Case study

Title: Tongue Ulcer as an Oral manifestation of COVID-19: A case report

ABSTRACT:

In patients with corona virus disease, some oral manifestations have been observed since 2019. (COVID-19).However, it is unclear whether these lesions are the result of corona virus infection or secondary manifestations of the patient's systemic condition. The purpose of this article is to present a case of an oral condition in a COVID-19 patient.

KEY WORDS: COVID-19 patient, Tongue, Salivary gland epithelium, angiotensin-converting enzyme 2 (ACE2) receptor

INTRODUCTION:

Corona virus disease 2019 (COVID-19) had lead to a massive impact on health with severe respiratory problems which caused the hike in the mortality rate. This was due to the new airborne disease caused by the corona virus 2 [SARS-CoV-2]) in Wuhan, China, followed which caused a global pandemic that associated with mortality rates ranging from 3% to 12%[1.] The symptoms of the global pandemic disease include fever, fatigue, dry cough, myalgias, sore throat, breathing difficulties, and respiratory complications that make the status of the respiratory function to decline in association to this it can also develop other local and systemic impacts

such as acute cardiac damage, acute renal failure, gastrointestinal complications, dysgeusia, anosmia, and neurologic symptoms, including Guillain-Barre syndrome[2, 3, 4]. Several oral signs and symptoms such as taste disorders, unspecific oral ulcerations, desquamative gingivitis, petechiae, and coinfections mainly fungal lesions such as candidiasis, Mucormycosis, Aspergillosis, Histoplasmosis etc have been already described by many[5]. The majority of oral fungal infections (oral mycosis) are resultant of opportunistic conditions. Host resistance impairment allows for the initiation and progression of pathogenic conditions through local colonization in the oral cavity. The frequency of oral mycosis has remarkably increased globally with the increased use of immunosuppressive drugs and immunodeficiency viral infections. Mucormycosis, a deadly fungal infection, has affected thousands of COVID-19 patients in India. The patho physiological consequences of diabetes combined with the acute inflammatory surge in COVID-19 and steroid treatment weakens person's immunity and renders susceptibility to fungal infections. Fungal spores can grow in airways or sinuses, and invade bodies' tissues, explaining why the nasal cavity and par nasal sinuses is the most common site of Mucormycosis infection[19, 20]. The palate and tongue were the most frequent locations for the unspecific oral ulcerations, followed by gingiva and lips which is associated with pain in 75% of patients and 25% of patients reported with dysguesia[6, 7, 8, 9, 10, and 11.] There have been some COVID-19 cases reporting oral manifestations since the oral health of COVID-19 patients can be affected by the infection, there is still doubt whether these manifestations could be a typical pattern resulting from the direct viral infection. Perhaps oral lesions may result from systemic deterioration, considering the possibility of opportunistic infections and also adverse reactions to treatments[4, 13, 14, 15, 16, 17]. Therefore, the range of COVID-19 manifestations in the oral cavity has broad and current interest. Due to the emerging evidence coronavirus2 has oral manifestations which go

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unnoticed due to lack of the intraoral examination[18].Therefore this article's overall objective was to report a relevant case of oral manifestation in a COVID-19 patient.

CASE PRESENTATION:

A 55 year old female had presented with an extensive ulcer noted on the dorsum of the tongue for 4 days. Three weeks prior she had symptoms of fever, cough, chest tightness and later her rRT-PCR test for COVID-19 was positive. Later the patient developed pneumonia as a covid complication. She was under anticoagulants, corticosteroids, multivitamins and ventilator. The patient had no history of diabetes mellitus and hypertension.

Laboratory examinations showed increased total leukocyte count (TLC), C-reactive protein 17.954 mg/L, and blood urea is also found to be elevated. Computed tomography of lungs showed mild glass ground opacification bilaterally.

An extensive ulcer with irregular border was noted at the posterior region of tongue on the dorsal aspect which is surrounded by a scrapable whitish plaque with no loss of taste or burning sensation. (Fig 1)

Patient was prescribed Tab Fluconazole, Clotrimazole mouth paint, Chlorhexidine 0.12% mouth rinse. The patient was advised to avoid hot and spicy food and to drink plenty of fluids with bland diet. We had also advised the patient to practice proper oral hygiene.

After 3 days, patient was reviewed. During the examination, the size and extent of the lesion appeared to be the same when compared to the previous examination latter patient was succumbed to disease.

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Fig 1. burning sensation

DISCUSSION:

The above report was a case of COVID-19 with pneumonia; associated oral manifestations developed during the course of disease. Usually tongue ulcerations present along with loss of taste and burning sensation. Oral lesions are severe among the geriatric which varies with the degree of COVID-19 infection. The Lesion appeared clinically with an ill-defined, irregular border which appeared to be extensive and noted on the posterior dorsal aspect of the tongue. Literature states SARS-CoV-2 virus has an affinity to the tongue and salivary gland epithelium is more by which the oral lesions occurs during the disease.

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The most common oral manifestations include ulcerative lesions, vesiculobullous/ macular lesions and acute sialadenitis of the parotid gland (parotitis). The cause of oral ulcerations is due to 2 mechanisms. The first postulate is that the virus has a similar anatomic shape in which outer structures are proteins that enhances the attachment of SARS CoV- 2 to specific human-cell receptors hence this virus adheres to the angiotensin-converting enzyme 2 (ACE2) receptor, which is detected in the cell membrane of lungs, kidneys, liver, epithelial cells of the tongue and salivary glands, upper respiratory tract, nervous system, and skeletal muscle that lead to inflammatory response. The second postulate is the patients systemic condition, psychological impact and also secondary to the drugs administered during the course of the treatment.

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Also, COVID-19 acute infection along with associated therapeutic measures, could potentially contribute to adverse outcomes concerning oral health leading to various opportunistic fungal infections, recurrent oral herpes simplex virus (HSV-1) infection, unspecific oral ulcerations, fixed drug eruptions, dysgeusia, xerostomia linked to decreased salivary flow, ulcerations and gingivitis as a result of the impaired immune system and/or susceptible oral mucosa.

Conclusion

In conclusion considering the pandemic situation we suggest that oral manifestations in patients with suspected or confirmed SARS-CoV-2 infection should be monitored. Tongue ulcers can be considered as a direct manifestation and a symptom in the severe form of SARS-CoV-2 infection or as an opportunistic infection due to the immune suppressive state of the patient due to the same disease. Therefore tongue ulcers should be further documented in covid

19 cases for deeper understanding of the correlation between ulcers as an opportunistic infection and/or a manifestation of the disease process.

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