

LETTER TO THE EDITOR

Persistent erythematous candidiasis as a sequela after SARS-CoV-2 infection: A case report

Dear Editor,

A 27-year-old female presented on December 15, 2020, with vast symptomatology, including vomiting, cough, fever, headache, myalgia, sore throat, xerostomia, anosmia, hypogeusia and diarrhoea. The physical examination revealed 37.5°C body temperature and oxygen saturation (SpO₂) of 98% on room air. She was monitored under home quarantine for 15 days, having their oxygen saturation daily measured, under antibiotic and corticosteroid therapy. Posteriorly, the RT-PCR result confirmed the diagnosis of COVID-19. Despite the improvement in the general clinical frame of the patient, xerostomia remains a persistent symptom.

In March 2021, the patient attended our oral medicine service showing an asymptomatic and erythematous lesion on the lateral border of the tongue. Curiously, in an 8-month follow-up, it was observed a second lesion in the central region of the dorsum with clinical features similar to the previous alteration. Medical history revealed no abnormalities. Due to clinical findings and previous infection by SARS-CoV-2, the diagnostic hypothesis of erythematous candidiasis as a consequence of COVID-19 was raised. As a conduct, it was oriented oral hygiene with the use of tongue cleaner and daily mouthwash with nystatin for 14 days. Despite all clinical and pharmacological interventions, candidiasis remained a persistent lesion, mainly as a consequence of reduced salivary flow induced (Figure 1). Currently, she is under periodic clinical follow-up and using sialogogues to salivation stimulate.

Since COVID-19's initial outbreak, several reports of oral lesions have been described in the literature. In general, these manifestations are characterized by the presence of epithelium alterations such as macules, erosions, ulcers, vesicles and blisters, observed mainly in moderate cases of the disease.^{1,2} Although most cases had occurred in phases before vaccination, immunized patients as well may be affected.³ More than 2 years after being declared a pandemic by the WHO, the pathogenicity mechanism of the new coronavirus has not been fully elucidated, however, an intrinsic relationship with ACE-2 receptors has been established.⁴ Interestingly, oral tissues show a high concentration of this protein that justifies the presence of the pathogen in the saliva and subsequent transmission through droplets and aerosols.^{4,5}

In a pioneer study, Matuck et al. (2021)⁵ employing laboratory techniques and histopathological analysis of necropsy samples demonstrated that salivary is a potential reservoir for replication of SARS-CoV-2. Besides, the pathophysiology of COVID-19 is characterized by the presence of severe vasculitis and thrombosis, largely mediated by an exacerbated inflammatory response defined as a "cytokine storm".⁶ For reason this, the inflammatory process itself could lead to morphological and functional alterations in acinar cells, with consequent damage to the salivary gland parenchyma.⁷ Curiously, the number of Sjögren's syndrome cases and salivary disturbers in Brazil increased significantly compared to periods before the pandemic.⁸

Also, it is known that reduced salivary flow is considered an important risk factor for the development of opportunistic infections, including oral candidiasis.⁹ Thus, the irreversibility of the damage to the tissue of the salivary glands could justify the persistence of xerostomia, in some patients, even after infection, as observed in the present case. In concordance, Melo et al. (2022)¹⁰ have mentioned the occurrence of *Sicca* syndrome episodes in patients with post-acute COVID-19 syndrome.

In their retrospective study, Favia et al. (2021)¹¹ observed that of the total of 123 cases of patients diagnosed with COVID-19 and presenting oral lesions, 28 patients (22.7%) had candidiasis, most of them being erythematous. Moreover, SARS-CoV-2 can provoke an unbalance in the individual's resident microbiota in a process recognized as dysbiosis and, consequently, favouring the proliferation of pathogens that may influence the severity of the disease.¹² Therefore, several cases of lesions observed in SARS-CoV-2 positive patients can be a result of this complex mechanism, with the virus can act as both primary and secondary agent in the development of the alterations.

The occurrence of a persistent lesion in patients affected by novel coronavirus may represent a challenge to health services, beyond the impact on people's quality of life. In summary, for some individuals, a long follow-up becomes necessary, mainly by damage to organic structures being unpredictable and those that occasionally were infected in the period before vaccination, whose inflammatory response has been more exacerbated.

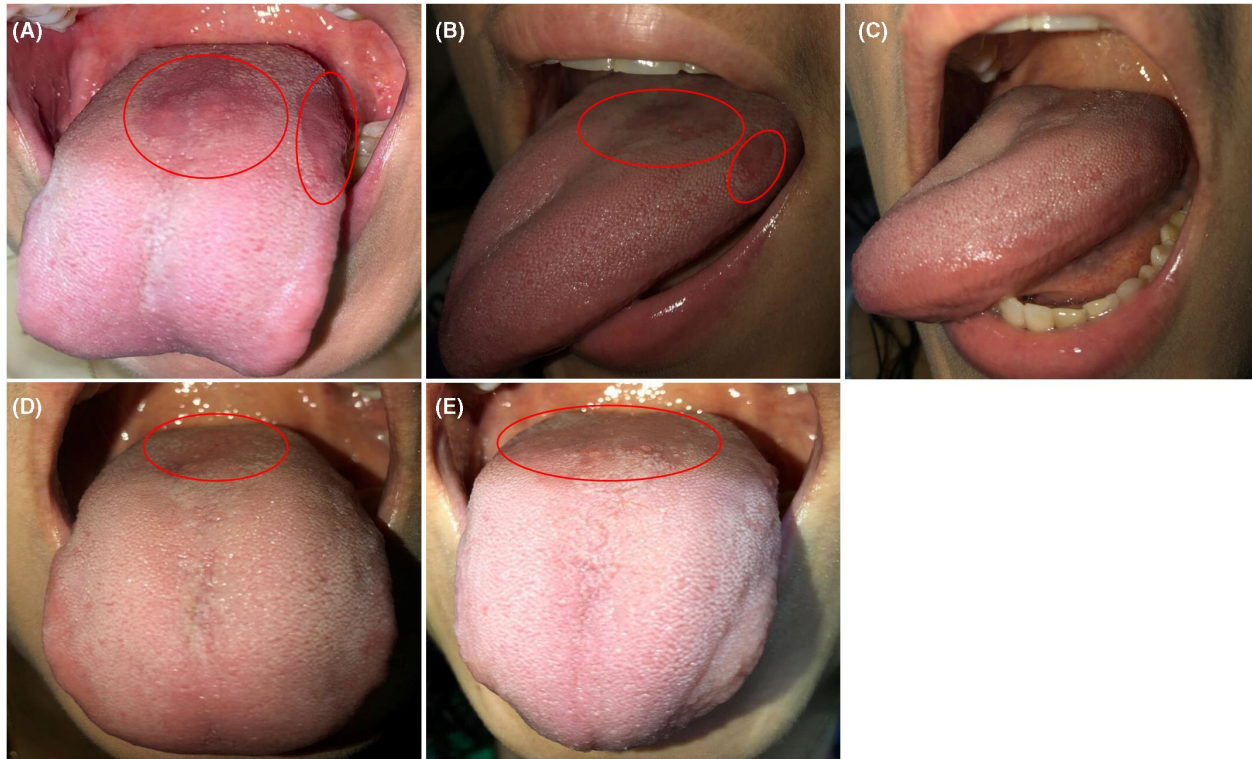


FIGURE 1 Intraoral aspect of lesion observed in the tongue compatible with erythematous candidiasis. (A) - initial aspect of the alteration with a marked presence of erythematous erosive areas in tongue dorsum and lateral border of erythematous aspect (red circles); (B) - Clinical presentation after 7 days of use of nystatin with reduction of depapillation areas (red circles); (C) - Expressive reduction of erosive areas after 14 days of use of nystatin; (D) and (E) - Current aspect of the lesion with 1 month and 2 months, respectively after last attendance. Note to the concentration of erythematous area only in dorsum tongue (red circles).

AUTHOR CONTRIBUTIONS

All authors contributed equally to the manuscript.

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