Oral Injuries Caused by SRS-CoV-2: Clinical Evidence and Hypothesis

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ABSTRACT

Certain authors have reported oral manifestations in patients infected with SARS-CoV-2. Whether such manifestations, are due to the disease itself (COVID-19), or secondary to the patient's systemic condition is unknown. This editorial, draws attention to a series of clinical evidence-based oral lesions and to hypothetical ones that have not yet been studied, highlighting the relevant role of dentists, not only in the detection and treatment of such lesions, but also in early detection of the disease.

Keywords

SARS-CoV-2, COVID-19, oral health, oral mucosal lesions, salivary flow, microthrombosis, quality of life.

Key points

- This document highlights the lesions caused in the oral mucosa by SARS-CoV-2 infection.
- It highlights the uncertainty of whether these lesions would be specific to the disease (COVID-19), or secondary to the systemic condition of the patient.
- Likewise, it suggests a series of hypothetical alterations, both due to the uncontrolled inflammatory response and microthrombi, which would give rise, in the oral cavity, to the compromise of the vascularization of the pulp and periodontal structures, with the consequent damage to these structures, compromising dental vitality and support.

INTRODUCTION

Humans who are infected with SARS-CoV-2, can develop a potentially life-threatening severe acute respiratory syndrome; nevertheless, according to recent data, the most common signs and symptoms are headache, a sore throat, hyposmia, hypogeusia, diarrhea, dyspnea and, in severe cases, pneumonia [1].

CLINICAL EVIDENCE

Although, lesions of the oral mucosa have been sporadically reported, their role in identification and early diagnosis of the disease, has not yet been studied in depth.

Certain authors, have reported oral lesions associated with COVID-19 that develop in the early stages of the disease, taking the form of recurrent herpetic lesions affecting the palatal mucosa, geographic tongue, ulcers on the tongue dorsum, blisters on the inner lip mucosa, desquamative gingivitis and others [2,3].

It is not known whether such manifestations are primary and, therefore, pathognomonic signs of the disease, or whether they are secondary, due to the systemic condition itself. Moreover, diagnosis is further complicated by the recommendation against the performing biopsies during the course of the disease [3].

HYPOTHESIS

Respiratory organ lesions, associated with SARS-CoV-2, could be related to angiotensin-converting enzyme 2 (ACE2) receptors. Certain authors have, hypothetically, suggested that the cells that distribute this enzyme, preferentially located in the oral and nasal mucosa, would transform into host cells of the virus, triggering inflammatory reactions in organs and tissues related to this type of receptors, such as oral mucosa, mucosa on the back of the tongue or salivary glands, and resulting in xerostomia due to reduced salivary flow [4,5,6].

On the other hand, it should be noted that, since there are currently, no effective drugs, against COVID-19, those used for treatment could be associated with certain adverse reactions such as oral mucosa lesions, among others [3,7].

Besides, there is scientific evidence that COVID-19 triggers an uncontrolled inflammatory response, a "cytokine storm", not only at the pulmonary but also at the systemic level, which could lead to generalized gingivitis, to which deterioration of the immune system and salivary hyposecretion would contribute [8].

Likewise, certain authors have reported that, COVID-19, causes massive microthrombosis, which accompanies respiratory failure [9]. These microthrombi, could migrate to the vessels that irrigate pulpal and periodontal structures, compromising their vascularization and resulting in damage to tooth vitality and support. Moreover, this situation would be more common in young individuals, in whom vascularization of these structures is greater.

In the light of the above and bearing in mind that the greatest sources of transmission are Flügge droplets and aerosols, it is clear that dentists, primary care physicians and dermatologists play an important role in the detection and treatment of oral cavity lesions. They should, therefore, work together on the care of patients diagnosed with or suspected of COVID-19 with the purpose of controlling the disease and ensuring, through close monitoring of their oral health, that such patients have an adequate quality of life.

Author Contributions

N.L.-V. wrote the main text; N.L.-V. and A, L.-V. found, reviewed and highlighted the main information from the literature sources; A.L.-V. conducted the critical discussion. The authors have read and accepted the final version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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