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Case Report

# A Suspected Denture Stomatitis Induced By COVID 19 Virus

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## Abstract

Patients infected with coronavirus disease 2019 (COVID-19) could develop serious life-threatening conditions. The typical symptoms of this disease include dry cough, fever, myalgia and headache. Possible mucocutaneous involvements associated with COVID-19 should be considered especially for denture wearer patients. This article reports a Covid-19 positive patient who has denture stomatitis and oral reddish lesions appeared and developed during the infection period, this could identify unknown manifestations of COVID-19.

**Keywords:** Oral manifestation, coronavirus, denture stomatitis

# INTRODUCTION

The World Health Organization (WHO) declared on 11 March 2020 the coronavirus disease (COVID-19) a pandemic and turned into a global issue[1]. The most commonly reported signs and symptoms are sore throat, headache, hypogeusia, hyposmia, diarrhea, and in severe cases pneumonia[2].

Recently, a number of studies have shown that COVID-19 can affect different organ in association with the oral mucosa, including vesiculobullous eruptions, acute sialadenitis and ulcerative lesions[3, 6].

Candida-associated dental appliance rubor is caused by yeast referred to as fungus that adheres to oral surfaces together with tissue layer and acrylic dentures. That's why, denture wearers are most likely to be affected, especially for people who have problems keeping their mouth clean or patients with special medical condition [7].

However, why this denture stomatitis appeared and developed for a patient with good oral hygiene and good health condition only during the infection period with Covid-19 virus? Does the coronavirus stimulate the activation of candida and the development of thrush under denture?

Through this clinical case, we'll attempt to clarify some answers, by describing in details a dental appliance redness involvement in COVID-19 patient.

**Patient and observation**

A 60-year-old healthy male patient positive for COVID-19 confirmed by polymerase chain reaction (PCR). His reportable high fever (39°) for two days, inflammatory disease and inability to style or smell. One week after the onset of symptoms, the patient complained of severe pain in his palate and upper alveolar ridge.

The patient did not have a history of drug use or chronic disease; he is wearing a maxillary complete denture for 4 years and reported that it is the first time that he develops this type of lesion.

Visual inspection showed well-maintained upper acrylic denture, largely erythematous surface on the hard palate following the outline of the base plate with ulcerative lesions in the right and left posterior palate. (Fig-1)

On oral examination, the denture was ill fitting with an epulis fissuratum in relation to the left vestibule. The palatal lesion was soft in consistency and rough in texture.

A swab culture test by scraping of tissue was performed and sent to laboratory for identification. The specimen confirmed the diagnosis of candida-associated denture stomatitis.

Antifungals and chlorhexidine mouthwash were described, patient advised to keep denture as clean as possible and to keep it out of mouth as much as possible, and definitely overnight. Upper denture was relined using tissue conditioner to promote tissue recover and return as closely as possible to normal form (Fig-2).

His lesion improved within 3 days.

**Figure-1:** Denture stomatitis with large erythematous surface following the outline of the base plate

**Figure-2:** Denture base relining with soft tissue conditioner

# DISCUSSION

Orofacial manifestations in patients with COVID19 have been underestimated, mainly due to the limited documentation on this topic. Oral examination has been neglected during the pandemic considering the severity of other pathological processes[8].

In this case report, patient was positive for COVID-19 PCR-test. He reported oral pain, redness and discomfort in eating or swallowing before seeking medical advice.

It is important to mention that for this patient, the candida associated denture stomatitis was developed for the first time only during the infection period, despite the good oral hygiene.

Some studies tried to explain the development of oral manifestations by two mechanisms: directly related to the specificity of COVID-19 virus and its effect on nasal and oral mucosal cells[9], or indirectly as a result of COVID-19-associated stress, immunosuppression or related to drugs treatment [4,5,10].

Those physical and psychological alterations constitute favorable conditions for Candida Albicans growth and development under preexisting acrylic denture. Therefore, further investigations are required to explain the pathogenesis of these clinical manifestations to better understand this disease.

Topical medications, such as a mixture of antifungals and chlorhexidine mouth rinse were used to treat patient's oral symptoms. Stomatitis healed after about one week. Denture base relining is typically essential to condition soft tissue altered by the thrush till it get traditional type and texture [11,12].

# CONCLUSION

COVID-19 cause directly or indirectly denture stomatitis and various potential oral manifestation that are underreported in the literature[13,14] mainly due to the lack of intraoral examination of patients with COVID-19. Therefore, tissue layer involvement ought to be thought of as a possible manifestation of COVID-19, and oral tissue layer examination ought to performed for all suspected cases.

**Conflict of interest**

The authors declare no conflict of interest.

Author contributions statements

The first and second authors participated in the treatment of the patient and wrote the paper

The third author controlled the treatment protocol and revised the final manuscript

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