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Outbreak of chilblain-like acral lesions in children in the metropolitan area of Milan, Italy, during the COVID-19 pandemic

To the Editor: Since the end of February 2020, when the first cases of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) were identified in Italy, the metropolitan area of Milan has been greatly affected by the spread of the disease. Individual case reports[1] and studies of case series[2-5] have recently highlighted the presence of chilblain-like acral manifestations in young COVID-19 patients.

Between March 26 and April 26, 2020, 30 patients with a median age of 11 years (range 2-17 years) and chilblain-like acral lesions who had not started treatment with any new drug in the 15 days preceding lesion onset were referred to the Pediatric Dermatology Unit of the Fondazione IRCCS Ca' Granda in Milan, with the collaboration of the Italian Pediatric Primary Healthcare Society (SICuPP) Lombardy Section (Table I). Seventeen (56.7%) were male patients.

Thirteen patients (43.3%) experienced systemic symptoms a median of 6 days (range −1 to 35 days) before skin lesion onset, the most frequent being fever (n = 9/13; 69.2%), followed by cough (n = 6/13; 46.2%), coryza (n = 3/13; 23.1%), pharyngodynia (n = 2/13; 15.4%), weakness (n = 2/13; 15.4%), dyspnea (n = 2/13; 15.4%), abdominal pain (n = 1/13; 7.7%), and headache (n = 1/13; 7.7%).

In all cases, the lesions were erythematous-violaceous patches or slightly infiltrated plaques, associated with edema in 3 cases (Fig 1, *A-D*). No blisters, crusts, or ulcers were observed. Twenty-six patients (86.7%) had foot lesions, 2 involving only the ankle, and 4 had hand lesions, including 2 with foot involvement. Lesion distribution was unilateral in 4 cases (13.3%). Usually moderate itching (median visual analog scale score 4.5) was recorded in 14 patients (46.7%), and pain in 5 (16.7%; median visual analog scale score 3). The median duration of the lesions in the 9 patients whose lesions healed was 7 days (range 1-23 days). Two patients underwent a skin biopsy, and histology showed perivascular and periadnexal dermal lymphocytic infiltrates suggesting chilblains (Fig 1, *E*). Polymerase chain reaction–based testing result of nasopharyngeal swabs for SARS-CoV-2 was negative in all 6 patients tested.

Like other centers,[2,5] our Pediatric Dermatology Unit, which has a catchment area of approximately 3,000,000 people, has recently experienced an "outbreak" of 30 cases of chilblain-like lesions in comparison with only 3 cases of authentic chilblains in the corresponding period of 2019. The lesions are probably vasculopathic, and although their etiopathogenesis is still unclear, it seems to be related to SARS-CoV-2 infection. Median latency in our cohort was shorter than that reported in previous series[2,4] and was slightly longer in the patients younger than 10 years (7.5 vs 6 days). This manifestation usually appears in asymptomatic or paucisymptomatic children, who do not often undergo SARS-CoV-2 testing in Italy for economic reasons. The recognition of chilblain-like lesions may facilitate a diagnosis of COVID-19 in asymptomatic or paucisymptomatic pediatric patients.

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Table I. Demographic and clinical data of patients with chilblain-like lesions observed at the Pediatric Dermatology Unit of the University of Milan between March 26 and April 26, 2020

ID	Sex	Age at diagnosis	Residence	Nasopharyngeal swab for SARS-CoV-2	Cohabitants with systemic symptoms/ COVID-19 in the 4 weeks preceding lesion onset	Systemic symptoms	Time between systemic symptoms and onset of lesions (days)	Duration of lesions (days)	Location of lesions	Distribution of lesions	Itching (visual analogue scale)	Local pain (visual analogue scale)
1	F	10	Milan (province)	No	None	None	Not applicable	23	Feet (toes)	Bilateral	0	0
2	F	17	Milan (city)	Negative	Grandfather died of COVID-19 pneumonia	Fever	13	12 (ongoing)	Hand (fingers)	Unilateral	2	0
3	F	4	Milan (city)	No	None	Fever	−1	3	Feet (toes, dorsum)	Bilateral	0	0
4	M	12	Milan (province)	No	None	None	Not applicable	9 (ongoing)	Feet (toes, soles)	Bilateral	5	0
5	F	11	Milan (province)	No	Both parents (fever); not tested for SARS-CoV-2	Fever, coryza, cough, abdominal pain	1	16 (ongoing)	Feet (toes)	Bilateral	2	0
6	F	17	Milan (province)	No	Two friends affected by COVID-19 (fever, cough)	None	Not applicable	18 (ongoing)	Feet (soles)	Bilateral	5	0
7	M	6	Milan (province)	No	None	None	Not applicable	10 (ongoing)	Hands (palms), feet (soles)	Bilateral	6	0
8	M	17	Milan (province)	No	None	None	Not applicable	25 (ongoing)	Feet (toes)	Bilateral	0	3
9	M	16	Milan (province)	No	None	None	Not applicable	24 (ongoing)	Feet (toes)	Bilateral	0	4
10*	F	11	Milan (province)	Negative	Mother (cough); tested negative for COVID-19	Fever, headache	1	32 (ongoing)	Feet (soles, dorsum)	Bilateral	1	0
11	F	11	Milan (province)	No	None	Cough, dyspnea	30	18 (ongoing)	Feet (toes)	Bilateral	0	0
12	M	17	Milan (province)	No	None	None	Not applicable	24 (ongoing)	Feet (dorsum)	Bilateral	0	2

13	M	11	Milan (city)	No	None	None	Not applicable	39 (ongoing)	Foot (toes)	Unilateral	0	0
14	F	13	Milan (province)	No	Father (fever, cough); not tested for SARS-CoV-2	None	Not applicable	13 (ongoing)	Feet (toes)	Bilateral	0	0
15	M	10	Milan (province)	No	None	None	Not applicable	21 (ongoing)	Foot (toe)	Unilateral	0	0
16	M	14	Milan (province)	No	None	Coryza, weakness	2	17 (ongoing)	Foot (sole)	Unilateral	0	0
17	M	11	Milan (province)	No	None	None	Not applicable	1	Ankles	Bilateral	0	0
18	M	2	Milan (province)	No	Mother (cough and coryza); not tested for SARS-CoV-2	Cough, coryza	5	5	Hands (palms)	Bilateral	0	0
19	M	4	Milan (province)	No	None	None	Not applicable	7	Feet (soles)	Bilateral	0	0
20*	F	11	Milan (city)	Negative	Both parents (cough); father tested negative for SARS-CoV-2	Fever, cough	6	19	Feet (toes, dorsum)	Bilateral	2	0
21*	F	6	Milan (province)	Negative	Mother (fever); tested negative for SARS-CoV-2	Fever	10	7	Feet (toes, soles)	Bilateral	0	3
22*	M	5	Milan (city)	Negative	Grandfather with bilateral pneumonia (not tested for SARS-CoV-2); mother tested negative for SARS-CoV-2	Cough, dyspnea	35	24	Feet (toes, soles), hand (palm)	Bilateral	1	5
23	F	6	Milan (city)	No	None	None	Not applicable	14 (ongoing)	Feet (toes, soles)	Bilateral	0	0
24	M	14	Milan (city)	Negative	None	None	Not applicable	19 (ongoing)	Feet (toes)	Bilateral	5	0

Continued

Table I. Cont'd

ID	Sex	Age at diagnosis	Residence	Nasopharyngeal swab for SARS-CoV-2	Cohabitants with systemic symptoms/ COVID-19 in the 4 weeks preceding lesion onset	Systemic symptoms	Time between systemic symptoms and onset of lesions (days)	Duration of lesions (days)	Location of lesions	Distribution of lesions	Itching (visual analogue scale)	Local pain (visual analogue scale)
25	M	4	Milan (province)	No	Mother with COVID-19 (presenting with fever and cough)	Fever, pharyngodynia	2	8 (ongoing)	Ankles	Bilateral	3	0
26	M	14	Milan (province)	No	Father (fever, cough, dyspnea); not tested for SARS-CoV-2	None	Not applicable	24 (ongoing)	Feet (toes)	Bilateral	0	0
27	M	13	Milan (province)	No	None	None	Not applicable	6 (ongoing)	Feet (toes, soles)	Bilateral	4	0
28	M	16	Milan (province)	No	Sister (fever); not tested for SARS-CoV-2	Fever	21	9 (ongoing)	Feet (toes)	Bilateral	5	0
29	F	10	Milan (province)	No	None	Fever, cough, weakness, pharyngodynia	30	20 (ongoing)	Feet (toes)	Bilateral	5	0
30	F	14	Milan (province)	No	Sister (fever, cough, pharyngodynia, weakness)	None	Not applicable	3	Feet (toes)	Bilateral	5	0

COVID-19, Coronavirus disease 2019; *F*, female patient; *ID*, identification; *M*, male patient; *SARS-CoV-2*, severe acute respiratory syndrome coronavirus 2.
*Described in a previous article (Colonna C et al. Chilblain-like lesions in children following suspected COVID-19 infection. *Pediatr Dermatol*. 2020;37(3):437-440).

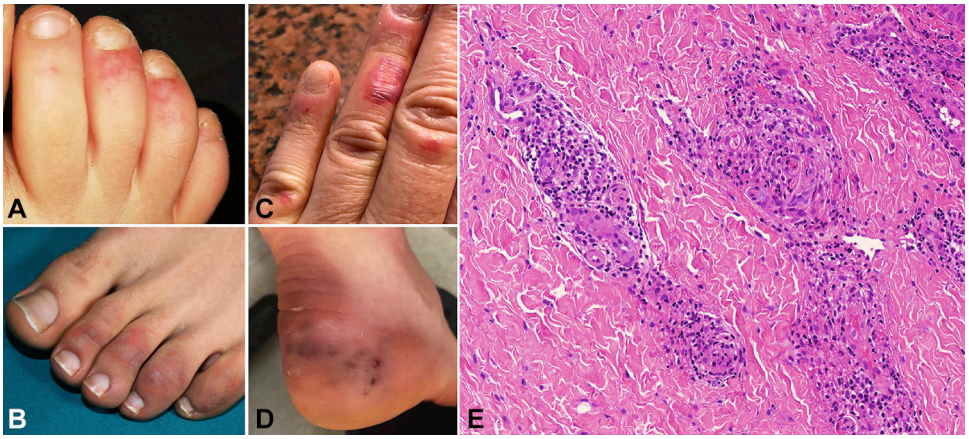

Fig 1. Chilblain-like acral lesions in 4 patients. **A,** Erythematous-violaceous noninfiltrated patches on the toes of a 10-year-old girl (patient 1). **B,** Violaceous noninfiltrated patches on the toes of a 16-year-old boy (patient 28). **C,** Violaceous slightly infiltrated plaques on the fingers of a 17-year-old girl (patient 2). **D,** Violaceous lesions on the heel of an 11-year-old girl (patient 11). **E,** Case 10. Histology revealed dense perivascular cuffs of lymphocytes and periadnexal lymphocytic infiltrates in the dermis. (Hematoxylin-eosin stain; original magnification: ×20.)

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Third-year dermatology resident anxiety in the era of COVID-19

To the Editor: The coronavirus disease 2019 (COVID-19) pandemic has quickly become a generational health crisis that has abruptly altered many aspects of life across the world. Health care professionals, such as residents across various medical specialties, are facing rapidly evolving practice and educational environments, all while coping with the emotional stressors shared by the general public from the monumental changes to society.[1,2] Understanding the sources of anxiety in our trainees is crucial as organizational leaders work to support the professionals caring for patients.

To help address and better assess some of these issues, we hosted a live webinar with dermatology program directors and chief residents across the

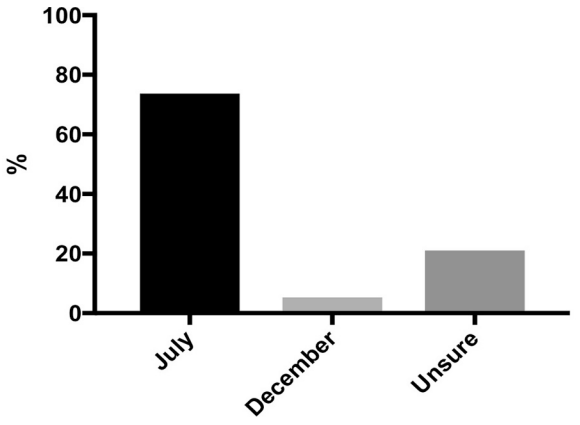

Fig 1. Anticipated date of the initial certification examination.