Rust-colored patches of the lower extremity in a COVID-19 patient

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Title page

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CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

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CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

AUTHOR CONTRIBUTION

Jacem Rouatbi: Conceptualization; writing – original draft. **Mouna Korbi:** Supervision; writing – review and editing. **Nouha Ben Abdeljalil:** Investigation; resources. **Hichem Belhadjali:** Supervision; investigation. **Jameleddine Zili:** Supervision; validation; Interpretation of data and revision of the manuscript.

CASE PRESENTATION

A previously healthy 67-year-old man presented to the Emergency Department with fever evolving for 5 days and dry cough. Nasopharyngeal swab polymerase chain reaction (PCR) confirmed Coronavirus disease 2019 (COVID-19) infection. The patient was diagnosed as a mild form of COVID-19. He needed only symptomatic treatment and clinical monitoring. Five days later, during his hospitalization in Infectious Disease Department, we noted multiple asymptomatic golden brown-colored infiltrated patches on the inner side of his left leg (Figure 1a). The rest of physical examination did not show any abnormalities. He has used, recently, only paracetamol. He denied any exposure to a new product or trauma on both legs. Dermoscopic examination showed brownish to coppery-red diffuse coloration of the background, round to oval red dots and globules (Figure 1b). Histological examination of skin biopsy revealed superficial dermal band-like infiltrate of lymphocytes and histiocytes, red blood cells extravasation (Figure 2a). For further confirmation, Perls' stain was performed and showed hemosiderin deposits in the dermis (Figure 2b). The evolution was marked by spontaneous disappearance of skin lesions 2 weeks after clinical recovery from COVID-19.

WHAT IS YOUR DIAGNOSIS?

COVID-19-Triggered Lichen Aureus (purpuricus)

COMMENT

Skin vascular symptoms have been reported in patients with COVID-19 disease[1]. The occurrence of livedo, necrotic or non-necrotic purpuras is explained by the infection-related coagulopathy[1]. Our patient presented Lichen Aureus (LA) in association with a mild form of COVID-19 disease. LA is a rare, localized variant of pigmented purpuric dermatoses (PPDs) characterized by the sudden onset of unilateral, well circumscribed, rust-colored patches, usually on the lower legs, with particular dermoscopic features, as was seen in our case[2,3]. PPDs are also known as capillaritis. Their precise cause remains unclear. Several cofactors including venous hypertension, capillary fragility, infections and drugs intake were suggested[2]. One case of PPD was described as Schamberg purpura in a 13-year-old child with mild COVID-19 infection[4]. We think, in our case, LA may be considered as a vascular skin manifestation associated with COVID-19. However, the severe acute respiratory syndrome coronavirus-2 may lead to excessive activation of inflammatory mediators creating a "cytokine storm" which may cause damage to the endothelium in addition to changes in the cellular component of immunity with activation of the complement system[1,4]. Thus, alteration of endothelial cells function, causing red blood cells to leak through the vessel walls, may be responsible in this case of triggering a cell-mediated hypersensitivity reaction[4,5]. Therefore, in our case, cell-mediated immune response seems to have probably a role in the onset of LA few days after first COVID-19 systemic symptoms.

In conclusion, our observation and the case about Schamberg disease previously described suggest PPD as non-specific findings of SARS-CoV-2 infection[4]. Although the relationship is not fully elucidated, the knowledge of such cutaneous manifestations is worthwhile to mention in order to help improve disease recognition and care.

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Figure Legends

Figure 1: (a) Multiple asymptomatic golden brown-colored infiltrated patches on the inner side of the left leg; (b) Brownish to coppery-red diffuse coloration of the background, round to oval red dots and globules (Dermlite DL4®X40).

Figure 2: (a) Lichenoid lymphocytic inflammation at the dermis around the small vessels with with minimal keratinocytic necrosis (Hematoxylin Eosin X 100); (b) Perls stain highlights hemosiderin deposits in the superficial dermis.