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5 Situación de COVID19 en España. Actualizado a 27 de marzo. URL <https://covid19.isciii.es/> (last accessed: 12 May 2020).

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Dermoscopy features of COVID-19-related chilblains in children and adolescents

Editor,

Chilblains are skin condition frequently seen by physicians worldwide during the COVID-19 outbreak.^{1,2} We attended 22 children and adolescents with chilblains during the outbreak peak of COVID-19 in Madrid. The clinicopathological and laboratory features of these patients have been reported.¹ We describe herein the dermoscopic findings. Approval from the Institutional Ethics Committee and Board was obtained. Standard informed consents were obtained for recording images in all patients.

We analysed 41 dermoscopy pictures obtained from different skin lesions in 12 patients with chilblains. The patients presented

erythematous to purpuric macules and violaceous swellings located on the toes and feet. The images corresponded to lesions located on the perionychium (17), tip of toe with or without subungual (13), dorsum or side of toe (seven), dorsum of foot (two), ankle (one) and only subungual (one) (Table 1).

Three main dermoscopic features were observed: a background area, globules and reticule (Fig. 1). The background area is the predominant background colour in the lesion, ranging from red, purple and brown to grey. Globules are round to oval structures of red to purple colour. And the network reticule is a mesh of grey-brown interconnected lines usually located peripherally within the background macule.

The background area was present in all cases; the predominant colour was red in 18 pictures, brown in 11, purple in 10 and grey in 2. Most pictures (31) contained areas of other colours within the areas whereas in 10 (24.4%) there was only one homogeneous colour present. Globules were seen in 38 images (92.7%) and were prominent in 32 and mild in 6. The globules were included within the background area in most cases, but in some they were seen outside the macules on a background of normal-looking skin. A reticule was observed in 12 images (29.3%). Other features found were splinter haemorrhages in the nails (three images), dilated capillaries in the nail folds with loss of polarity (two images) and subcorneal haemorrhagic dots (one image).

Dermoscopy mirrors the clinical and histopathologic features of COVID-19-related chilblains.¹ The background colour is an

Table 1 Dermoscopic features of 41 pictures corresponding to 12 children and adolescents with COVID-19-related chilblains

Patient	Lesion	Background area	Globules	Reticule
1	Perionychium	Red + Brown areas	+	–
	Tip of toe	Red	+	–
2	Perionychium	Purple + Brown areas	++	–
	Perionychium	Brown	++	+
	Perionychium	Red + Brown areas	++	–
	Perionychium	Red + Purple areas	++	–
3	Side of toe	Red	++	–
	Tip of toe	Red + Purple areas	+	–
	Tip of toe	Red + Purple areas	+	–
4	Dorsum of foot	Red	++	–
5	Dorsum of toe	Brown + Purple areas + Red areas	++	+
	Perionychium	Purple + Brown areas	++	+
	Tip of toe	Brown	+	–
	Tip of toe, subungual	Purple + Brown areas	++	–
	Tip of toe, subungual	Brown + Purple areas	++	–
6	Subungual	Brown	–	–
	Tip of toe	Grey + Purple areas + Brown areas	++	–
7	Dorsum of toe	Purple + Brown areas + Red areas	++	–
	Ankle	Red + Purple areas + Brown areas	++	–
	Dorsum of toe	Brown	++	+
8	Perionychium	Purple + Brown areas	++	+
	Perionychium	Brown + Purple areas	++	+
	Perionychium	Purple + Brown areas	++	+

Table 1 *Continued*

Patient	Lesion	Background area	Globules	Reticule
9	Perionychium	Grey + Brown areas	++	+
	Perionychium	Red + Brown areas	++	–
	Dorsum of toe	Brown + Purple areas + Grey areas	++	+
	Dorsum of toe	Purple + Brown areas	++	+
	Dorsum of toe	Brown + Purple areas	++	+
10	Perionychium	Red + Grey areas + Purple areas + Brown areas	++	–
	Perionychium	Red	+	–
11	Perionychium	Red + Purple areas + Brown areas	++	+
	Perionychium	Red + Brown areas	++	–
	Dorsum of foot	Red + Purple areas	++	–
	Perionychium	Purple + Brown areas	++	–
	Perionychium	Purple	++	–
	Tip of toe	Red + Brown areas	++	–
	Tip of toe	Red + Purple areas	++	–
12	Tip of toe, subungual	Brown + Red areas	–	–
	Tip of toe, subungual	Brown + Red areas	++	–
	Tip of toe, subungual	Purple + Brown areas	++	–

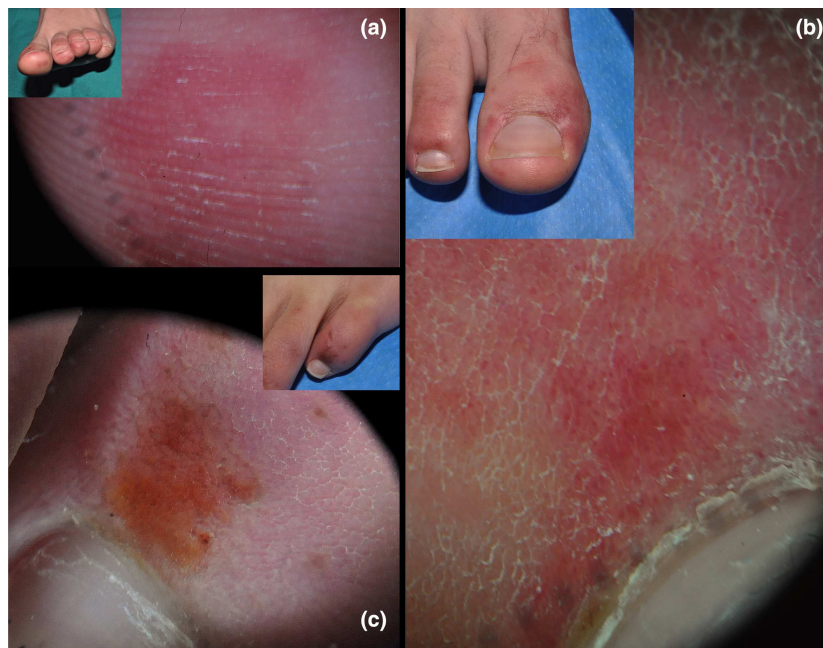


Figure 1 (a) Homogeneous red area on the tip of toe. No globules or reticule are seen. (b) Red background area with purpuric globules on the perionychium. (c) Brown area with reticule and brown globules both within the area and peripherally.

indicator of vascular macules, and variations found in the pictures analysed probably reflect the evolution of lesions, being mostly red in early phases from vascular dilatation, purple later from extensive red cell extravasation and finally brown as a consequence of hemosiderin deposition. Grey areas may be indicative of more intense ischaemic phenomena. Globules most likely represent damaged vessels with extravasated red cells. The grey-

brown reticule may be the result of extensive damage to the dermal vascular plexus.


The presence of different colours and features in pictures from different locations in the same patient is most likely due to local factors and to the different state of evolution of different lesions. Patients usually present new lesions throughout the evolution of COVID-19-related chilblains.

The specificity of the features found is uncertain because no dermoscopic study of primary chilblains or chilblains secondary to other causes has been published. Dermoscopy studies in purpuric lesions highlight that the background colour is related to the inflammatory infiltrate, hemosiderin deposition and vascular dilatation.^{3,4} Red globules represent extravasated red cells, and the grey-brown reticule is possibly due to pigment incontinence and lichenoid infiltrates along with vascular changes.⁵

We conclude that dermoscopy may be a useful aid for the diagnosis of chilblains in the setting of COVID-19 infection.

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L. Navarro,¹ D. Andina,² L. Noguera-Morel,³
A. Hernández-Martín,³ I. Colmenero,⁴ A. Torrelo^{3,*} 

¹Department of Dermatology, Hospital Beata María Ana, Madrid, Spain,

²Emergency Department, Hospital Infantil Universitario Niño Jesús,

Madrid, Spain, ³Department of Dermatology, Hospital Infantil Universitario

Niño Jesús, Madrid, Spain, ⁴Department of Pathology, Hospital Infantil

Universitario Niño Jesús, Madrid, Spain

*Correspondence: A. Torrelo. E-mail: atorrelo@aedv.es

References

- Andina D, Noguera-Morel L, Bascuas-Arribas M *et al*. Chilblains in children in the setting of COVID-19 pandemic. *Pediatr Dermatol* 2020; **37**: 406–411.
- El Hachem M, Diociaiuti A, Concato C *et al*. A clinical, histopathological and laboratory study of 19 consecutive Italian paediatric patients with chilblain-like lesions: lights and shadows on the relationship with COVID-19 infection. *J Eur Acad Dermatol Venereol* 2020. [Epub ahead of print] <https://doi.org/10.1111/jdv.16682>
- Zaballos P, Puig S, Malveyh J. Dermoscopy of pigmented purpuric dermatoses (lichen aureus): a useful tool for clinical diagnosis. *Arch Dermatol* 2004; **140**: 1290–1291.
- Vazquez-Lopez F, García-García B, Sanchez-Martin J, Argenziano G. Dermoscopic patterns of purpuric lesions. *Arch Dermatol* 2010; **146**: 938.
- Martín JM, Bella-Navarro R, Jordá E. Vascular patterns in dermoscopy. *Actas Dermosifiliogr* 2012; **103**: 357–375.

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Concurrent chilblains and retinal vasculitis in a child with COVID-19

Dear Editor,

Reports on COVID-19 in children are limited. Despite new data emerging, and understanding of the disease improves rapidly, there are as yet several features and complications related to the

disease that remain unknown. Herein, we report the first case of a child with chilblains and retinal vasculitis related to COVID-19.

An 11-year-old patient arrived at the Dermatology Emergency Department with a 2-week history of asymptomatic plaques on his toes. He did not complain of fever, respiratory symptoms (as cough or dyspnoea), headache, malaise, sore throat, nasal congestion or diarrhoea. He had no history of family exposure, and he was taking strict social distancing measures due to the Spanish Government restrictions applied on 13 March 2020. Physical examination showed oedematous and erythematous to violaceous plaques on the dorsal toes of both feet (Fig. 1). These lesions were clinically compatible with chilblains. A nasopharyngeal sample was obtained, and a reverse transcription polymerase chain reaction (RT-PCR) was negative for SARS-CoV-2. Serologic tests (both immunochromatographic and chemiluminescence immunoassay) showed negative SARS-CoV-2 IgM with positive IgG antibodies. Complementary studies, including autoimmune panel (rheumatoid factor, lupus anticoagulant, antinuclear, antineutrophil cytoplasmic, anti-Ro/SSA, anti-La/SSB and anticardiolipin antibodies), serum proteinogram, C-reactive protein, coagulation studies, cryoglobulins and D-dimer were normal. Other common viral infections were ruled out by laboratory investigation.

Due to known potential thromboembolic complications related to COVID-19, the patient was referred to the Ophthalmology Department, despite being visually asymptomatic and not reporting any ocular complaint. An ophthalmologic examination was performed: his visual acuity was 1 in both eyes, and the pupils were reactive and symmetric. The slit lamp examination showed no pathological findings. An examination of the ocular fundus showed retinal vasculitis located on the equator of the left eye, as well as one perivascular infiltrate as well and



Figure 1 Erythematous to violaceous plaques on the dorsal toes of both feet compatible with chilblains.