

LETTER

Therapy for probable COVID-19 associated erythema pernio-like lesions in pediatric age. Case report

Dear Editor,

We report a case of a 15 year-old girl with circumscribed erythematous and edematous lesions, bluish-red color, on the dorsal surfaces of the toes of the left foot. The lesions were associated with burning and pain and improved after 4 days treatment with mometasone furoate cream (once a day) and heparin gel (once a day; Figures 1 and 2.

During the last 2 months (from February 14 to April 10, 2020) we observed 33 cases of unusual lesions on acral sites in Italian children and adolescents.

Most of them were detected by pediatricians who are members of the Pediatric Dermatology Group of the FIMP (Italian Federation of Pediatricians), which carries out epidemiological research in our country.

The observed lesions consist of circumscribed erythematous edematous elements, with a purplish red color, similar to chilblains/erythema pernio, localized mainly on the feet, especially at the dorsal surfaces, and to a lesser extent on the hands.

General symptoms were detected, as a dry and irritating cough, sore throat and fever only in three patients.

Local symptoms included swelling (nine cases), itching (eight cases), pain (six cases), and burning (two cases). In 18 cases, no symptoms were associated with the skin lesions (Table 1).

Due to the mild course, none of our patients received clinical or laboratory diagnosis of the COVID-19 infection.

However, the temporal coincidence of the reporting of unusual erythema pernio-like lesions with the COVID-19 epidemic suggests that these skin manifestations be considered as possible expression of the COVID-19 infection in children and adolescents.

Cutaneous manifestations of COVID-19 may be rare and in most cases are similar to cutaneous involvement occurring during common viral infections, such as red rashes or urticaria.¹⁻³ In one adult patient, the first case in Thailand, the rash was associated with petechiae similar to Dengue.⁴

The most recent anatomical-pathological investigations have documented not only important and early phenomena of fibrosis, but also thrombotic micro-angiopathy in the lung.^{5,6} Moreover, among the monoclonal antibodies, the one with anticoagulant and fibrinolytic properties (such as eculizumab) seems to act better.⁷

Although specific skin lesions due to the COVID-19 infection have not been described, the affinity of the virus for the vascular endothelium and the consequent obliterating and thrombotic micro-angiopathy could also be expressed on the skin as petechiae, tiny bruises, livedoid eruptions, or erythema pernio-like lesions.

Could these be the initial expressions of the COVID-19 infection in children? Could they be mild or asymptomatic forms of COVID-19 infection in children?

At the moment we have no answers. The detection after a few weeks of the IgM and IgG antibodies in our patients will confirm whether or not these skin manifestations can be considered a sign of the COVID-19 infection in children.

Most of our patients were treated with oral paracetamol, antibiotics, antihistamines, and topical steroids. The evolution of the lesions was favorable with complete resolution in 17 of them in periods ranging from 8 to 16 days.

Our patient improved after only 4 days of treatment with mometasone furoate and heparin gel. This can be a simple and effective therapy for erythema pernio-like lesions. Further studies are



FIGURE 1 Erythema pernio-like lesions on the dorsal surfaces of the toes of the left foot (second day)



FIGURE 2 After 4 days of treatment with mometasone furoate cream and heparin gel twice a day



TABLE 1 Patients with erythema pernio-like lesions of the limb extremities

Case no.	Age (year)	Sex	Site of lesions	Systemic and local symptoms
1	12	F	Left foot	Cough
2	10	F	Left foot	None
3	11	M	Feet	None
4	14	F	Left foot	Itching, pain
5	12	F	Feet	Itching, pain, and swelling
6	10	M	Feet	Swelling
7	8	M	Left foot and face	Itching, swelling + erythema multiforme
8	15	F	Feet	Itching
9	15	M	Feet	None
10	13	F	Feet	Itching
11	13	F	Left foot	Itching
12	15	M	Feet	Pain and swelling
13	10	M	Feet	Swelling
14	17	F	Feet	Burning, pain, and swelling
15	14	M	Feet	None
16	17	M	Hands	None
17	13	M	Feet	None
18	0	M	Right foot	None
19	10	M	Feet	None
20	14	M	Hands	None
21	9	M	Left foot	None
22	54	M	Feet	None
23	13	M	Feet	None
24	12	M	Feet	Sore throat, pain, and swelling
25	10	M	Feet	Itching
26	13	M	Feet	None
27	5	M	Feet	None
28	4	M	Right hand	None
29	9	F	Face	None
30	15	M	Feet and right hand	Fever, burning, pain, and swelling
31	9	M	Left foot	None
32	17	F	Right foot and right hand	None
33	11	F	Feet	Itching and swelling

needed to clarify the relationship between erythema pernio-like lesions and the COVID-19 infection and to confirm the usefulness of local therapy with mometasone furoate and heparin.

CONFLICT OF INTEREST

None.



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