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CONCISE COMMUNICATION

Follow-up of skin lesions during the evolution of COVID-19: a case report

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Abstract

The disease caused by the new coronavirus (COVID-19) has many systemic manifestations affecting the upper airways, lungs, gastrointestinal tract and inducing hematological repercussions. With the evolution of the pandemic, skin lesions were observed. However, there is little information about the evolution of the lesions at this moment. The authors report a case of a patient who had more than one exposure to the coronavirus during the evolution of the disease and manifested different types of edematous lesions. The lesions started in the prodromal period and changed their presentation and localization during the evolution of COVID-19. The lesions regressed quickly with the use of corticoid cream and antihistamine. Viral skin lesions are frequent causes of exanthema. However, viral etiology is not always investigated in acute urticarial and atypical erythematous-edematous conditions. The immunological basis of acute urticaria has points in common with COVID-19, justifying the appearance of lesions. Investigation of viral etiology should always be remembered in acute urticarial and edematous conditions.

Keywords COVID-19 · Sars-cov-2 · Skin · Urticaria · Virus · Emergent infections

Introduction

The coronavirus disease (COVID-19) pandemic outbreak started in china with patients who had pneumonia of unknown etiology [1]. Other symptoms presented were dry cough, sore throat, and diarrhea. [1] The etiologic agent was identified as an RNA virus belonging to the *Coronaviridae* family, being then named as Sars-cov-2.

As the epidemic progressed, other manifestations were observed. Recalcati et al. [3] studied 88 patients admitted in Lecco Hospital, Lombardy, Italy. Of these, 18 patients had skin reactions, and in eight the lesions occurred before hospitalization. These reactions were divided by the authors into three forms: erythematous rash, widespread urticaria, and chickenpox-like vesicles [3]. In addition to this study, a case was reported by Joob et al. [4] in Thailand. In this case, the patient presented a rash and a low platelet count and was initially misdiagnosed as dengue. He evolved with respiratory symptoms, being referred to a tertiary hospital and tested positive for sars-cov2 [4].

Despite the existence of skin lesions descriptions, there is little information about their evolutions and pictures about them. Therefore, we report one case that has been following since the prodromal period until the resolution of symptoms.

Case report

Female patient, 55 years old, intensive care physician, resident of the city of Recife—PE. She has hypothyroidism and overweight comorbidities. The patient had contact with an intensive care unit (ICU) patient previously tested positive for Sars-cov-2 on 03/22/2020. Five days later, few painful erythematous-edematous plaques appeared on the flexor face of forearms and leg extensors (picture 1). Some lesions evolved into bruises. She was treated with betamethasone cream 0.1% once a day with lesion resolution in 3 days.

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The patient had a second exposure to another ICU patient with COVID-19 on 04/05/2020. On 06/04/20, she had a fever, epistaxis, headache, myalgia, vomiting, and diarrhea. In the skin, she presented pruritic urticarial lesions on the shoulders and inguinal region (Fig. 1). On the palms of his hands, there was erythema and intense itching (Fig. 2).

She was medicated with Bilastine 20 mg one tablet a day for 15 days. Within 48 h, there were no more wheals and erythematous-edematous plaques appeared without itching in the antecubital and popliteal fossae (Fig. 3). The lesions regressed after the use of betamethasone ointment 0.1% cream once a day for 2 days. On 12/04/2020, the patient presented anosmia, nasal obstruction, asthenia, and mild dyspnea. However, no return of skin lesions. The laboratory showed a positive polymerase chain reaction for |Sars-cov-2 and results within normality; lactate dehydrogenase: 321 u/l, C-reactive protein (CPR): 0.7 mg/L, fibrinogen: 304 mg/dL, International Normalized Ratio: 1.00, troponin: 0.03 ng/mL, D-dimer: 400 µg/L, total leukocytes: 6890/mm, neutrophils: 4078, eosinophils: 48, lymphocytes: 1897, platelets: 234.000/mm^3, alanine aminotransferase: 42 pg/mL, aspartate aminotransferase: 31 U/L, total bilirubin: 0.5 mg/dL, serum creatinine: 0,73 mg/dL and. She used only oral zinc and was completely recovered after 10 days of the onset of systemic symptoms.

Discussion

The pandemic situation caused by COVID-19 is still recent and at the moment there is little information about the cutaneous conditions associated with the virus. The report Joob et al. [4] serves as a warning to health professionals for the possibility of the presence of a rash as the only initial sign of infection with the new Coronavirus.

Viral etiology is not often remembered in the investigation of acute urticaria as it occurs for rash. However, infections by several virus families, such as *Parvoviridae* and *Caliciviridae*, in addition to hepatitis A, B, and C viruses [9] are described as causing acute and /or chronic urticaria in children and adults who are not currently using drug therapy. Acute urticaria has an increase in IL-6, PCR, and D-dimer, [10, 11] inflammatory

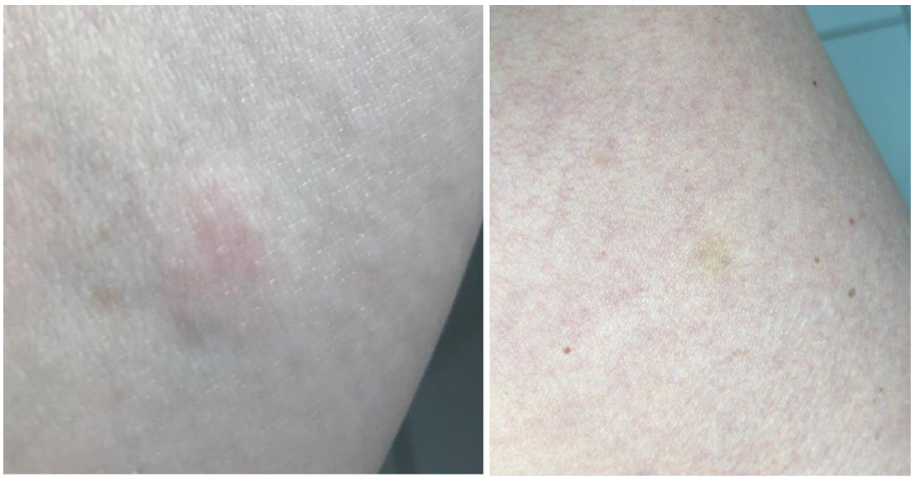

Fig. 1 Erythematous-edematous plaque on the flexor face of the forearm and bruises lesion on the inner thighs

Fig. 2 Exuberant urticarial lesions located on the shoulders. Light erythema and edema on the palms

Fig. 3 Erythematous-edematous plaques in the popliteal fossae and antecubital fossa

factors that are greatly increased during COVID-19 [12]. The IL-6 is the possible immunological link between them. There are reports of the onset of urticaria in the second infection of dengue [13] and Epstein-Barr reactivation [14]. It is not known if new exposures to the coronavirus increased the immune stimulus, exacerbating the lesions.

It is necessary to use serological tests more frequently to assess viral etiology in patients with acute urticarial or edematous lesions. The initial frustrating lesions, the excellent response to the antihistamine/cortisone cream, and the rapid change to localized lesions practically asymptomatic would prevent the patient from being tested for COVID-19 if she did not have systemic symptoms. Patients with edematous skin lesions or even the classic ones suggestive of viral etiology should be evaluated for COVID-19 and another virosis. Knowing cutaneous manifestations caused by COVID-19 can be an essential step for the early diagnosis of this disease helping to decrease its spread.

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Compliance with ethical standards

Conflict of interest No conflict of interest disclosures.

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