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Review Article

Oral Manifestations of Covid-19 - Are they the introductory symptoms?

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ABSTRACT:
A novel coronavirus (COVID-19) is associated with human to- human transmission. For it is a never been experienced respiratory disease before and with infection ability widely and quickly, it attracted the world's attention but without treatment and control manual. With no antiviral drugs nor vaccines, and the presence of carriers without obvious symptoms, traditional public health intervention measures are significantly less effective. It is all the more imperative to contain the viral infection in the initial stages by identifying early signa and symptoms. Recently it has come to light that some cases of coronavirus have shown oral as well cutaneous lesions before developing respiratory distress or other symptoms like fever or cough. Purpose of this review is to highlight the lesions which are expressed in the course of disease which can help in diagnosing it further.
Keywords Coronavirus, oral manifestations, cutaneous lesions, early diagnosis.

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INTRODUCTION

In December 2019, the 2019 novel coronavirus (2019-nCoV) was discovered and identified in the viral pneumonia cases that occurred in Wuhan, In the following month, the 2019-nCoV quickly spreading inside and outside of Hubei Province and even other countries. What's more, the sharp increase of the case number caused widespread panic among the people. Medical professionals require an up-to-date guideline to follow when an urgent healthcare problem has emerged. It has been confirmed to be an acute respiratory infection caused by a novel coronavirus. Respiratory droplet transmission is the main route of transmission, and it can also be transmitted through contact.[1] It is a novel coronavirus belonging to the β genus. The 2019-nCoV has an envelope; its particles are round or oval, often polymorphic, with a diameter from 60 nm to 140 nm. Based on currently epidemiological survey, the latency period is generally from 3 to 7 days, with a maximum of 14 days.[2] Unlike SARSr-CoV, 2019-nCoV is contagious during the latency period. The population is generally susceptible to the virus. The elderly and those with underlying diseases show more serious conditions after infection, Those with one of the following pathogenic evidence is the confirmed case: (1) positive for the 2019-nCoV by the real-time PCR test for nucleic acid in respiratory or blood samples.[3] 2) viral gene sequencing shows highly homogeneity to the known 2019-nCoV in respiratory or blood

samples. 2019-nCoV infected patients display symptoms like fever, respiratory symptoms such as coughing, shortness of breath, or diarrhoea, Patients with mild symptoms may not present positive signs. Patients in severe condition may have shortness of breath, moist rales in lungs, weakened breath sounds, dullness in percussion, and increased or decreased tactile speech tremor, etc.[4]

CORONAVIRUS STAGES

Early-stage, characterized as cold-dampness obstructing lung. In this stage, the clinical manifestations present as follow: aversion to cold with or without fever, dry cough, dry throat, fatigue and hypodynamic state, oppression in chest, epigastric fullness, or nausea, loose stool. The tongue is pale or reddish, the tongue fur is slimy white, and soggy pulse. Middle-stage, characterized as epidemic toxin blocking the lung. In this stage, its clinical manifestations include persistent fever or alternating cold and heat, cough with less phlegm, or yellow phlegm, abdominal distension and constipation; oppression in chest with anhelation, cough with wheezes, panting on exertion; or red tongue, slimy yellow fur or yellow dry fur, slippery and rapid pulse.[1] Early Severe stage, characterized with high fever, oppression in chest with anhelation, purple-black facial complexion, lips dark and swollen, obnubilation, crimson tongue, yellow dry fur, surging and fine rapid string like pulse. Thus, its therapeutic logic is detoxicating and dispersing blood stasis. Late Severe-stage had clinical manifestations including dyspnoea, panting on exertion or need assisted ventilation, accompanied by coma, and agitation, cold limbs with cold sweating, dark purple tongue, thick or dry thick tongue fur, floating and rootless pulse. Recovery-stage, presents as shortness of breath, fatigue and hypodynamic state, anorexia, nausea and vomiting, glomus and fullness, weak stools, ungratifying loose stool, pale tender-soft enlarged tongue, slimy white tongue fur which at later stages changes to red tongue and thin tongue fur. [4]It shows that from the earliest manifestations to the later stages tongue lesions play an important role in helping with the diagnosis of coronavirus infection.

GENERAL CLINICAL & ORAL MANIFESTATIONS

Covid-19 has a huge range of clinical manifestations and, due to the high number of patients involved, the diagnosis is mostly based on clinical findings or suspicions. Coronavirus disease 2019 is associated with a variable inflammatory reaction that can induce vascular inflammation.[5] Cutaneous lesions like erythematous rashes on the body and specifically on the feet called as COVID feet. Erythematous rash has been described and could also be explained by an inflammatory reaction. The irregular ulcer on tongue appears after a short while of macular erythematous lesion, which is caused due to vasculitis.[6] This lesion usually has a 24 hours painful inflammation of tongue papillae, which is followed by 24 hours of erythematous macula, later evolving into irregular and asymptomatic ulcer. After 10 days, the ulcer can completely heal without scar formation. The toe lesions appear after the oral lesion but needs further studies to validate the same.[4] Another way for COVID-19 to occur in the oral cavity is by major- and minor-salivary gland infection, with subsequent release of particles in saliva via salivary ducts. It is essential to point out that salivary gland epithelial cells can be infected by SARS-CoV a short time after infection in rhesus macaques, suggesting that salivary gland cells could be a pivotal source of this virus in saliva. Additionally, the production of SARS-CoV-specific secretory immunoglobulin A (sIgA) in the saliva of animal models intranasally immunized was previously shown. Considering the similarity of both strains, we speculate that salivary diagnosis of COVID-19 could also be performed using specific antibodies to this virus.[7] Considering that COVID-19 was recently identified in saliva of infected patients, the COVID-19 outbreak is a reminder that dental/oral and other health professionals must always be diligent in protecting against the spread of infectious disease, and it provides a chance to determine if a non-invasive saliva diagnostic for COVID-19 could assist in detecting such viruses and reducing the spread. The transmission via contact with droplets from talking, coughing, sneezing and aerosols generated during clinical procedures is expected. The origin of droplets can be nasopharyngeal or oropharyngeal, normally associated with saliva.[8] Diagnosis of COVID-19 can theoretically be performed using salivary diagnosis platforms. Some virus strains have been detected in saliva as long as 29 days after infection, indicating that a non-invasive platform to rapidly differentiate the biomarkers using saliva could enhance disease detection. Saliva samples could be collected in patients who present with oropharyngeal secretions as a symptom.[9] The possibility of a saliva self-collection can strongly reduce the risk of COVID-19 transmission. Besides, the nasopharyngeal and oropharyngeal collection promotes discomfort and may promote bleeding especially in infected patients with thrombocytopenia. The sputum of a lower respiratory tract was produced by only 28% of COVID-19 patients, which indicates a strong limitation as specimen to diagnostic evaluation.[10]

CONCLUSION

Further studies are needed to investigate the potential diagnostic of COVID-19 in saliva as well as the early oral manifestations it shows in the oral cavity. Dentists especially have a greater role to play now more than ever in diagnosing this lesion in early stages and use adequate precautions to avoid transmission.

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