

Oral Lesions Associated with Post-COVID-19: Disease Sequels or Secondary Infection?

Lesiones Orales Post COVID-19: ¿Secuelas de la Enfermedad o Infección Secundaria?

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ABSTRACT: The aim of this study was to report the presentation of oral lesions found in a post-COVID-19 patient. A 78-year-old female patient fifteen days post-COVID-19, confirmed through the PCR test, had pain in the mouth with a Visual Analogue Scale (VAS) 8, dysgeusia and odynophagia. Erosive lesions were observed with circumscribed halos, of different sizes along the entire length of the dorsum, bilateral margins of the tongue and labial mucosa. Topical use of vitamin E 40 mg, nystatin oral suspension 100000UI and artificial saliva spray was prescribed. After 14 days, complete repair was observed. However, the patient worsened her respiratory failure and died after 2 days. There is still insufficient evidence to confirm whether this patient's oral lesion is the result of a direct viral infection with SARS-CoV-2. The relevance of inserting the dentist in the care team for infected patients stands out and we encourage the performance of intraoral evaluation, even after medical discharge. In this way, it will be possible to understand its long-term oral manifestations of COVID-19.

KEY WORDS: COVID-19, SARS-CoV-2, oral lesions, immunosuppression, intensive care unit.

INTRODUCTION

Corona virus disease (COVID-19) is caused by a novel coronavirus SARS-CoV-2, started in China and was declared a pandemic by the World Health Organization (Tu *et al.*, 2020). Currently, the disease has spread to 188 countries, with more than 162 million reported cases and over 3.3 million deaths (World Health Organization, 2021). The lung is the main target organ and the manifestations are characterized by fever, dyspnea, dry cough, tiredness and diarrhea. With the increase in cases, new extra pulmonary clinical signs have been reported, such as gastrointestinal, cardiovascular, cutaneous, hematological and maxillofacial signs (Thakur *et al.*, 2021).

Among the maxillofacial manifestations, taste dysfunctions are the most common, present in 45 % of patients (Dos Santos *et al.*, 2021) Although, recent studies have suggested that oral lesions could be a possible manifestation associated with COVID-19. These lesions were quite heterogeneous, varying

in their location and clinical aspects (Halboub *et al.*, 2020; Gomes *et al.*, 2021; Dos Santos *et al.*). Its pathogenesis and etiology is still questionable. Interestingly, other study showed that these lesions may be related from treatment of COVID-19 or immunosuppression (Guerrero, 2021; Pérez-Sayáns *et al.*, 2021). The aim of this study was to report the presentation of oral lesions found in a post-COVID-19 patient.

CASE REPORT

A 78-year-old female patient fifteen days post-COVID-19, confirmed through the PCR test, had pain in the mouth with a Visual Analogue Scale (VAS) 8, dysgeusia and odynophagia. The patient was lucid, with a regular systemic state, using O₂ 6UI and 88 % saturation. Erosive lesions were observed with

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circumscribed halos, of different sizes along the entire length of the dorsum, bilateral margins of the tongue and labial mucosa (Figs. 1A-D). Some of these coalesced, forming a single lesion. The hypotheses of secondary infection from treatment, such as herpes simplex or candidiasis, or benign migratory glossitis after COVID-19 have been suggested. Biopsy was not performed due to the patient's weakened condition.

Topical use of vitamin E 40 mg, nystatin oral suspension 100000UI, acyclovir (Zovirax® 250 mg) and artificial saliva spray (Dry mouth) was prescribed. After 1 day, it was observed that the circumscribed halos became more evident (Figs. 1E-H). The follow-up was maintained, it was observed that the areas started the repair (Figs. 1I-L). Clinical improvement was noted through progressive epithelialization of the lesion (Figs. 2A-P) and pain, VAS 2. After 14 days, complete repair

was observed (Figs. 2Q-T). However, the patient worsened her respiratory failure and died after 2 days.

DISCUSSION

The most common oral manifestations found in the literature were ulcers, vesiculobullous lesions, erythematous and white plaques. Among the locations, the dorsum tongue, hard palate and labial mucosa were the most affected sites (Halboub *et al.*; Iranmanesh *et al.*, 2020; Gomes *et al.*). Fidan *et al.* (2021) analyzed 74 patients with COVID-19 and observed that 78.3 % had an oral lesion. Iranmanesh *et al.* noted that 68 % of these cases were symptomatic. Although, no study has investigated post-COVID-19 and follow up (Iranmanesh *et al.*).



Fig. 1. A-D. Initial aspect of the condition showed erosive lesions with circumscribed halos, of different sizes along the entire length of the dorsum, bilateral margins of the tongue and labial mucosa. (E-H) After one day from topic treatment, it was observed that the circumscribed halos became thicker and whiter. (I-L) Progressive tissue epithelialization of the lesion, during the third day of treatment.

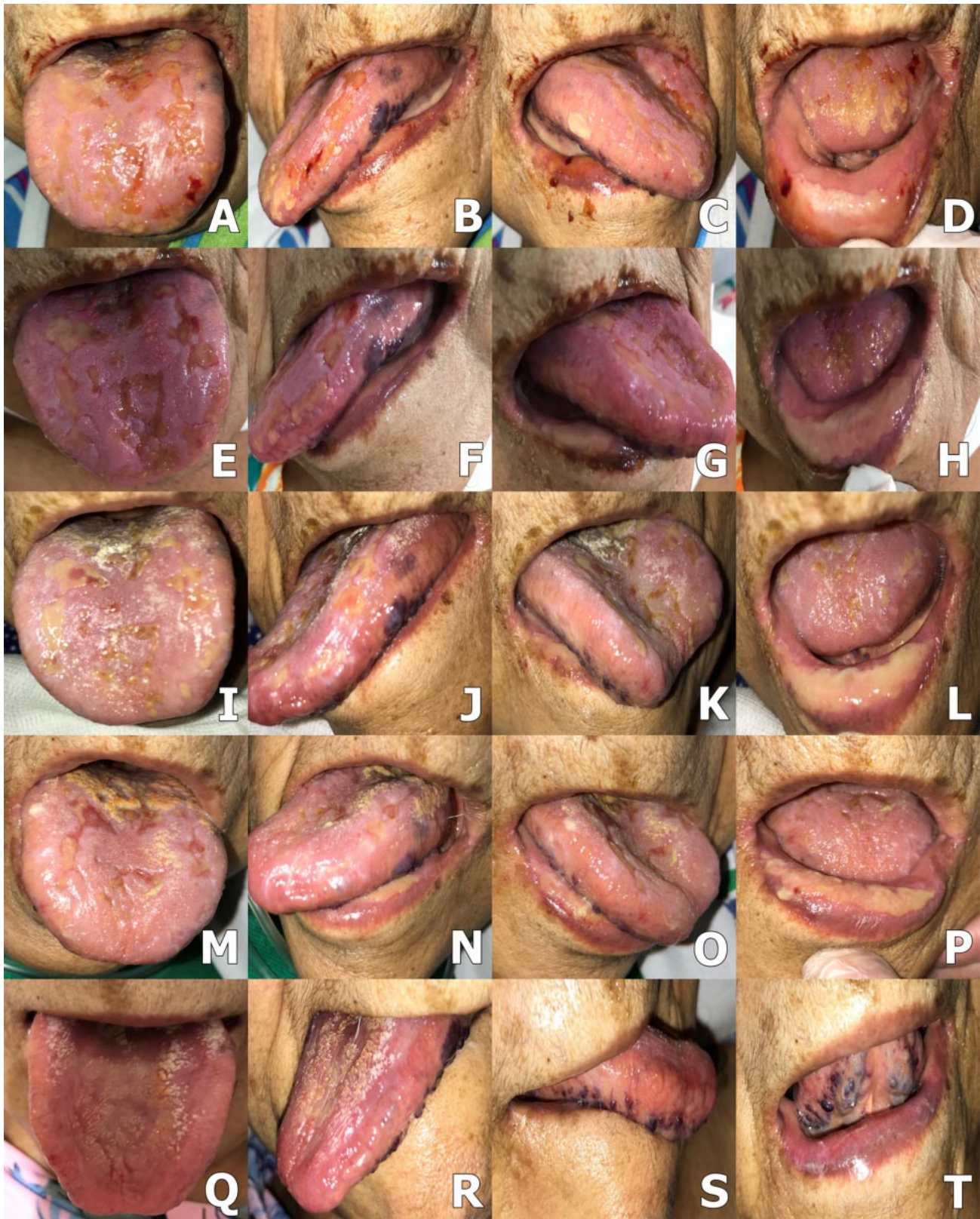


Fig. 2. Progressive tissue epithelization of the lesion, during the (A-D) fifth, (E-H) seventh, (I-L) tenth, (M-P) twelfth and (Q-T) fourteenth day of treatment.

With the interaction between SARS-CoV-2 and angiotensin-converting enzyme 2 (ACE2) receptors, there is an increase in cell wall permeability long-term, which could interrupt the function of oral keratinocytes, resulting in ulcers, erosion and necrosis (Brandão *et al.*, 2021). In addition, these lesions could be justified by the variable systemic inflammatory reaction, which can induce inflammation and vascular complications, with primary or secondary changes to vascular-hematological damage, as seen in cutaneous manifestations (Brandão *et al.*; Dos Santos *et al.*). They can also be related to another type of secondary infection, as herpes simplex and candidiasis, as well as being caused by xerostomia or secondary to the use of drugs to treat COVID-19 (Pérez-Sayáns *et al.*).

Therefore, these manifestations are probably secondary manifestation post treatment or due to the systemic deterioration caused by the disease. Therapeutic modalities used for COVID-19 infection, may contribute to oral health-related problems, as a result of an impaired immune system and susceptible mucosa (Halboub *et al.*; Bezerra *et al.*, 2020; Pérez-Sayáns *et al.*). Stress, due to social restrictions, can also play an important role in the appearance of these conditions (Petrescu *et al.*, 2020).

CONCLUSION

For this reason, the relevance of involvement of the dentist in the care team for infected patients stands out and we encourage the performance of intraoral evaluation, even after medical discharge and follow up. In this way, it will be possible to understand its long-term oral manifestations post-COVID-19.

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RESUMEN: El objetivo de este estudio fue reportar las lesiones orales encontradas en un paciente post-COVID-19. Paciente de sexo femenino de 78 años, con quince días post-COVID-19, confirmada mediante prueba de PCR, el cual presentaba dolor en la cavidad oral con una Escala Visual Analógica (EVA) 8, disgeusia y odinofagia. Se observaron lesiones erosivas con halos circunscritos, de diferentes tamaños a lo largo de todo el dorso, márgenes bilaterales de la lengua y mucosa labial. Se prescribió el uso tóxico de vitamina E 40 mg, nistatina suspensión oral 100000 UI y spray de saliva artificial. Después de 14 días, se observó una reparación completa. Sin embargo, la paciente empeo-

ró su insuficiencia respiratoria y falleció a los 2 días. Aún no hay evidencia suficiente para confirmar si la lesión oral de este paciente es el resultado de una infección viral directa con SARS-CoV-2. Destaca la relevancia de la inserción del odontólogo en el equipo de atención del paciente infectado y fomentamos la realización de la evaluación intraoral, incluso después del alta médica. De esta manera, será posible comprender sus manifestaciones orales a largo plazo de COVID-19.

PALABRAS CLAVE: COVID-19, SARS-CoV-2, lesiones orales, inmunosupresión, unidad de cuidados intensivos.

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