3</sup>). His qualitative C-Reactive protein was 3 plus positive, also, elevated low-density lipoprotein (670 IU/L) and international normalized ratio (1.7) was noted. Peripheral blood smear showed normal cells.

According to the symptoms and cutaneous involvements, an upper respiratory viral infection was suspected. The patient was admitted for further investigation. Results of the EBV (Epstein Barr Virus) test and streptococcus test were negative. A nasopharyngeal COVID-19 RT-PCR test was performed.

The results of chest radiography on the first day of admission and the chest computed tomography on the third day were normal. The results of the EBV test and streptococcus test were negative, too. The nasopharyngeal sample came back positive for coronavirus.

The patient received supportive care and treatment according to the guidelines at the time. After 5 days he was discharged from the hospital. One-month follow-up showed no pulmonary or cutaneous symptoms.

## Discussion

In recently published papers, the most common early signs of COVID-19 disease included fever, cough, chills, and difficult breathing [1, 2]. Skin manifestation has been rarely described as a constant finding in COVID-19 patients by World Health Organization (WHO) or by Centers for Disease Control and Prevention (CDC) [3, 4]. Cutaneous manifestations are rarely considered as the first manifestation of COVID-19, in the absence of respiratory symptoms [5].

In northern Italy, skin findings were observed in about one-fifth of a group of patients. Various forms of rashes were reported, including livedoid eruptions, red petechial rashes, hives, and vesicles like chickenpox [6]. One study in China reported skin rash in 0.2% to 1.2% of COVID-19 patients [1]. Besides, in other published studies, skin involvements were described as non-specific rash, same as our case [7-9].

Body rash as an initial symptom of COVID-19 was described by Hunt et al. [10, 11]. Skin features can be a sign of vaso-occlusion and cutaneous vasculitis patterns could be explained by the virus-induced microcytopenia but the exact pathophysiology is unknown [6, 12]. Acro-ischemic lesions in fingers and toes and the acrosyndrom were mentioned as a presenting symptom of COVID-19 [5, 13].

According to previously published data, chest CT scan plays an important role in the early diagnosis and management of novel coronavirus patients [14]. However, it may be unremarkable at symptomatic patient's admission [15]. On the other hand, some RT-PCR positive confirmed patients may show a normal CT scan on the initial days and also, on follow-up evaluations [16, 17]. Our case presented with negative chest CT images at first and follow-up examinations, which emphasizes the importance of the RT-PCR test as a reference test despite false negatives.



Figure 1. Skin rash

## Conclusion

Our patient presentation was unusual according to presenting symptoms and imaging. Prompt patient identification helps control infectious disease. It illustrates the necessity to be vigilant for a possible presentation like a rash, which can be associated with COVID-19 without the need for pulmonary symptoms.

## Ethical Considerations

### Compliance with ethical guidelines

The authors state that there's no discordance with human ethical guidelines.

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### Conflict of interest

The authors declared no conflict of interest.

## References:

- [1] Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of coronavirus disease 2019 in China. *New England Journal of Medicine*. 2020; 28. [DOI:10.1101/2020.02.06.20020974]
- [2] Darlenski R, Tsankov N. Covid-19 pandemic and the skin - What should dermatologists know? *Clin Dermatol*. 2020; in press. [DOI:10.1016/j.clindermatol.2020.03.012 (Accessed 3/30/20).] [PMID]
- [3] Coronavirus disease 2019. Symptoms. Centres for Disease Control and Prevention. 2020. [Accessed on: 29 May 2020] <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>.
- [4] World Health Organization (WHO). Coronavirus disease (COVID-19) pandemic. 2020. [Accessed on: 30 May 2020] <https://www.who.int/health-topics/coronavirus>
- [5] National Syndicate of Dermatologists - Venereologists [Le Syndicat National des Dermatologues-Vénérologues (SNDV): Alerte sur les manifestations cutanées du COVID 19 (French)] [Internet]. [Updated: 2020, April 11]. Available from: <https://www.syndicatdermatos.org/wp-content/uploads/2020/04/cp-covid-peau-6-avril.pdf>
- [6] Societe Fracaise de Dermatologie. Covid Skin Findings [Covid-19 et lésions cutanées: la Société Française de Dermatologie appelle à la vigilance mais également à la prudence(French)] [Internet]. [Updated: 2020, April 8]. Available from: [https://www.sfdermato.org/media/pdf/communique-presse/cp-lesions-cutanees-covid\\_08042020vdef-bis\\_2fd934abcac1b20cbe1973fd990f9b82.pdf](https://www.sfdermato.org/media/pdf/communique-presse/cp-lesions-cutanees-covid_08042020vdef-bis_2fd934abcac1b20cbe1973fd990f9b82.pdf)
- [7] Chen Y, Peng H, Wang L, Zhao Y, Zeng L, Gao H, et al. Infants born to mothers with a new coronavirus (COVID-19). *Frontiers in Pediatrics*. 2020; 8:1-5. [DOI:10.3389/fped.2020.00104] [PMID] [PMCID]
- [8] Recalcati S. Cutaneous manifestations in COVID-19: A first perspective. *Journal of the European Academy of Dermatology and Venereology*. 2020; 34(5):e212-e213. [DOI:10.1111/jdv.16387]
- [9] Hoenig LJ, Pereira FA. Addendum to: Eruption as a clinical manifestation of COVID-19: Photographs of a patient. *Clinics in Dermatology*. 2020; 502-5. [DOI:10.1016/j.clindermatol.2020.05.020]
- [10] Hunt M, Koziatek C. A case of COVID-19 pneumonia in a young male with full body rash as a presenting symptom. *Clinical Practice and Cases in Emergency Medicine*. 2020; 4(2):219-21 [DOI:10.5811/cpcem.2020.3.47349]
- [11] Joob B, Wiwanitkit V. COVID-19 can present with a rash and be mistaken for Dengue. *Journal of the American Academy of Dermatology*. 2020 Mar 22. [DOI:10.1016/j.jaad.2020.03.036] [PMID] [PMCID]
- [12] Zhang Y, Cao W, Xiao M, Li YJ, Yang Y, Zhao J, et al. [Clinical and coagulation characteristics of 7 patients with critical COVID-19 pneumonia and acro-ischemia (Chinese)]. *Zhonghua Xue Ye Xue Za Zhi*. 2020; 41(0):302-7. [DOI:10.3760/cma.j.issn.0253-2727.2020.0006] [PMID]
- [13] Mazzota F, Troccoli T. Acute Acro-Ischemia in a Child at the time of COVID-19. *European Journal of Pediatric Dermatology*. 2020; 30(2):71-4. [DOI:10.26326/2281-9649.30.2.2102]
- [14] Zu ZY, Jiang MD, Xu PP, Chen W, Ni QQ, Lu GM, et al. Coronavirus Disease 2019 (COVID-19): A perspective from China. *Radiology*. 2020; 296(2):E15-E25. [DOI:10.1148/radiol.2020200490] [PMID] [PMCID]
- [15] Bernheim A, Mei X, Huang M, Yang Y, Fayad ZA, Zhang N, et al. Chest CT findings in coronavirus disease-19 (COVID-19): Relationship to duration of infection. *Radiology*. 2020; 295(3):685-91. [DOI:10.1148/radiol.2020200463] [PMID] [PMCID]
- [16] Yang W, Cao Q, Qin L, Wang X, Cheng Z, Pan A, et al. Clinical characteristics and imaging manifestations of the 2019 novel coronavirus disease (COVID-19): A multi-center study in Wenzhou city, Zhejiang, China. *Journal of Infection*. 2020; 80(4):388-93. [DOI:10.1016/j.jinf.2020.02.016] [PMID] [PMCID]
- [17] Yang W, Yan F. Patients with RT-PCR confirmed COVID-19 and normal chest CT. *Radiology*. 2020; 295(2):E3. [DOI:10.1148/radiol.2020200702] [PMID] [PMCID]