Cyanotic Fingers and Omicron, Oh My!

Deniz Demircioğlu, Emel Öztürk Durmaz, Sedef Şahin

Quiz Case

The rector of our university, a 62-year-old male, presented to the dermatology department on the 12th day of omicron variant of COVID-19 infection, with a three-day history of asymptomatic bluish fingers. Both SARS-CoV-2 rapid antigen and SARS-CoV-2 + Omicron RT-PCR tests were positive. He has been receiving aspirin at a dose of 100 mg/day. Except for mild cough and sore throat, there was no complaint liable to COVID-19 infection.

Dermatological examination disclosed uniform, bilateral, and symmetrical, cyanosis-like purplish-to-bluish discoloration on the pulps and volar surfaces of the fingers [Figure 1]. Dermatoscopy findings are displayed in Figure 2. There was no involvement of the toes.

What is the Diagnosis?

Artificial staining of the skin.

Discussion

Dermatoscopic examination portrayed blue dye pigment and remnant textile filaments [Figure 2]. The ultimate diagnosis was artificial fabric dye staining of the fingers due to contact with a pair of navy-blue corduroy trousers [Figure 3]. Scrubbing of the hands with a cleansing bar accomplished removal of cutaneous staining within a week.

Fabric dye staining of the skin (crocking) might be through dark red, blue, and black fabrics or garments. Henna, inks, hair dyes, and silver dressings may also cause skin staining. Artificial stains are usually temporary; that is, the dye will fade by itself within 1–2 weeks along with normal epidermal desquamation.

From the Department of Dermatology, Acıbadem University School of Medicine, İstanbul, Turkey

Address for correspondence: *Dr. Emel Öztürk Durmaz, Acıbadem Maslak Hospital, Büyükdere Caddesi 40, Maslak 34457, İstanbul, Turkey.*
E-mail: emelerkek@yahoo.com

Access this article online

Quick Response Code:

Website: www.e-ijd.org

DOI: 10.4103/ijd.ijd_567_22

The most important differential diagnostic consideration in the present case was COVID fingers, reviewed briefly as follows. Along with the coronavirus pandemic, a sudden outbreak of chilblain-like acral lesions (CLL) was noticed by the dermatologists and dubbed as COVID toes/fingers.[1] CLL is the most common cutaneous manifestation of COVID-19 infection.[1–3] It is usually a late manifestation (75%) and generally encountered in children and young adults with milder or asymptomatic COVID-19 infection, foretelling a good prognosis.[2,4]

CLL presents with dusky, erythematous-to-violaceous macules, papules, and plaques on acral sites, particularly fingers (24%), toes (89%), or both (10%), with oedema, purpura, vesiculation, erosions, crusting, and ulceration.[2,4] The lesions may be asymptomatic (25%), although pruritus and pain are commonly elicited.[2,4] Acral ischemic lesions attributable to thrombotic coagulopathy and consisting of livedo racemosa, retiform purpura, acrocyanosis, or digital necrosis have been confronted in adults with severe systemic SARS-CoV-2 infection.[1,4,5]

The pathophysiology of CLL is not clear. There are three main theories: acral ischemia due to direct virus-induced

Figure 1: Uniform bluish-to-purplish discoloration on the fingertip pads and volar surfaces of the fingers

How to cite this article: Demircioğlu D, Öztürk Durmaz E, Şahin S. Cyanotic fingers and omicron, oh my! Indian J Dermatol 2023;68:231-2.

Received: July, 2022. **Accepted:** November, 2022.

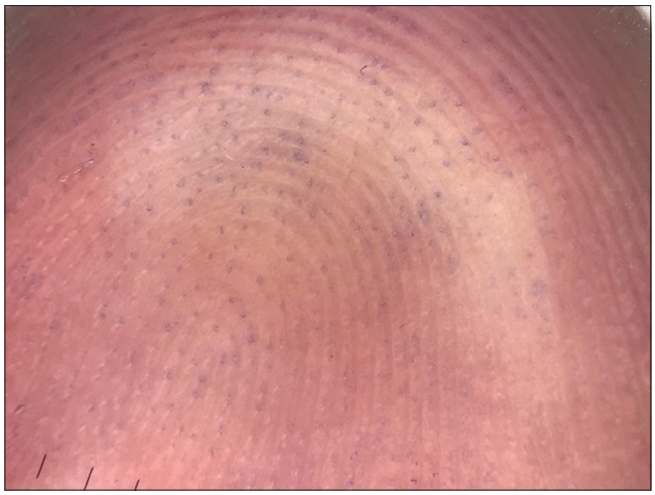

Figure 2: The dermatoscopic landscape is shown in this figure

Figure 3: The culprit garment responsible for finger staining was a pair of newly purchased navy-blue corduroy trousers

endothelial damage or immune complex deposition; type I IFN-induced thrombotic microangiopathy; and vaso-occlusive coagulopathy (thrombosis or emboli formation).[1,3] According to the prevailing theory, CLL signifies an innate immune reaction to SARS-CoV-2 virus through type I IFN secretion. Early type I IFN response is believed to mute viral replication and block antibody response; however, the resultant cytokine storm could induce microangiopathic changes, paving the way for CLL development.

Partial or complete resolution of CLL within a few weeks is the usual course (85%), although recurrences (2%) and persistence (13%) have been noted.[4] In mild cases, symptomatic treatment with topical steroids, analgesics and anti-histamines may be all that is required.[1,3] Therapeutic options in severe, recurrent, or persistent CLL embrace systemic steroids, topical (nitric oxide paste) and oral vasodilatory agents, calcium channel blockers, cinnarizine, pentoxifylline, sildenafil, aspirin, nitroglycerin, and enoxaparin.[3]

The present case taught us to avoid hasty and confident clinical diagnoses and to examine the skin meticulously, with the assistance of dermatoscopy, even in seemingly straightforward cases. It also underscored the importance of expert dermatologist evaluation in all patients presenting with skin findings during coronavirus infection. With the flood of publications, it has become a growing necessity for a dermatologist to remain updated on the cutaneous manifestations of COVID-19. However, we try to keep in mind and advise our colleagues that dermatology is not centred around COVID-19.

Learning points

* COVID toes/fingers is the most publicized and most common manifestation of COVID-19 infection.
* It is a late manifestation of COVID-19 infection attributed to type I IFN secretion.
* Meticulous dermatological and dermatoscopic examination is of utmost importance in any patient presenting even with tell-tale clinical stigmata of COVID-19 infection.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Panda M, Agarwal A, Hassanandani T. Dermatological manifestations of COVID-19 in children. Indian Pediatr 2022;59:393-9.
2. Lee SS, Mancuso J, Tracy A, Eichenfield LF. Not COVID Toes: Pool palms and feet in pediatric patients. Cutis 2021;108:276-95.
3. Huynh T, Sanchez-Flores X, Yau J, Huang JT. Cutaneous manifestations of SARS-CoV-2 infection. Am J Clin Dermatol 2022;23:277-86.
4. Kashetsky N, Mukovozov IM, Bergman J. Chilblain-like lesions (CLL) associated with COVID-19 ("COVID Toes"): A systematic review. J Cutan Med Surg 2021;25:627-33.
5. Kolivras A, Thompson C, Pastushenko I, Mathieu M, Bruderer P, de Vicq M, *et al*. A clinicopathological description of COVID-19-induced chilblains (COVID-toes) correlated with a published literature review. J Cutan Pathol 2022;49:17-28.