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Review Article

Oral manifestations of patients with COVID- 19 infection

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ABSTRACT

COVID- 19 is a horrifying pandemic which affected all countries with significant involvement of population leaving the whole world helpless and in distress and grief. Scientists in the entire universe are working to get the healing solution to get rid of this terrific Corona Virus. Though vaccination against this infection has provided an apt relief but still the fight is on against the developing mutant stains. Numerous positive Covid cases have been presented with varied oral manifestations, which are important for dental surgeons to comprehend. The present review article highlighted oral lesions in patients with COVID- 19 disease.

1. Introduction

The novel coronavirus disease 2019 (COVID-19) presents an important and urgent threat to global health. The novel coronavirus was initially named 2019-nCoV and officially as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The lungs are the primary site of infection for COVID-19, with patients presenting symptoms ranging from mild flu-like symptoms to fulminant pneumonia and potentially lethal respiratory distress.[1]

Coronaviruses are minute in size (65–125 nm in diameter) and contain a single-stranded RNA as a nucleic material, size ranging from 26 to 32kbs in length. The subgroups of coronaviruses family are alpha, beta, gamma and delta coronavirus. The severe acute respiratory syndrome coronavirus (SARS-CoV), H5N1 influenza A, H1N1 2009 and Middle East respiratory syndrome coronavirus (MERS-CoV) cause acute lung injury and acute respiratory distress syndrome (ARDS) which leads to pulmonary failure and result in fatality. Above viruses not only infect animals but also humans till severe acute respiratory syndrome (SARS) outbreak caused by SARS-CoV, 2002 in Guangdong, China. Only a decade later, another pathogenic coronavirus, known as Middle East respiratory syndrome coronavirus (MERS-CoV) caused an endemic in Middle Eastern countries.[2]

COVID 19 virus initiated from Wuhan (china) in December 2019 was then exported to a growing number of countries. Covid 19 first case outside China was reported from Bangkok on 13^{th} January 2020. The number of confirmed cases is constantly increasing worldwide and after Asian and European regions, a steep increase in cases is currently being observed in low-income countries.[3] It is next to impossible to count all the cases spread throughout the world including not only severe and symptomatic cases but also mild ones. Till date there is not a proper feedback from many countries and many countries are still facing the crisis based on their own possibilities, expertise and hypotheses. Thus, there are different criteria for testing, hospitalization and estimation of cases making it difficult to calculate the number of people affected by epidemic. Available data showed that ratio of fatality in medically

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attended patients is approximately 2%, but, also in this case, a true ratio may not be known for some time.[4]

Covid 19 symptoms varies from mild to severe symptoms characterized by severe respiratory failure that necessitates mechanical ventilation and support in an intensive care unit (ICU), to multiple organs and systemic manifestations in terms of sepsis, septic shock, and multiple organ dysfunction syndromes (MODS). This infection also is asymptomatic, but frequency is not predicatble.[5] Pneumonia appears to be the most frequent serious manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging. Clinical features of Covid 19 are difficult to identify from other viral infections; less common symptoms have included headaches, sore throat, and rhinorrhea. In addition to respiratory symptoms, gastrointestinal symptoms e.g., nausea and diarrhea have also been reported, and in some patients they may be the presenting complaint. Respiratory droplet transmission is the main route and it can also be transmitted through person-to-person contacts by asymptomatic carriers.[6]

2. Oral Manifestations of Patients with Covid 19 Infection

Some oral manifestations have been observed in patients with coronavirus disease 2019 (COVID-19). However, there is still a question about whether these lesions are due to coronavirus infection or secondary manifestations resulting from the patient's systemic condition. Dos Santos et al[7] reported a case of COVID 19 in a sixty-seven-year-old Caucasian man with a history of cruising the Brazilian coast in the past 30 days. Patient developed these symptoms ten days back which included respirstory symptoms, exertion, fever, diarrhea, gustatory and olfactory symptoms and hypogeusia. A persistent white plaque on the tongue dorsum was found. In addition to the white plaque, the dentist also observed multiple pinpoint yellowish ulcers on the tongue dorsum resembling the late stage of herpetic recurrent oral lesions. After a complete intraoral examination, no other lesions on the oral mucosa were observed, except for a nodule located in the lower lip, measuring approximately 1 cm in its largest diameter, suggestive of a reactive lesion (fibroma) that was confirmed by the patient's pre-existing conditions. In a new intraoral examination, it was observed that the patient presented an asymptomatic geographic tongue classified as severe associated with fissured tongue.

Chaux-Bodardetal[8] reported an irregular ulcer on the dorsal side of the tongue in 45-years-old female patient. Lesion revealed history of inflammation of tongue papillae which is painful for first 24 hours and later 24 hours inflammation of erythematous macula, which evolved into irregular and asymptomatic ulcer. After 10 days, the ulcer completely healed without scar. Soares et al[9] reported the clinical and microscopic characteristics of oral reddish lesions and ulceration that occurred in a 42-year-old male patient positive for SARS-Cov-2 confirmed by polymerase chain reaction (PCR). The patient also had a history of diabetes and hypertension, and when admitted to the hospital presented fever (temperature of up to 39.3°C), cough and shortness of breath. On the skin some petechial - like and small vesico-bullous lesions of unknown etiology were observed. A treatment with dexamethasone and dipyrone was established for 1 week. The patient also complained of a painful ulceration in the buccal mucosa that was biopsied. Oral examination showed besides the ulcerated lesion, multiple reddish macules of different sizes scattered along the hard palate, tongue, and lips. After 3 weeks of follow up the lesions presented complete remission.

Martín et al[10] reported 3 cases of COVID- 19 patients. In first patient, the lesions resembled a herpetic recurrent stomatitis. In second case, multiple small ulcers on his palate with unilateral affection were seen and in third patient, there was painful tongue of patients from the beginning. Association of oral ulcers and infection with SARS CoV 2 may be reported by thousands of symptomatic patients who have been affected by the disease because oral ulcers are very painful and interfere with chewing, swallowing and speaking. The current literature supports evidence that dysgeusia is the only oral symptom of COVID-19.[11] In a cross sectional study by Giacomelli et al[12] the authors verbally interviewed 59 hospitalized patients with COVID-19, their primary objective was to evaluate the prevalence of olfactory and taste disturbances, in particular the presence or absence and the characteristics of these disturbances at or before the patients were hospitalized, none of the interviewed patients reported oral ulcerations or vesiculobullous lesions.

3. Conclusion

COVID- 19 is a dreadful pandemic which affected all countries with significant involvement of population. Typical oral ulcerations and mucosal lesions are characteristic of this disease. And these oral manifestations can become a lead to Corona virus infection and may help to increase awareness and to allow for early detection of infection with SARS-CoV-2.

4. Conflicts of Interest

All contributing authors declare no conflicts of interest.

5. Source of Funding

None.

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