

Oral Manifestations Of COVID-19. A Case Report.

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Citation

R Artuza, V Bohorquez, J Schrock, L Al-Mashni. *Oral Manifestations Of COVID-19. A Case Report.* The Internet Journal of Dental Science. 2021 Volume 17 Number 1.

DOI: [10.5580/IJDS.55748](https://doi.org/10.5580/IJDS.55748)

Abstract

The coronavirus disease (COVID-19), is an infectious disease caused by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2) receptor, which is detected in the cell membrane of epithelial cells of the tongue and salivary gland. The aim of this article it is to report a case of early oral manifestations in a COVID-19 patient. Among the oral manifestations reported are an aphthous-like ulcer, red and white patches located in the dorsum and medial of the tongue, this was diffusely erythematous and inflamed, mildly tender to touch with a geographic pattern. Just a few articles reported in the literature, focused attention on oral clinical manifestations as one of the first signs and symptoms of the disease. As health care providers we should be alert of the clinical manifestation in our patients, to identify early oral signs and symptoms of COVID-19, to control the spread of this deadly disease.

INTRODUCTION

The coronavirus disease (COVID-19), is an infectious disease caused by a newly discovered severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Since the identification of this new airborne infectious microorganism (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) in Wuhan, China, millions of cases have been diagnosed worldwide, with mortality rates ranging from 3% to 12%¹.

This disease has high virulence with human-to-human transmission, and an incubation period ranging from 2 to 14 days². The virus is resistant to standard defenses that do not appear to respond efficiently to inflammatory invasion and cytokine storm³. The clinical course of COVID-19 depends on the host immune response, and frequent symptoms include fever, headache, malaise, cough, dyspnea, loss of taste and smell; and other symptoms like diarrhea, abdominal pain, confusion, lymphopenia, and hemodynamic disorders have been described^{4,5}. Lymphocytopenia and T-cell over-activation with reduction of an effective humoral/cellular immune response have been reported in COVID-19 patients⁶.

SARS-CoV-2 binds to the angiotensin-converting enzyme 2 (ACE2) receptor, which is detected in the cell membrane of numerous human organs and tissues, including the lungs, kidneys, liver, epithelial cells of the tongue and salivary

glands, upper respiratory tract, nervous system, and skeletal muscle, among others^{7,8}.

It has been reported that atypical manifestations could be in some cases the first and/or the only manifestations of this disease therefore, knowledge of early atypical symptoms can contribute to early diagnosis, then to control outbreaks, identifying early signs and symptoms of COVID-19 to speed-up self-isolation procedures⁹.

Since the oral health of COVID-19 patients can be affected by the infection, there is still doubt whether these manifestations could be a typical pattern resulting from the direct viral infection. Therefore, the range of COVID-19 manifestations in the oral cavity has broad and current interest⁹. The aim of this article it is to report a case of early oral manifestations in a COVID-19 patient and to highlight the importance of the early signs and symptoms of this disease.

CASE REPORT

A twenty-four-years-old male presented to the ED reporting the following symptoms: fever, chills, sore throat, muscle aches, pain with white and red patches and inflammation in his tongue with 3 days of evolution. Patient reported living with his wife who was not having any symptom. The patient was asked about symptoms of gustatory and olfactory dysfunction, and he reported hypogeusia. In the medical

history, the patient reported no significant medical history. The patient denied asthma, vomiting, just one episode of diarrhea, no history of herpes, or any other symptom. The clinical exam revealed, tender cervical lymph nodes bilaterally. Mild tachycardia with no murmurs, rubs or gallops. No evidence of respiratory distress was noted. The patients lung exam was normal. Abdomen was not tender, no rebound, guarding, or rigidity. Oral examination revealed 1 cm shallow Aphthous-like ulcer well circumscribe circular with a whitish center and surrounded by an erythematous halo on lower lip just to right of midline (Figure 1), red and white patches located in the dorsum and medial of the tongue (Figure 2, 3, 4), tongue was diffusely erythematous and inflamed, midly tender to touch with a geographic pattern (Figure 5, 6). Tonsils were 2 bilaterally erythematous with the presence of exudates. Inform consent to take intraoral photographs for further publication was signed by the patient.

Figure 1

Aphthous-like ulcer well circumscribe circular with a whitish center and surrounded by an erythematous halo on lower lip just to right of midline



Figure 2

Red and white patches located in the dorsum and medial of the tongue.



Figure 3

Red and white patches located in the dorsum and medial of the tongue.



Figure 4

Red and white patches located in the dorsum and medial of the tongue.



Figure 5

Shows tongue diffusely erythematous and inflamed, with a geographic pattern.



Figure 6

Shows tongue diffusely erythematous and inflamed, with a geographic pattern.



A nasopharyngeal swab for rapid Strep A screen was performed resulting Negative for Streptococcus A. Then the nasopharyngeal swab following reverse-transcription polymerase chain reaction (RT-PCR) for SARS-CoV-2 RNA amplification tested positive.

The systemic symptoms were treated with Acetaminophen 500 mg and Ibuprofen 600 mg and diphenhydramine HCl in suspension was established as an oral palliative intervention. The patient was discharged from the Emergency Department with instructions to follow the quarantine protocol at home.

DISCUSSION

Coronavirus disease (COVID-19) is an infectious disease capable of attacking various organs and presenting multiple manifestations. Just a few articles focused attention on oral clinical manifestations as one of the first signs and symptoms of the disease.

Recognition of disease signs and symptoms is critical for early detection, prompt treatment and hence better prognosis¹⁰.

This article described a case report of a patient with oral manifestations as the first sign of the disease. Thanks to the available literature of reports of cases of patients with these manifestations, it was ordered a COVID-19 test with nasopharyngeal swab following reverse-transcription polymerase chain reaction (RT-PCR) for SARS-CoV-2 RNA amplification, which tested positive.

Cruz Tapia et al¹¹, reported four patients with angina bullosa hemorrhagica-like lesion, vascular disorder, and nonspecific stomatitis, one patient with histological analysis demonstrated perivascular reactive lymphocytic infiltrate, focal capillary thrombosis, and hemorrhage. All cases were diagnosed with COVID-19 disease and confirmed by polymerase chain reaction (PCR).

Martín Carreras-Presas et al¹², reported three cases associated with COVID-19: two where there is a suspicion of COVID-19 and one case of confirmed infection. All cases presented ulcers or blisters in the oral cavity. It is important to mention that the 3 cases all reported having had pain, oral ulcers, or blisters before seeking medical advice. It was suspected that intraoral lesions often are misdiagnosed due to the lack of intraoral examinations, considering the severity of other pathological processes that might concur with this viral infection.

Corchuelo J, et al¹³, reported a case of oral clinical manifestations of an asymptomatic patient with COVID-19 evaluated by teleconsultation between the cities of New York and Cali.

Amorism dos Santos J. et al⁹ reported a case of oral lesions in a patient diagnosed with COVID-19 who presented oral manifestations such as recurrent herpes simplex, candidiasis, and geographic tongue. They also reported that the oral conditions presented by their patient supports the hypothesis that they are highly suggestive of secondary lesions resulting from the deterioration of systemic health or due to treatments for COVID-19. Unlike our case, where the patient reported pain and swelling of the tongue in the first 24 hrs of the onset of symptoms.

Some of the oral manifestations reported in the literature including dysgeusia, petechiae, candidiasis, traumatic ulcers, HSV-1 infection, geographical tongue, thrush-like ulcers, among others. Moreover, further studies are highly

recommended to evaluate the oral manifestations in patients with COVID-19. In conclusion, as health care provider we should be alert of the oral clinical manifestation in our patients, to be able to identify early oral signs and symptoms of COVID-19, to control the spread of this deadly disease.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

1. Brandão TB, Gueiros, L. A., Melo, T. S., Prado-Ribeiro, A. C., Nesrallah, A., Prado, G., Santos-Silva, A. R., & Migliorati, C. A. . Oral lesions in patients with SARS-CoV-2 infection: could the oral cavity be a target organ?. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 2020.
2. Jiang F, Deng L, Zhang L, et al. Review of the Clinical Characteristics of Coronavirus Disease 2019 (COVID-19). *J Gen Intern Med* 2020;35(5):1545-49.
3. Guo YR, Cao QD, Hong ZS, et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. *Mil Med Res* 2020;7(1):11.
4. Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. *JAMA* 2020;323(13):1239-42.
5. Rothan HA, Byrareddy SN. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *J Autoimmun* 2020;109:102433.
6. Dzedzic A, Wojtyczka R. The impact of coronavirus infectious disease 19 (COVID-19) on oral health. *Oral Dis* 2020.
7. Sungnak W, Huang N, Becavin C, et al. SARS-CoV-2 entry factors are highly expressed in nasal epithelial cells together with innate immune genes. *Nat Med* 2020;26(5):681-87.
8. Zou X, Chen K, Zou J, et al. Single-cell RNA-seq data analysis on the receptor ACE2 expression reveals the potential risk of different human organs vulnerable to 2019-nCoV infection. *Front Med* 2020;14(2):185-92.
9. Amorim Dos Santos J, Normando AGC, Carvalho da Silva RL, et al. Oral mucosal lesions in a COVID-19 patient: New signs or secondary manifestations? *Int J Infect Dis* 2020;97:326-28.
10. Halboub E, Al-Maweri SA, Alanazi RH, Qaid NM, Abdulrab S. Orofacial manifestations of COVID-19: a brief review of the published literature. *Braz Oral Res* 2020;34:e124.
11. Cruz Tapia RO, Peraza Labrador AJ, Guimaraes DM, Matos Valdez LH. Oral mucosal lesions in patients with SARS-CoV-2 infection. Report of four cases. Are they a true sign of COVID-19 disease? *Spec Care Dentist* 2020;40(6):555-60.
12. Martin Carreras-Presas C, Amaro Sanchez J, Lopez-Sanchez AF, Jane-Salas E, Somacarrera Perez ML. Oral vesiculobullous lesions associated with SARS-CoV-2 infection. *Oral Dis* 2020.
13. Corchuelo J, Ulloa FC. Oral manifestations in a patient with a history of asymptomatic COVID-19: Case report. *Int J Infect Dis* 2020;100:154-57.

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