

## Brief Report

# Don't forget about syphilis: sexually transmitted diseases during COVID-19 pandemic

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## Abstract

A great heterogeneity of skin manifestations has been increasingly associated with SARS-CoV2 infection, and especially exanthematous eruptions are considered among early presenting signs in symptomatic patients. In this report, a 58-year-old patient presented with fever, generalized rash and systemic symptoms as urgent consultation to the Dermatology Clinic of Cagliari amidst the Italian outbreak in late March 2020. After a negative nasopharyngeal swab for SARS-CoV-2, secondary syphilis was confirmed by serological tests and skin biopsy, underlining that, even during a global pandemic, other common and important diseases should not be overlooked. The case also suggests thought on the ineffectiveness of distancing and social containment measures when dealing with sexually transmitted diseases.

## Introduction

On 11<sup>th</sup> March 2020, the World Health Organization (WHO) declared coronavirus 2019 disease (COVID-19) a pandemic.<sup>1</sup> In addition to the most common clinical features of COVID-19, which include fever, myalgia, cough, shortness of breath, ageusia, anosmia and conjunctival congestion,<sup>2</sup> skin symptoms can occur in up to 20.4% of patients.<sup>3</sup>

A challenging aspect of such skin eruptions associated with COVID-19 is the great heterogeneity, that challenges a broad spectrum of differential diagnoses.<sup>4</sup> As the dermatologic signs may precede the respiratory symptoms or manifest themselves in the absence of any pulmonary manifestations, it is important to consider COVID-19 infection in case of any exanthematous eruptions to minimize the risk of spreading by pauci-symptomatic individuals in an endemic area. On the contrary, fear should not deter us from recognizing common disorders.

## Case Report

In late March 2020, amidst the COVID-19 outbreak, a 58-year-old Caucasian man affected by insulin-treated type 2 diabetes referred to the Dermatology Clinic under the suspicion of SARS-CoV-2 infection for a generalized, mildly pruritic exanthematous rash associated with systemic symptoms of 2-week duration. He had been treated by the general practitioner with paracetamol and systemic steroids with some improvement, followed by relapse of symptoms and worsening of the skin eruption. He denied recent travels to the high-prevalence areas for SARS-CoV-2 infection.

On physical examination, the patient presented with a widespread erythematous morbilliform rash, slightly papular and scaly at closer view on the trunk and radix of the limbs (Figures 1 and 2), more erythematous edematous on the face, with bilateral conjunctival erythema (Figure 2), associated with fever (37.9°C), cough, rhinitis, pharyngodynia, occipital headache, diffuse lymphadenopathy and symmetrical migratory arthritis. Isolated papules were present on the soles while palmar regions were spared. After inquiring the patient, he referred also a genital rash, which spontaneously resolved, two months earlier.

Laboratory exams, including full blood count, coagulation tests, hepatic and renal function, HIV test were normal, except for a mild increase of ERS and C-reactive protein. Serum protein electrophoresis showed an increased gamma peak. Nasopharyngeal swab for SARS-CoV-2 was negative. The ophthalmologic consultation diagnosed a pan-uveitis.

Histopathology of a skin biopsy showed a mild interface dermatitis, with superficial and deep dermal perivascular and periadnexal inflammatory infiltrate, whose multinucleated histiocytes formed several noncaseating granulomas in a background of lymphocytic infiltrate, rich in plasma cells (Figure 3). A positive *Treponema pallidum* hemagglutination (TPHA) test (>1:5120) as well as a rapid plasma reagin test (RPR 1: 64) confirmed the diagnosis of secondary syphilis. The patient was treated with penicillin G benzathine 2,400,000 UI intramuscularly weekly for 3 weeks with rapid improvement of systemic symptoms and complete resolution of the skin rash.

### Significance for public health

*Even during a pandemic, despite community containment and social distancing, sexually transmitted diseases persist, and syphilis should never be forgotten. As highlighted by present report, the potential impact on public health is substantial, considering that secondary syphilis is a highly contagious generalized bacteremic phase of the disease. Resurgence of syphilis is an ongoing unsolved problem for at least a decade, which takes a back seat to the current dramatic COVID-19 spreading. However, limitation to outpatients' visits and hospital screening services due to the lockdown measures are likely to favor syphilis circulation, delay diagnosis and adequate treatment. Dermatologists are in the leading position to support the medical community in such difficult situations, keeping focused on good clinical practice to promptly recognize subtle but potentially severe diseases like syphilis.*

The patient was tested negative for additional STD and at the trimestral follow up, RPR antibody titer had decreased (1:8), while TPHA test remained stable (1:5120).

## Discussion

The reported prevalence of cutaneous signs associated with COVID-19 pandemic is variable, ranging from the 0.2% of a cohort of 1099 Chinese patients, to the 20.4% in a cross-sectional Italian study.<sup>2,3</sup> Exanthematous eruptions are considered the most common, although less specific COVID-19 related skin manifestations, reported in about 47% of cases.<sup>4</sup> The morphology is very polymorphic, and classification is limited by the subjectivity of the different reports' description,<sup>5,6</sup> going from widespread erythema to urticarial, varicella-like/vesicular, purpuric, maculopapular, morbilliform and papulo-squamous presentation. In the American registry, 22% of the patients with laboratory-confirmed COVID-19 infection presented with a morbilliform rash, while another 9% with a papulo-squamous eruption, occurring mostly on the trunk and associated with mild itching.<sup>7</sup> It is therefore not surprising that the occurrence of a generalized morbilliform papular rash associated with cough and arthritis among the others,<sup>8</sup> during the most critical moment of the outbreak led to consider first a COVID-19 related manifestation. Of course, a closer observation recognized that all skin and systemic symptoms in our patient were typical of secondary syphilis, but one must also consider that admitting a person potentially affected with COVID-19 to hospital triggers a series of containment measures, and careful assessment should be performed.<sup>9</sup>

More-over, social distancing and strict preventive measures during the lockdown are supposed to affect also the circulation of other infective diseases, such as syphilis. A decrease in STI diagnoses, particularly of early syphilis have been reported in Italy during the period of lockdown.<sup>10,11</sup> Our experience suggests not to let the guard down. Despite the global health emergency and the fear of non-recognizing COVID-19, other common diseases should not to be disregarded in everyday clinical practice. This is particularly true for a disease like secondary syphilis which can cause a wide range of symptoms, as the nickname of "great masquerader" points out, similar to actual COVID-19 manifestations.

## Conclusion

Current pandemic is adsorbing most of the resources of our healthcare system, and specialty outpatients' services, as well as Hospital Units not directly involved in critically ill COVID-19 patients' risk to be overshadowed. A false sense of protection and social containment generated by lockdown measures can lead to

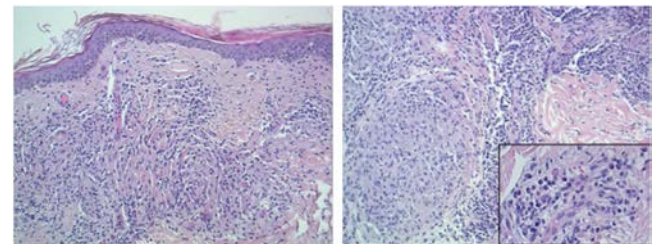
underestimating sexually transmitted diseases circulation in the community. Especially syphilis diagnosis requires an expert eye, and a high level of suspicion, as it is characteristic of the dermatology on-field practice.



**Figure 1.** Widespread erythematous morbilliform rash on the trunk and radix of limbs.



**Figure 2.** Closer view of the slightly papular and scaly surface of the eruption on the abdomen. A more erythematous edematous component was present on the face, with bilateral conjunctival erythema.



**Figure 3.** Histopathology from skin biopsy: mild interface dermatitis, with superficial and deep dermal perivascular and periadnexal inflammatory infiltrate with several multinucleated histiocytes (Hematoxylin & Eosin stain, magnification 10X). On the right, particular of dermal noncaseating granulomas in a background of lymphocytic infiltrate, rich in plasma cells (inset). H&E, 20x; inset 40x.

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