CLINICAL IMAGE

# Untypical presentation of cutaneous lupus in a young patient following COVID-19: differentiation of COVID toes

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Chilblain lupus erythematosus (CHLE; first described in 1888) is an exceptional form of chronic cutaneous lupus. The symmetrical purple-red erythematous skin eruptions (resembling frostbites) affect mainly acral areas.[1] The concise differential diagnosis of these lesions is warranted, particularly during the era of the COVID-19 pandemic. The diagnosis of CHLE is supported by: a history of exacerbations after exposure to cold, lesions on the hands,[1,2] and immunoglobulin deposits and complement deposits in the dermal-epidermal junction.[1] COVID toes (itchy erythematous and swollen patches on the feet) are considered to be the most remarkable dermatological revelator of SARS-CoV-2 infection. The diagnosis of COVID toes (in case a false-negative result of reverse transcriptase–polymerase chain reaction cannot be excluded) is supported by: symptoms shorter than 1 week and immunoglobulin (Ig) M seroconversion.[1]

A previously healthy 24-year-old male student was admitted to the dermatological outpatient clinic in August 2020 due to skin lesions localized on the hands and feet. The initial suspicion was cutaneous manifestation of SARS-CoV-2 infection (which the patient had in June 2020), COVID toes. On physical examination, discrete erythematous lesions were located symmetrically over the proximal interphalangeal joints (FIGURE 1A), while on the feet, the lesions were blue-red, erythematous, well-delimited, painful, and exacerbated by the exposure to cold (FIGURE 1B and 1C). He did not report joint pain nor Raynaud phenomenon. Dermoscopy revealed linear dotted vessels and white rosettes (FIGURE 1D), while capillaroscopy showed no abnormalities. The results of the following diagnostic tests were within reference ranges: complete blood count, aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, creatinine, estimated glomerular filtration rate, C-reactive protein, and coagulation parameters. Additionally, the following were measured twice, 3 months apart: antinuclear antibodies, anti-double stranded DNA antibodies, antineutrophil cytoplasmic antibodies, lupus anticoagulant, IgG / IgM anticardiolipin and anti–$\beta_2$-glycoprotein I antibodies; only the level of anticardiolipin IgM was elevated

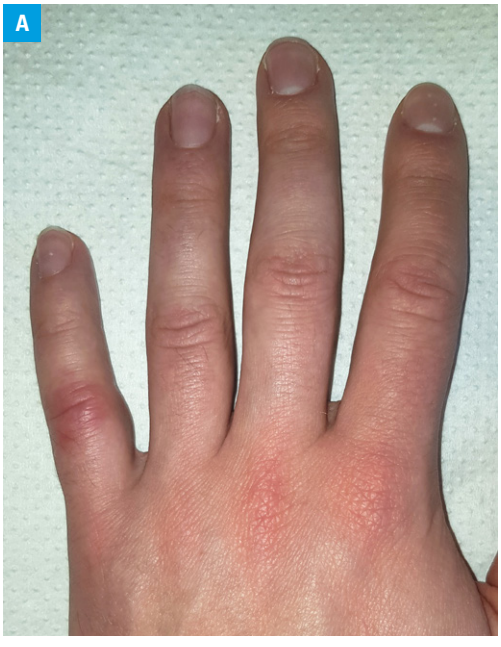


**FIGURE 1** A – erythematous lesions over the interphalangeal joint of the fifth finger

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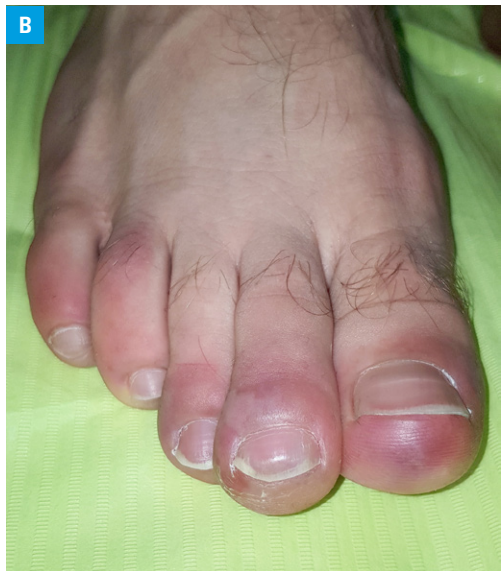


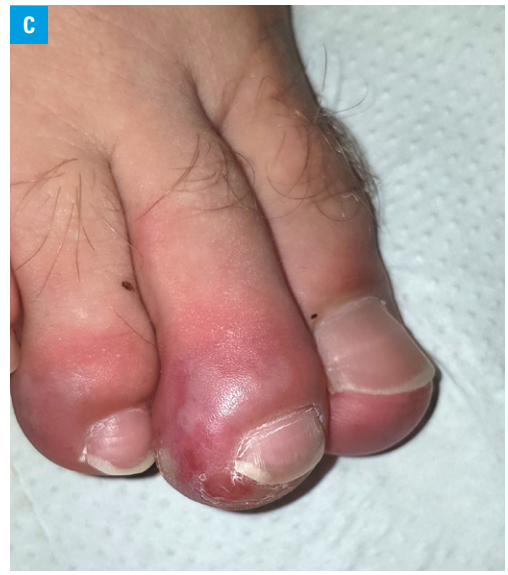


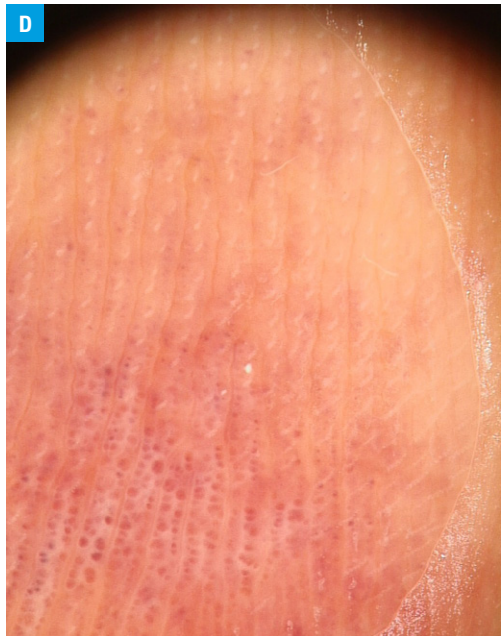


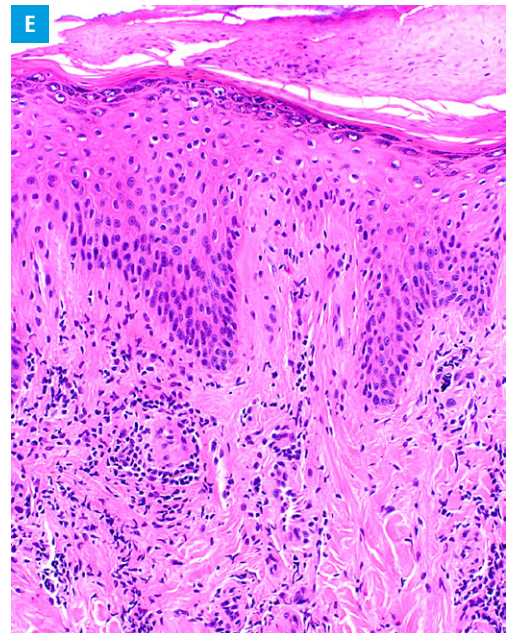


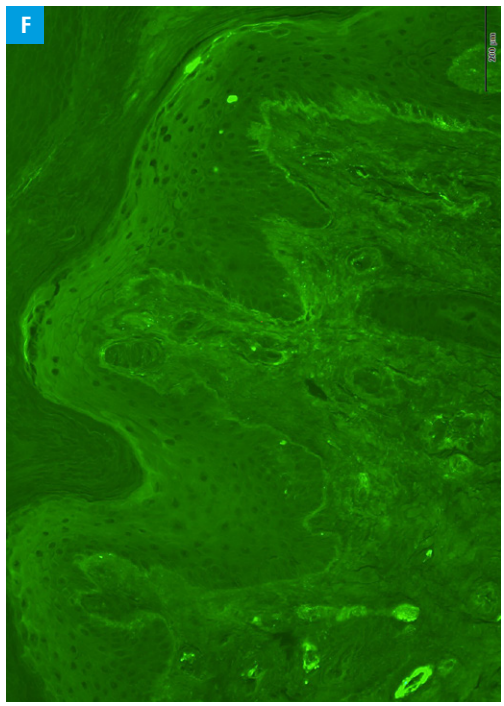


**FIGURE 1** **B**, **C** – well-marked blue-red lesions on the feet; **D** – dermoscopy showing linearly aligned dotted vessels surrounded by white rosettes; histology of a biopsy specimen obtained from the feet showing: **E** – slightly acanthotic epidermis with exocytosis of lymphocytes. Vessels of the superficial vascular plexus with narrowed lumina, endothelial swelling, and fibrin deposition in the walls are also visible. Moreover, moderately dense, perivascular, lymphocytic infiltrate can be observed (hematoxylin and eosin staining, magnification × 200); **F** – granular deposits of IgM along the dermal-epidermal junction (direct immunofluorescence, magnification ×200)

(21.98 IgM phospholipid units; reference <12 IgM phospholipid units). Cryoglobulin test were negative. The anti-SARS-CoV-2 IgG antibody test was strongly positive, while the twice-repeated reverse transcriptase–polymerase chain reaction test from the nasopharyngeal swab was negative. In the biopsy specimen obtained from the feet lesions (those on the hands resolved spontaneously) the following were found: vacuolar degeneration of the basal layer keratinocytes, lymphocytic infiltrates (**FIGURE 1E**), increased glycosaminoglycans in the dermis, and IgM deposits in the dermal--epidermal junction (**FIGURE 1F**). During the follow--up visit, the patient recalled that the lesions on the feet developed in December 2019 or January 2020, while these on the hands, in June 2020.

Based on the examination findings, CHLE was recognized (according to the Mayo Clinic criteria), and after ophthalmologist consultation, treatment with hydroxychloroquine (400 mg per day) and topical clobetasol propionate was introduced, resulting in a significant improvement of the lesions.[3,4]

The presented case emphasizes the necessity of a careful differential diagnosis of lesions that match the description of COVID toes almost perfectly. It should be noted that the patient received treatment immediately and remains under close dermatological control due to an increased risk of systemic lupus.[5]

Holistic analysis of data from the patient history together with the results of the dermatological examination (laboratory, histological, and immunohistochemical tests) allowed for the differentiation between CHLE and COVID toes in a patient who had SARS-CoV-2 infection in the recent past.

## ARTICLE INFORMATION

**CONFLICT OF INTEREST** None declared.



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