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LETTERS TO THE EDITOR

Acute postinfectious type III pityriasis rubra pilaris as a cutaneous manifestation in COVID-19: Decoding a possible trigger!!

To the Editor,

The clinical spectrum of COVID-19-induced skin manifestations in the literature includes urticarial rash, maculopapular rash, morbilliform rash, papulovesicular exanthem, chilblain-like acral pattern, livedo reticularis/racemosa-like pattern, and purpuric "vasculitic" pattern.[1] Pityriasis rubra pilaris (PRP) is a rare, idiopathic inflammatory papulosquamous disorder. Infection, autoimmunity, drugs, and malignancies can be triggers for PRP.[2] Herein, we report a pediatric case of pityriasis rubra pilaris post-COVID-19 infection.

An 8-year-old girl presented to the dermatology outpatient department with history of erythematous, scaly, mildly pruritic generalized rash all over the body for past 20 days. Appearance of skin lesions was preceded by a bout of infection with fever. 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. Cutaneous examination showed numerous lesions, each consisting of erythematous perifollicular papule with a central keratotic acuminate plug, on the chest, back, neck, shoulders, and abdomen. There were orange-to-salmon-colored macules coalescing into patches and plaques with characteristic follicular hyperkeratotic papules. Involved skin was sharply demarcated from uninvolved skin producing the so-called "islands of sparing" (Figure 1A&B). Scalp showed diffuse coarse scaling with hyperkeratotic plaques. Palms and soles were also hyperkeratotic. Dermoscopy revealed whitish keratotic follicular plugs with central red dots and surrounded yellowish-brown structure-less areas and scaling on confluent plaques (Figure 2A). On histopathological examination, there was presence of sparse superficial perivascular lymphohistiocytic infiltrate with slight irregular psoriasiform hyperplasia and mild focal spongiosis of the epidermis. Papillary dermis showed edema and dilated blood vessels. Stratum corneum showed parakeratosis and orthokeratosis without neutrophils (Figure 2B). On the basis of strong clinical suspicion and histopathological findings, the patient was diagnosed with post-COVID-19 infection type III pityriasis rubra pilaris. Injection methotrexate 7.5 mg subcutaneous weekly and acitretin 10 mg daily were prescribed. During the 6 months' follow-up period, the patient's condition improved markedly.

Classical juvenile type III PRP is most commonly encountered form affecting children between 5–10 years of age.[3] Larrègue et al.[4] reported cases of PRP following infection in children and termed it as acute postinfectious PRP, which is characterized by absence of family history and an acute course preceded by symptoms of an infection followed by appearance of scarlatiniform erythema and follicular papules with appearance of classical juvenile PRP without any other clinical or laboratory abnormalities. In the literature, there are few reports proposing viral infectious agents such as herpes simplex infection and varicella zoster as triggers of pityriasis rubra pilaris.[4]

FIGURE 1 (A,B) Orange to salmon colored macules coalescing into patches and plaques with characteristic follicular hyperkeratotic papules with a central keratotic acuminate plug and "islands of sparing on chest, abdomen, and back"

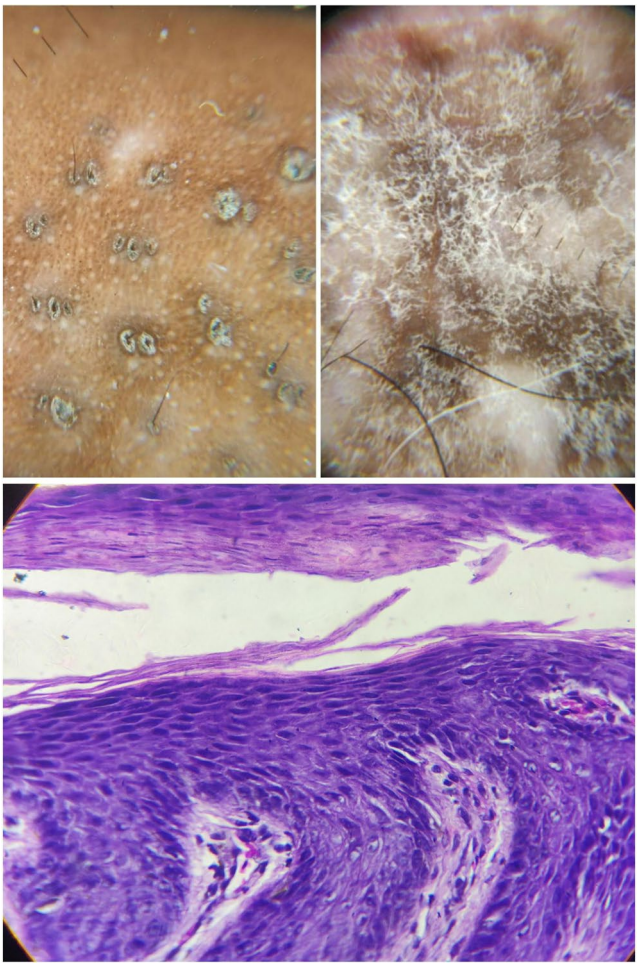

FIGURE 2 (A) Dermoscopic image showing whitish keratotic follicular plugs surrounded by yellowish-red areas and scaling in confluent plaques; (B) Skin biopsy showed sparse superficial perivascular lymphohistiocytic infiltrate, mild focal spongiosis, zones of parakeratosis, and orthokeratosis in stratum corneum and psoriasiform changes

The latency period from COVID-19 infection to the appearance of skin lesions in our case was approximately 3 weeks; however, the patient seek medical attention in advanced stage with fully evolved PRP. To the best of our knowledge, only two cases of PRP have been reported following COVID-19 infection.[5,6] Presence of temporal association and thorough evaluation has led us to propose that it is a potential trigger for the disease.

Thus, appearance of skin lesions in patients with a preceding COVID-19 infection should be evaluated on time because these may be a rare late clinical manifestation of COVID-19 disease, especially in children who do not present with typical respiratory disease.

In conclusion, the association between COVID-19 and PRP may not be just coincidental because viral agents have been proposed to be a trigger in PRP pathogenesis. Further research is needed to confirm the correlation between SARS-CoV-2 infection and PRP.

ETHICAL APPROVAL

Due ethical approval was taken from institutional ethics committee. The patient gave written informed consent to be a part of this study.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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