

## Case report

**Isolated cutaneous manifestation of COVID-19 managed by telemedicine***Isolated cutaneous manifestation of COVID-19 managed by telemedicine*

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**ABSTRACT:** *Objectives:* This paper is a case report of a COVID-19 patient with a confirmed diagnosis of COVID-19 who had a medical evaluation by Telemedicine (TM). She presented with an isolated cutaneous manifestation and was examined by a remote general practitioner, having diagnosis and treatment guided. The correct evaluation of COVID-19 cutaneous manifestation is a challenge, and the feasibility of TM diagnosis is still uncertain. We aim to demonstrate the effectiveness of teleconsultation in a dermatological manifestation during a pandemic. *Material and Methods:* Retrospective data compilation from patient's medical record and the patient signed the consent form. **Results:** The initial clinical presentation was a diffuse pruritic macules in the abdomen, which motivated the patient to seek face-to-face care in the emergency department on the first day of symptoms. The initial hypothesis was an unspecified allergic reaction. Due to the context of the pandemic, blood tests and RT-PCR (nasopharyngeal swab) were performed for COVID-19. The patient was discharged medicated with an anti allergy and instructed to check the results of the test within 24 hours and have a medical reassessment if necessary. She was re-evaluated by TM the following day, the diagnosis of acute infection by COVID-19 was confirmed (swab positive), there was no manifestation of other symptoms and it was possible to accurately re-evaluate the skin lesions remotely. The patient had a diffuse morbilliform rash with local angioedema. The patient received specific orientations according to institutional guidelines and maintenance of dermatological symptomatic treatment. After 3 weeks, in a new reassessment by TM, there was confirmation of the resolution of the skin condition and absence of other symptoms during this period. *Conclusion:* The medical evaluation by TM allowed the interpretation of the elementary skin lesion, decision making and adequate guidance. The isolated cutaneous manifestation can be a manifestation of COVID-19 and it is feasible to be diagnosed by teleconsultation, reinforcing the need to expand the MT program for the initial evaluation of acute patients.

**Keywords:** Telemedicine; COVID-19; Pandemics; Urticaria; Angioedema.

**RESUMO:** *Objetivos:* Este artigo é um relato de caso de uma paciente com diagnóstico confirmado de COVID-19 que teve avaliação médica realizada por telemedicina. Esta paciente apresentou manifestação cutânea isolada e foi avaliada por clínico geral remotamente, com diagnóstico e tratamento orientados. A avaliação correta da manifestação cutânea da COVID-19 é um desafio, e a viabilidade do diagnóstico por telemedicina ainda é incerta. Nosso objetivo é demonstrar a eficácia da teleconsulta em uma manifestação dermatológica durante a pandemia. *Material e Métodos:* Compilação retrospectiva de dados do prontuário da paciente e assinatura do termo de consentimento livre e esclarecido para o relato. Resultados: A apresentação clínica inicial foi de máculas pruriginosas difusas pelo abdome, que motivou a paciente a procurar atendimento presencial em pronto-socorro no primeiro dia de sintomas. A hipótese inicial foi de reação alérgica não especificada. Devido ao contexto da pandemia foram realizados exames de sangue e RT-PCR (swab nasofaríngeo) para COVID-19. A paciente recebeu alta medicada com antialérgico e com orientação para ser checar resultado dos exames em 24h e ter reavaliação médica se necessário. Ela foi reavaliada por telemedicina no dia seguinte, houve confirmação do diagnóstico de infecção aguda por COVID-19 (swab positivo), não houve manifestação de outros sintomas e foi possível reavaliar com precisão as lesões cutâneas remotamente. A lesão examinada por vídeo era compatível com rash morbiliforme difuso com angioedema local. A paciente recebeu orientações específicas conforme diretriz institucional e manutenção do tratamento sintomático dermatológico. Após 3 semanas, em nova reavaliação por telemedicina, houve confirmação da resolução do quadro cutâneo e ausência de outros sintomas neste período. *Conclusão:* A avaliação médica por telemedicina permitiu a interpretação da lesão cutânea elementar, tomada de decisão e orientação adequada. A manifestação cutânea isolada pode ser uma manifestação da COVID-19 e é factível de ser diagnosticada por teleconsulta, reforçando a necessidade de expansão do programa de telemedicina para avaliação inicial de pacientes agudos.

**Palavras-chave:** Telemedicina; COVID-19; Pandemia; Urticária; Angioedema.

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## INTRODUCTION

COVID-19 infection was initially described in December 2019 in the city of Wuhan, China. There was a rapid spread around the world and the first confirmed case in Brazil was in February 2020. Data from Johns Hopkins University of June 2020 showed more than 6 million confirmed COVID-19 cases in the world and Brazil reached the second position in the absolute number of cases, with more than 600,000 individuals affected<sup>1</sup>.

Due to COVID-19, telemedicine has been widely disseminated and has proved to be a great ally in the treatment and support of milder cases and the maintenance of medical monitoring of patients with chronic diseases<sup>2-4</sup>. In a pandemic context, where health systems are overloaded, telemedicine stands out as a safe and useful tool for restructuring the system and guaranteeing medical support to the patient<sup>2,3</sup>.

Several studies serve as a basis to support the reliability and safety of telemedicine in the context of evaluation of dermatological lesions<sup>4-7</sup>. Some studies show a similar rate of diagnostic accuracy between teledermatology and face-to-face consultations which reinforces the plausibility of using remote consultations to conduct dermatological comorbidities<sup>7-12</sup>.

Usually, COVID-19 infection manifests with acute respiratory symptoms like cough, dyspnea, chest pain, coryza and odynophagia with or without systemic symptoms like fever, fatigue and prostration<sup>13</sup>. COVID-19 cutaneous manifestations are less common (4.9% in general population) and their role in the diagnosis and relation to the clinical course have been poorly described<sup>13,14</sup>. Skin conditions like morbilliform rash, reticular livedo, urticarial, vesicular and acral lesions have already been observed and these may be associated to the prodrome of the classic COVID-19 symptoms, possible markers of poor prognosis, or just isolated manifestation<sup>15</sup>.

This manuscript is a case report of a patient who spontaneously sought telemedicine evaluation during the pandemic for acute urticarial rash without any other relevant symptoms. The medical history, the skin manifestation, the subsequent diagnostic confirmation of COVID-19, treatment and follow-up are presented.

## MATERIALS AND METHODS

There was a retrospective data compilation from the patient's medical record and subsequent exposure of the main findings. Patient signed the consent form.

The present study complies with all recommended ethical guidelines for research involving human subjects and was approved by the *Hospital Israelita Albert Einstein* Ethics and Research Committee (ID: 37250720.5.0000.0071).

## RESULTS

A 33-year-old female patient from São Paulo, Brazil, sought medical evaluation by telemedicine for reddish and itchy skin lesions throughout the abdomen. On the first day of the symptoms, she was evaluated at the emergency department due to a perception of diffuse cutaneous edema and pruritus. When asked actively, she referred to a resolved mild uncomfortable sensation in the oropharynx and mild headache a few days before. There were no reports of any other complaints, the vital signs were normal and the physical examination did not find angioedema or cutaneous hyperemia. The initial diagnostic hypothesis was an unspecified allergic reaction, but pandemic implied blood sample and nasopharyngeal swab to perform PCR for COVID-19. After normal blood tests, she was discharged on promethazine and guidance for checking PCR in the next 24 hours. She had partial recovery of skin edema sensation, itching resolved and remained free of other symptoms. After one day she checked the exam and confirmed positive for ongoing infection by COVID-19 motivating telemedicine evaluation of Hospital Israelita Albert Einstein for guidance. The remote assessment confirmed that the patient was in good general condition during treatment, with a comfortable breathing pattern at rest, in addition to normal speech and behavior and no signs of mental confusion. Skin lesions had arisen, there was diffuse morbilliform rash with local angioedema sparse throughout the abdomen (Figure 1). The patient did not present fever, cough, coryza, dyspnea, chest pain, diarrhea or vomiting during the entire course of the disease. She had no comorbidities, allergies or use of medications prior to the cutaneous manifestation. Thus, the patient was instructed by our service to stay at home isolation for 14 days from the onset of symptoms, performing infectious surveillance. She was also instructed to seek emergency care again in case of alarm signs and symptoms such as fever, dyspnea, severe prostration, chest pain and worsening of urticarial lesions. Antiallergic medication was continued, and patient oriented to behavioral measures and to observe evolution. A new remote reassessment was made to the patient about 3 weeks later and she reported complete resolution of the cutaneous manifestations and the absence of new symptoms.



**Figure 1.** Skin lesions from a COVID-19 patient

## DISCUSSION

There is evidence of the use of telemedicine for the diagnosis of dermatological comorbidities since the second half of the twentieth century, with numerous publications emerging from the late 90s to the present day<sup>16,17</sup>. After COVID-19 pandemic and the consequent quarantine institution, which is the most effective measure to prevent the spread of the disease, telemedicine has been establishing itself as a safe and effective measure to promote diagnosis and monitoring of diseases<sup>2,3</sup>.

Multiple studies have shown that remote dermatological assessment has a high correlation with face-to-face dermatological assessment, around 70 to 90%<sup>12,18-20</sup>. Studies that showed biopsy comparisons of skin neoplasms evaluated by teledermatology or conventional face-to-face care showed an even greater correlation, around 80 to 90%<sup>21-24</sup>.

Urticarial lesions have been described as one of the skin manifestations related to COVID-19 infection<sup>13,14,25</sup>. Previous cases report showed that apparent urticarial lesions appear early in relation to the most common symptoms of COVID-19 infection. A French case report describes a 27-year-old woman who developed urticaria along with odynophagia and diffuse arthralgia before the onset of fever and chills<sup>25</sup>. The patient in our case did not present fever or chills at any time during her clinical evolution and had a mild course on odynophagia, as stated in this French case report, and also presented as an early manifestation of COVID-19 infection.

It is worth emphasizing that the urticarial lesions associated with COVID-19, according to the literature, tend to be unrelated to the use of medications and respond well clinically to the use of antihistamines<sup>13,14</sup>. A Spanish case report cited a generalized urticarial rash in a 32-year-old woman, unrelated to the use of previous medications and a good response to antihistamine therapy<sup>26</sup>. This case report corroborates what was described by the Spanish group, since the patient had not previously used any medication and there was regression of the lesions and edema with the use of promethazine.

There is no evidence in the literature of any kind of prognostic correlation between the appearance of urticarial lesions and the clinical course of COVID-19 infection. The patient in our case presented a mild condition with a favorable outcome.

In the literature, other skin manifestations have also

been associated with infection by COVID-19. Morbilliform rash, which is also present in other viral infections such as measles, roseola and infectious erythema was one of these manifestations<sup>27</sup>. An Italian cohort of 18 patients with cutaneous manifestations in a context of COVID-19 infection, about 14 patients (77.8%) had a morbilliform/erythematous rash<sup>15</sup>.

Varicella-like vesicular eruptions related to COVID-19 infection have also been reported in the literature<sup>28,29</sup>. An Italian study of 22 patients with diffuse vesiculo papular lesions showed an average latency time of 3 days between the onset of the lesions and the development of systemic symptoms. It also showed that the average duration of cutaneous symptoms was 8 days and that there was no relationship with the severity of the disease. In this study, half of the cases showed a dermatitis with apoptotic keratinocytes in histopathology, which is usually present in other viral rashes<sup>29</sup>.

Some researchers have shown the appearance of red-purple acral lesions during the clinical course of COVID-19, which has been called "COVID toes"<sup>13,14,30,31</sup>. These lesions usually affect younger and asymptomatic individuals or those with mild COVID-19 infection, have spontaneous resolution in 2 to 4 weeks and generally patients have negative nasopharyngeal swab PCR<sup>30</sup>.

American studies have reported livedo reticular skin rashes which are probably secondary to COVID-19-induced thrombotic vasculopathy. This systemic entity is usually related to a worse prognosis in the course of the COVID-19 infection, which reinforces the importance of early detection of this dermatological manifestation<sup>31,32</sup>. Several different cutaneous manifestations related to COVID-19 infection have been reported. Some of these events have prognostic relationships in disease and may be early markers of infection. The patient in the case presented as predominantly diffuse urticarial lesions, with good response to histamine therapy and without other classic manifestations of COVID-19 infection such as fever and cough.

## CONCLUSION

COVID-19 infection can present with isolated cutaneous manifestation, usually in the urticaria form and good response to antihistaminic. Telemedicine evaluation may be sufficient for diagnosis, guidance and treatment.

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