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Acute postinfectious pityriasis rubra pilaris as a cutaneous manifestation in COVID-19: a case report and its dermoscopic features

Editors

Coronavirus disease 2019 (COVID-19) is an ongoing global pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). There have been many reports of COVID-19 skin manifestations in the literature; the clinical spectrum is wide and includes urticarial rash, confluent erythematous/maculopapular/morbilliform rash, papulovesicular exanthem, chilblain-like acral pattern, livedo reticularis/racemosa-like pattern, purpuric 'vasculitic' pattern.[1] According to our best knowledge, this report is a first described case of pityriasis rubra pilaris (PRP) in a COVID-19 patient.

A 7-year-old male child was admitted to our outpatient clinic presenting generalized erythematosquamous skin lesions. Cutaneous examination revealed generalized well-demarcated, large reddish-orange plaques and keratotic follicular papules with islands of uninvolved skin mainly on the face, trunk and limbs. Keratosis of the palms and soles was also present (Figs 1a, b and 2a). The body surface area involvement was approximately 80%. No other abnormalities were observed. Birth history, medical history, surgical history and family history were unremarkable. The patient's mother claimed that the disease began with a diffuse fine scale on the scalp and over time extended to the whole body. Appearance of skin lesions was preceded by a bout of infection with fever.

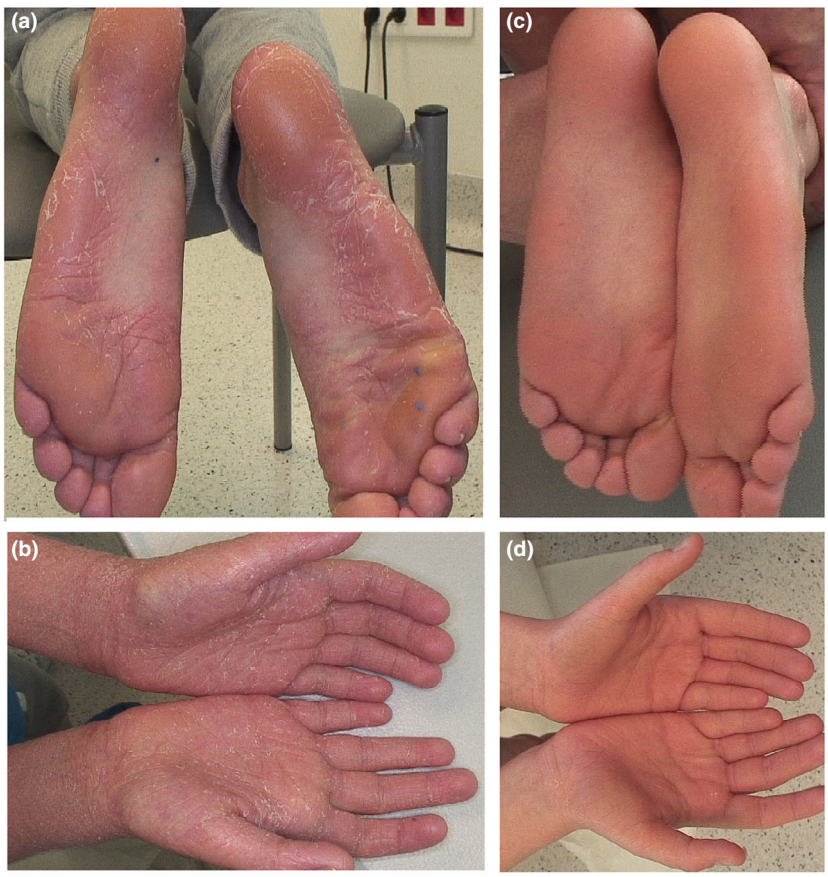

Figure 1 (a and b) Initial clinical picture with orange hyperkeratosis on the palms and soles. (c and d) Improvement after 3 months of acitretin and emollient therapy.

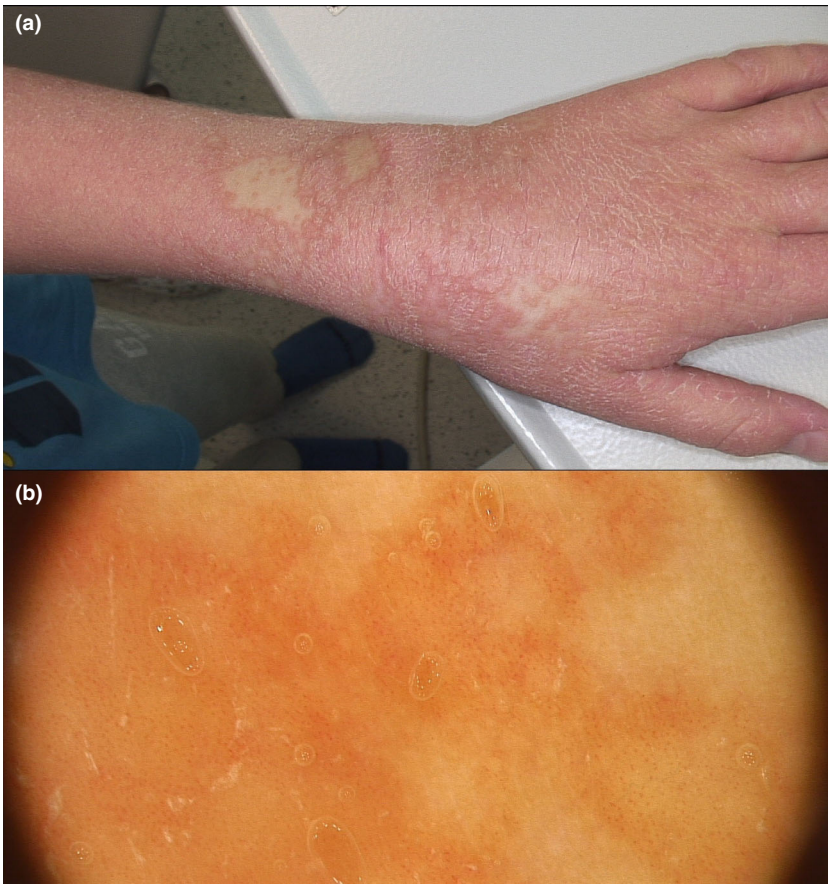

Figure 2 (a) Large reddish-orange plaques and keratotic follicular papules with islands of sparing ('nappes claires'). (b) Dermoscopy presentation: white scale, scattered dotted vessels and orange structureless areas over a reddish background (FotoFinder; magnification ×20).

Real-time polymerase chain reaction nasopharyngeal swab for SARS-CoV-2 was performed with positive result. Otherwise, all routine examination findings and laboratory parameters were within normal ranges. A 4-mm punch skin biopsy was sent for histopathological examination and demonstrated acanthosis, keratosis with parakeratotic foci between orthokeratosis, mild perivascular lymphocytic inflammation and epidermal spongiosis. Dermoscopy showed white scale, scattered dotted vessels and orange structureless areas over a reddish background (Fig. 2b). Based on clinical presentation, dermoscopy and histopathological examination, the diagnosis of acute postinfectious PRP was made. Acitretin 0.5 mg/kg/day and emollient therapy were started with good clinical improvement regarding the degrees of erythema and scaling after 3 months of treatment (Fig. 1c and d).

PRP is an uncommon chronic inflammatory skin disease of unknown aetiology, which comprises 6 subtypes segregated by age, clinical course and prognosis: type I (classical adult), type II (atypical adult), type III (classical juvenile), type IV (circumscribed juvenile), type V (atypical juvenile) and type VI (type I and HIV positive).[2] PRP affects adults and children of all ages, with two common peaks: the first one in childhood (1–10 years of age) and the second one in adulthood (50–60 years of age).[3] PRP is characterized by follicular keratotic papules and red-to-orange plaques. Furthermore, palmoplantar keratoderma, erythema with micaceous scale of the face and scalp, subungual hyperkeratosis and nail thickening can be found in patient with PRP.[2]

Classical juvenile type III PRP affects children between 5–10 years of age and represents approximately 10% of all PRP cases.[3] In 1983, Larrègue et al. published a series cases of PRP following infection in children and proposed a new subgroup acute postinfectious PRP.[4] This form is a variant of type III PRP characterized by: (I) no family history, (II) occurred after the first year of life, (III) an acute course preceded by symptoms of an infection, (IV) no clinical or laboratory abnormalities except those due to the initial infection, (V) scarlatiniform erythema followed by follicular papules with appearance of classical juvenile PRP weeks later and (VI) good prognosis but resolution may be slow, and no tendency toward recurrence.[5,6] In the literature, there are a few reports describing connections between PRP and both bacterial and viral infections. Clinical features may resemble other

superantigen-mediated diseases, such as scarlatiniform rash, staphylococcal scalded skin syndrome, toxic shock syndrome or Kawasaki disease.[5]

In conclusion, the association between COVID-19 and PRP may be coincidental, nevertheless viral infections have been proposed to be a triggering event for PRP pathogenesis. Further research is needed to confirm the correlation between SARS-CoV-2 infection and PRP.

Acknowledgement

The patients in this manuscript have given written informed consent to publication of their case details.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Patients with primary cutaneous lymphoma are at risk for severe COVID-19. Data from the Spanish Primary Cutaneous Lymphoma Registry

Dear Editor,

While some papers report an increased risk of COVID-19 and worse outcomes[1] in oncological patients, others have found no differences.[2]

We are not aware of studies assessing risk for COVID-19 and clinical outcomes of patients with Primary Cutaneous Lymphomas (PCL).

The objectives of our study were to evaluate the incidence of COVID-19 and severe outcomes in a cohort of PCL patients, compare it to the general population, and describe changes in lymphoma staging 8 weeks after COVID-19.

Registro Español de Linfomas Cutaneos (RELC) is a prospective cohort recruiting all patients with PCL referred to the 27 participating dermatology departments. In May 2020, we collected all patients with COVID-19 and described their clinical data and evolution. We defined COVID-19 cases, according to the European Centre for Disease Prevention and Control,[3] as possible, probable or confirmed. COVID-19 outcomes included asymptomatic or mild, hospitalized, intensive care unit (ICU) and deaths.

We estimated cumulative incidences, 95% Confidence Intervals (CI), and standardized incidence ratios (SIR) by age, sex and geographical area corresponding to the same period (January–November 2020) of Spanish figures published by the Spanish Ministry of Health.[4] This study was approved by the ethics committee of Hospital 12 de Octubre (CEIM 20/297).

RELC included 1542 patients [56% Mycosis fungoides/Sézary (MF/SS), 44% nonMF/SS primary cutaneous lymphomas]. 20% were in T3 and T4 stages. Sixty patients (3.9%) suffered from COVID-19, median age of 59.1 years (SD = 13.1); 50% of them are MF/SS, and 50% are nonMF/SS. Forty-two patients had a microbiologically confirmed infection (70%), seven of them being probable cases (12%) and 11 possible cases (18%). Most patients (65%) experienced mild disease, 25% required hospitalization, 5% needed ICU and 5% died. 82% of patients reported stability of their PCLs, 9% improvement and 9% worsening.

Table 1 describes age-specific cumulative incidences of COVID-19 and COVID-19 related events and compares them with the general population by means of the overall SIRs. None of the SIRs is statistically significant, but they increase with the severity of COVID-19 disease. Patients in the 60–69 years stratum show a strongly increased risk of hospitalization [SIR: 4.81 (95% CI: 2.2–9.12)] and need for intensive care [SIR: 12.41 (95% CI: 1.5–45)]. In patients surviving, the oncological disease remains stable.

There were limited data regarding PCL and COVID-19. The United States CL Consortium and the EORTC CLTF established some general recommendations for the treatment of PCLs during the COVID-19 pandemic[5,6] while some authors suggested that PCL does not increase the risk of SARS-CoV-2.[7] As far as we know, this study is the first to describe the incidence and severity of COVID-19 among PCL patients.

The strengths of our study are that it's based on a previously defined and closely followed prospective cohort, and has comparable data for the general population. Few cases remained