

Oral Lesions in the COVID-19 Positive Individuals – An Update

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Dear Editor,

The novel Coronavirus Disease 2019 (COVID-19) is a highly contagious acute respiratory disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). Studies have reported oral lesions in patients with COVID-19 such as ulcers or blisters or diffuse reddish lesions affecting both keratinized and non-keratinized tissues of the oral cavity. Such lesions have been observed in the palate [1,2], lip mucosa [1,2], buccal mucosa [2], and tongue [2,3]. These lesions have been advocated by the different authors as a primary reaction to infection by the SARS-CoV-2. Gustatory dysfunction is probably the best known oral manifestation of COVID-19 [4]. Based on animal studies indicating that salivary ducts are the first point of infection and clinical studies showing early presence of SARS-CoV-2 in infected patient's saliva, Wang et al. [5] have hypothesized that the virus may induce acute or chronic sialadenitis, which is an infection caused by different oral diseases, and advocated that clinicians should pay attention to symptoms and signs of sialadenitis in patients with COVID-19 [5]. While some of the lesions that may be associated to COVID-19 could possibly result from other causes particularly in cases where the definitive evidence of COVID-19 was not established [1], others are suggested as a primary reaction to the SARS-CoV-2 [2,3] based on the clinical and microscopic findings. A common feature observed in some patients was an erythematous macular lesion preceding the ulcerations [2,3]. Microscopically, these lesions demonstrate superficial and deep small vessels thrombosis and vasculitis [2,3]. However, it is still unknown if the cause is COVID-19

infection, or not, as maybe are secondary manifestations. The adjacent minor salivary glands were also found to demonstrate CD3 and CD8 positive, intensely lymphocytic chronic inflammation [2].

The SARS-CoV-2 utilize the angiotensin-converting enzyme 2 (ACE2) receptor to access the cells, particularly in lung alveolar cells [6]. The ACE2 receptors are also expressed on the oral mucosa [7] and salivary glands [5]. This suggests that the virus may be able to infect oral cells by using ACE2 receptors leading to the COVID-19-associated oral manifestations. Presence of SARS-CoV-2 in the saliva is the reason why the most common mode of transmission is the inhalation of droplets from an infectious individual. However, not all COVID-19 positive patients present with oral symptoms which could be due to the difference in the tissue expression of ACE2 [6].

While stronger evidence is required in the form of further studies utilizing *in vitro* molecular, *in vivo* and patient-based observational studies to define the nature and underlying mechanisms relating to oral lesions in COVID-19, it is a possibility that such lesions can be early signs of the disease without the classic presentation of other symptoms. In this case, it becomes the responsibility of dental practitioners to recognize and investigate such symptoms and regard every patient as potentially infectious. Dental practitioners should follow strict precautionary measures particularly at a time the society is opening and COVID-19 remains a threat. Current studies suggest that oral lesions may be atypical manifestation of COVID-19 [1-3]. Knowledge of these lesions by the

attending dentist may aid in early detection of patients with asymptomatic disease and may be helpful in stopping the spread of the virus.

Conflicts of Interest

None.

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