

LETTER

The management of the outbreak of acral skin manifestations in asymptomatic children during COVID-19 era

Dear Editor,

Coronavirus disease 2019 (COVID-19) is leading to an ever-increasing concern for public health.¹ Undisputedly, the major target of viral upload is the respiratory tract. Yet, a mounting body of evidence is being collected supporting a COVID-19-related multi-organ involvement affecting not only the lung.¹

Actually, dermatologists have to face two distinct challenges. On the one hand, the need to evaluate the amenability, or not, of managing active severe skin conditions (ie, psoriasis, atopic dermatitis, skin cancers) with therapeutic tools which were employed in pre-COVID-19 era with reasonably greater ease than presently.² On the other hand, the need to survey and attribute consistent significance to skin findings observed in COVID-19 patients.

Recently, few papers have been published reporting more or less anecdotal case series in which the involvement of the integument is observed in both preclinical (or "post hoc") and confirmed cases of COVID-19.³⁻⁵ It is indeed not uncommon for viral infections to cause skin manifestations; however, the exact prevalence, timing of onset and pattern of cutaneous involvement in COVID-19 patients are currently unknown.

Some recent reports highlighted the quite frequent finding of acral ischemic and/or ecchymotic lesions, mainly located on the toes,

in severely diseased COVID-19 patients.^{4,5} As for these cases, some role of a low inflammatory thrombogenic vasculopathy, with deposition of C5b-9 and C4d in both grossly involved and normally appearing skin, has been hypothesized.⁶

We would herein outline that skin changes which are somehow reminiscent of the above clinical pictures are now also being observed in an increasing number of fully COVID-19 asymptomatic and nasal swab negative children by both dermatologist and pediatrician Italian community.⁷ The very striking feature of such skin manifestations in childhood is that such a weird "acral rash" has never been observed before COVID-19 pandemic ever.

We report here 38 cases of children who were referred to the Unit of Dermatology at "Ospedali Riuniti" Hospital in Foggia (Italy) for the development of acral skin lesions in March 2020. Data are summarized in Table 1. According to recent literature,^{4,5} nasopharyngeal swabs were performed on all children, with negative results; so, the swabs were not performed to their parents, also because they were all asymptomatic and negative for COVID-19 triage criteria. Of note, three were also observed among siblings within 2-3 weeks. The lesions involved predominantly the feet (one or both), while hands and other distal sites (such as ears) were only occasionally affected. In

TABLE 1 Clinical and demographic data of the patients

Clinical pattern Sex	Ecchymotic		"Pernio-like"		Combined		Evolution into skin swelling and erosion				
	M	F	M	F	M	F	M	F			
Age	6	15	15	14	4	14	4	4			
	8	12	16	9	6	11	9	16			
	12	14	13		7	10	8	15			
	16	16			9		14				
	12	12			8		15				
	7				15		10				
	4				16						
	6				5						
	7										
Tot. M/F	9	5	3	2	8	3	5	3	Tot. M/F (%)	25 (65.8)	13 (34.2)
Tot. patients (%)	14 (36.8)		5 (13.2)		11 (28.9)		8 (21.1)		Tot. patients	38	
Mean age M/F	8.7	13.8	14.7	11.5	8.75	11.7	10	11.7	Mean age tot. M/F	9.7	12.5
Mean age	10.5		13.4		9.5		10.6		Mean age tot.	10.6	



FIGURE 1 Multiple ecchymotic lesions on the soles of the feet, A, in an 8-years-old male and, B, in a 12-years-old male

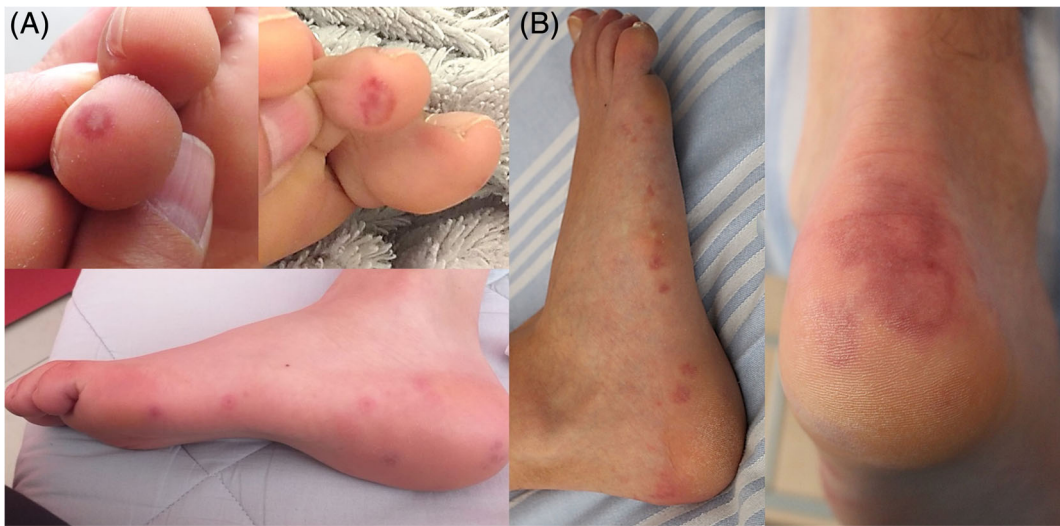


FIGURE 2 Ecchymotic lesions on the lateral margin of the feet, on heels and finger-toes, A, in a 6-years-old male and, B, in a 16-years-old male

sum, multifocal and asymmetric purpuric-ecchymotic and/or “pernio-like” lesions were the leading feature of such clinical scenario (Table 1). Ecchymotic lesions with scanty petechiae were observed on the sole, heel and/or plantar aspect of single toes (Figures 1 and 2). “Pernio-like” lesions with red-bluish erythematous patches were observed on dorsal aspect of toes, sometimes evolving into superficial skin vesiculo-bullous swelling and erosion (Figures 3 and 4).

The management of these skin lesions might include the application of a topical association of corticosteroid and antibiotic to speed up the healing process. Anyway, self-healing is also possible. Mild dyschromic sequelae are usually observed. Our patients underwent

therapy with a combined steroid and antibiotic cream with complete resolution after about 2 weeks.

Despite the negative results obtained by all the nasopharyngeal swabs, we cannot exclude the role of COVID-19 at least until completely reliable serological tests are available. Nasopharyngeal swabs might in fact lead to false-negative results, or children might have already eliminated the infection, likely due to a more active innate immune response and healthier respiratory system.^{8,9}

We highlight that clinicians must be aware of the recent outbreak of these peculiar skin manifestations and their possible link with COVID-19. Up to our knowledge, this is the first time that



FIGURE 3 "Pernio-like" and ecchymotic lesions, A, in a 14-years-old female and, B, in a 16-years-old male



FIGURE 4 A, "Pernio-like" lesions with vesicular-bulla in a 5 years-old male; "pernio-like" lesions with superficial erosions, B, in a 9 years-old-male and, C, in a 15-year-old male

ecchymotic lesions are observed in asymptomatic children during COVID-19 era. Further larger studies are required to establish their exact pathogenesis.

CONFLICT OF INTEREST


All authors have no interests to report. The article has not been previously published and is not currently submitted elsewhere.

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