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CASE REPORT

The Covid-19 pandemic, deviations in nutritional status and pediatrics

Eritema pérnio-like por COVID-19 em paciente com lúpus

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Abstract

During the COVID-19 pandemic, cutaneous symptoms have been described, which may be concomitant, precede or follow the other symptoms of this viral infection. Among the most observed in pediatric patients are erythema pernio-like lesions. It is characterized by spots and plaques of erythematous to purplish coloration, located on the hands and feet, weeks after mild respiratory symptoms or without any previous symptoms. We present an 11-year-old boy with controlled systemic lupus erythematosus, using mycophenolate mofetil and hydroxychloroquine and without skin lesions for 6 months. He started with purple erythematous lesions on the feet and hands, asymptomatic until the eighth day, when he presented fever, pain in the lesions and worsened with the presence of blisters and crusts. On the ninth day, the RT-PCR for COVID-19 (SARS-CoV-2) was positive. This was the first pediatric patient with lupus who developed a picture similar to erythema pernio associated with COVID-19 infection. We cannot rule out that it was a manifestation of rheumatological disease, however the temporal relationship with COVID-19 and the duration of the lesions are factors favorable to the diagnosis of erythema pernio-like, it is also not known whether patients with lupus would be more likely to develop erythema pernio-like lesions. More similar reports may confirm this possibility.

Palavras-chave:
Infecções por Coronavírus
Lúpus Eritematoso Sistêmico
Pérnio
Criança.

Resumo

Durante a pandemia da COVID-19 têm sido descritos sintomas cutâneos que podem ser concomitantes, precederem ou sucederem os demais sintomas da infecção viral. Entre os mais observados nos pacientes pediátricos estão as lesões semelhantes ao eritema pérnio. Caracteriza-se por manchas e placas de coloração eritematosa à purpúrica, localizadas nas mãos e pés, semanas depois de sintomas leves respiratórios ou sem qualquer sintoma prévio. Apresentamos um menino de 11 anos, portador de lúpus eritematoso sistêmico, controlado, em uso de micofenolato mofetil e hidroxicloroquina e sem lesões cutâneas há 6 meses. Iniciou com lesões eritêmato-purpúricas nos pés e mãos, assintomáticas até o oitavo dia, quando apresentou febre, dor nas lesões e piora com presença de bolhas e crostas. No nono dia o RT-PCR para COVID-19 (SARS-CoV-2) foi positivo. Este foi o primeiro relato de um paciente pediátrico com lúpus que desenvolveu quadro semelhante ao eritema pérnio associado à infecção pela COVID-19. Não podemos descartar que tenha sido manifestação da doença reumatológica, no entanto, a relação temporal com a COVID-19 e a duração das lesões são fatores favoráveis ao diagnóstico de perniose-like, também não é conhecido se os pacientes com lúpus teriam maior probabilidade de desenvolver as lesões perniose-like. Mais relatos semelhantes poderão confirmar esta possibilidade.

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INTRODUCTION

Chinese studies showed a low frequency of skin manifestations associated with COVID-19. In a study of 1,099 confirmed patients in Wuhan, 0.2% had skin symptoms[1]. With the participation of dermatologists in the care of patients during the pandemic, reports of skin involvement in COVID-19 cases increased[2]. Different manifestations have been described in infected patients, urticarial lesions, morbilliform, vesicular, petechial, livedo reticularis, ischemic acral lesions, and lesions similar to pernio erythema[3]. Pernio erythema is a skin inflammatory reaction resulting from the vascular response poorly adapted to the cold. It is more common in adult women. It can be primary (idiopathic or related to cold) or secondary associated with other diseases such as lupus erythematosus, Behçet's disease, antiphospholipid syndrome, rheumatoid arthritis, among others[4].

In Spain, some series of pediatric cases with lesions similar to erythema pernio were reported during the COVID-19 pandemic. The lesions are little symptomatic, erythematous to purpuric and appear on the hands and feet weeks after mild respiratory symptoms, or without any previous symptoms[5,6]. Histology showed signs of vasculitis[7] and it is speculated that it is triggered by the virus, but the etiology and long-term evolution of this acne remains to be clarified.

Considering that cases of COVID-19 are less frequent in the pediatric population, with the majority of children being asymptomatic or oligosymptomatic[8], the identification of cutaneous lesions associated with infection may draw attention to better monitoring of these cases and even the search for contact that they may have transmitted the disease. It is also worth emphasizing the importance of these injuries due to the descriptions of multisystemic inflammatory syndrome that seems to be related to COVID-19[9]. This article aims to describe a patient with lesions similar to erythema pernio and COVID-19, in the previous context of systemic lupus erythematosus (SLE) being monitored and well controlled.

CASE REPORT

Male patient, 11 years old, with SLE since 2 years of age, with lesions on the face and upper limbs, diagnosed by skin biopsy associated with changes to autoantibodies (anti-DNA and anti-SM). In use of mycophenolate mofetil and hydroxychloroquine, with the symptoms of Lupus controlled and presenting only residual skin lesions for 6 months. Eight days ago, he reported erythematous and erythematous-purpuric lesions located in the lower limbs, mainly on the feet (figure 1) and in the pre-tibial region.



Figure 1. Erythematous-purpuric lesion on the side of the right foot.

The lesions were diagnosed as a possible recurrence of Lupus until, on the eighth day of evolution, the patient presented feverish peaks of 38.8 °C to 39 °C, without other symptoms. The fever lasted for three days, had remission for one day and relapsed for another day until it subsided. During the fever, there was no infectious focus to justify the fever. On the ninth day, the lesions became painful and intensified, mainly in the distal region of the toes (figure 2), also evolving with blisters and erosion on the dorsal face of the toes. After evaluation by a dermatologist, via telemedicine, RT-PCR for COVID -19 (SARS-Cov2) was requested, which was positive.



Figure 2. Erythematous and purpuric lesions on the distal face of the pododactyls.

Since there was no clinical severity, treatment for Lupus was maintained during the course of the disease. The lesions were treated at the beginning, when SLE recurrence was still suspected, with topical tacrolimus and then with the positive COVID-19 RT-PCR, with moisturizing cream. The skin lesions lasted 3 weeks and evolved with residual hypochromic spots.

The patient had been in home isolation for 45 days before the onset of symptoms. Mother and father were RT-PCR negative for COVID–19, and the maternal grandmother, who has close contact with the family, presented the same positive test. The patient had not presented similar lesions previously.

COMMENTS

Pernio erythema is uncommon in healthy children, and it is usually triggered by low temperatures. The lesions similar to erythema pernio seen during the pandemic have been described even with mild temperatures and in patients without previous episodes. A series of 25 children with an average age of 14 years was described in Spain, where the skin lesions were asymptomatic or there was pain and itching that disappeared in two weeks, without the need for treatment[5].

A cross-sectional study carried out in Spain evaluated 375 patients for skin changes during the 2 weeks of the peak diagnosis of COVID-19. Leggy-like lesions occurred in 71 patients (19%), with a mean age of 32 years. The authors concluded that the lesions could be attributed to the virus because the temperature was mild at the time, and there was an increase in the number of cases that coincided with the peak incidence of COVID-19. Among the patients, 41% confirmed SARS-CoV-2 infection by laboratory tests, and this, according to the authors, could be explained by the late onset of the perniosis-like lesions, at a stage when the agent would no longer be detected by the polymerase chain examination[10]. In another series of six patients with acral eruptions similar to erythema pernio, those aged 15 to 44 years were asymptomatic or had mild symptoms of COVID-19[11]. As seen in the present report, in which the lesions were concomitant with the detection of the virus and the symptoms were from COVID-19, they were mild, the temperature was also hot during the period in which the lesion was present and there was no description of previous perniosis.

When reviewing the authors who assessed a larger number of patients in the age group of children and adolescents in Lombardy, Italy, lesions similar to erythema pernio were reported in 14 patients, including 11 children, with a mean age of 14 years, mostly females. The authors described violaceous erythematous macules and papules, some with blisters, and digital sweating. Mild itching has been described in 3 cases[6]. In northern Italy, telemedicine consultations identified 63 cases of eruptions similar to acral erythema pernio, with an average age of 14 years, with no sex predilection. The feet and toes were more affected than the hands and fingers. The lesions were erythematous and edematous with blisters in half of the patients, 25% of which were asymptomatic and the others complained of mild and itchy pain. The manifestations of COVID-19 in these patients were mild and 5% had fever[12]. In our patient, the lesions became painful after the 8th day and evolved with vesicles and blisters.

In Madrid, Spain, a series of 22 patients (13 male and 9 female) aged 6 to 17 years, presented violet erythematous acral lesions or purplish macules on the toes, sides of the feet and heels, periungueal area, and three cases with lesions located on the fingers. Some patients have complained of itching or mild pain. Ten patients had mild respiratory or gastrointestinal symptoms associated 14 days before the skin lesions. The lesions disappeared in 3 to 5 weeks. One of the 19 patients tested positive for COVID-19, but 59% of the cases had a history of contact with a symptomatic family member for COVID-19[3]. The authors concluded that lesions similar to erythema pernio are a benign finding and that the pathophysiology remains unknown.

Collona et al.[7] described 4 children in Italy with erythematous to purpuric lesions on the palms and plants, the lesions occurred a few days after mild respiratory symptoms. COVID-19 infection was not identified in any patient, but there were symptoms of COVID-19 in family members, and other viral causes such as parvovirus were ruled out, which increases the likelihood that the lesions were triggered by the coronavirus. In one case, histological evaluation was possible and there were signs of vasculitis with dense perivascular and periadnexal lymphocytic infiltrate, and there was an increase in D dimers. In view of the findings, the author suggests that in children with mild respiratory symptoms associated with acral lesions, it is important to evaluate coagulation factors. In Madrid, four children had erythema multiform; three reported itching of the extremities and mild pain, with lesions similar to erythema pernio. The resolution occurred without complications in one to three weeks[13].

We did not find in the literature patients with lupus who presented lesions similar to perniosis concurrent to COVID-19 infection, we believe that the virus has a causal relationship with the clinical manifestation, since the patient was well controlled and the lesions had the same duration described in reports of perniosis-like lesions associated with COVID-19; however, we cannot rule out that it was a manifestation of a rheumatological disease. It is not known whether patients with lupus would be more likely to develop perniosis-like lesions, more similar reports may confirm this possibility.

CONCLUSION

The perniosis-like rash is most commonly described in children and adolescents with COVID-19, and it has been associated with mild disease and without other COVID-19 symptoms. It is important that pediatricians pay attention to this clinical manifestation, in order to identify SARS-Cov2 infection and monitor the progress of these children, thus enabling the early recognition of possible complications.

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