

COVID-19 and the Practice of Oral Medicine

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Abstract

The pandemic of coronavirus disease (COVID-19) raises important concern to the practice of Oral Medicine. The practitioners of Oral Medicine are usually in close contact with the patient's biological specimens and it is important that the Oral Medicine teams should be protected from the risk of COVID disease. Every effort should be made by OM practitioners to ensure that new biosafety measures are mastered to reduce the spread of the novel virus and other viral agent spreading diseases.

Keywords: COVID-19, Practice, Oral Medicine.

Introduction

COVID-19 was declared a pandemic by the World Health Organization (WHO), with substantial numbers of infected cases and deaths reported in many countries. The disease is caused by one of the coronaviruses, which are a large family of viruses that may cause severe illnesses, such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)¹. These viruses are common in animals with the potential of transmission to humans. They are composed of an envelope, a lipid layer, and single-stranded large RNA. The name "corona" ("crown" in latin) is attributed to the spherical shape and surface projections².

The pandemic of coronavirus disease (COVID-19) has become a significant global public health concern. Since the announcement of the Public Health Emergency of International Concern, many countries have implemented lockdown and restrictive quarantines and routine dentistry. Also the practice of Oral Medicine (OM) was suspended in several countries because the main path of COVID-19 transmission is through droplets from the oral cavity³.

The era of Corona-Virus-Disease-19 (COVID-19) is an important historical period from various points of view, from the world health to the huge cascade of socio-economic implications. Everyday habits have been turned upside down, and the way of life of people all over the globe, engaged in all activities, especially in the health sector, will be involved in this

necessary change. The practitioners of Oral Medicine being in close contact with the patient's droplets and aerosols generated also have to revise the operating protocols to protect the team and the patients from the risk of infectious diseases⁴ because dental professionals are generally widely exposed to the infection but they could also be the first ones to identify SARS-CoV-2 positive patients as well⁵.

As a consequence, the most recommended guideline is that OM practitioners should avoid scheduling any patient, and provide only emergencies during the outbreak. However, since urgent dental care is still being operated and delivered by emergency or on-call dental teams, it is imperative for OM professionals to also understand the modes of transmission of SARS-CoV-2, identify potential patients with COVID-19, and understand the needs for extra-protection during their practice to minimise the transmission of the novel virus⁶.

Patient screening by a questionnaire, hand hygiene, correct use of the personal protective equipment, mouth rinse before dental procedures, rubber dam isolation, anti-retraction handpiece, disinfection of the clinic settings, correct management of medical waste are the fundamental aspects of breaking the chain of infection in OM practice⁷. The oral medicine specialists should nowadays also develop advanced skills in online OM tele(video) consultations (TC) and remote triaging by setting up a self-care advice and reassurance centre. Other prescribing modalities are telephone consultation with patients on chronic therapies like systemic corticosteroids or immunosuppressants (dosage adjustment, untoward

events). New TeleMedicine (TM) technology (Zoom, Teams, Skype video-conferencing software) may effectively support OM specialists since the patient can submit photo or video of recorded OM problem, to be entered in the electronic health record, along with clinical notes gathered during TC. Since the main diagnostic value in OM is related to visual assessment, it comes with no surprise that images and videos sent by patients can constitute a crucial element of provisional diagnosis, to give subsequent advice or urgent referral. Even without tactile assessment, TM can allow continuity of care, initial triaging and prioritizing patients' needs⁸.

To minimize the staff exposure to a potentially COVID-19 infected but asymptomatic patient, a wider clinical application of point-of-care (POC) rapid RT-qPCR molecular testing for SARS-CoV-2 in OM clinics would support clinical management and save precious enhanced PPE for medical workforce⁹.

Due to the likelihood of re-infection and insufficient immunity, it seems prudent to introduce rapid screening for all patients with unknown COVID-19 status who need particularly an urgent OM procedure. It has to be noted that COVID-19 immune assays IgM/IgG rapid tests may be inadequate for triaging the emergency patients with suspected COVID-19¹⁰.

Undoubtedly, a similar invention of chair-side POC tests could be extremely useful for other suspected infections having oral cavity manifestations, including those with viral/bacterial origin (EBV, HSV, HPV, TB etc.) to rule out other causative factors and support diagnostic protocol¹¹.

Although a vast majority of OM interventions are deemed to be treated rather as non-aerosol generating procedures because they do not usually require ultrasonic scalers, air polishing or high-speed rotor use, the special safety measures for staff seem to be justified until evidence-based protocols are launched as prolonged saliva collection, along with intraoral drainage, some extraoral tests (Shirmer's test), intensive wound irrigation and ultrasonic nebulization could potentially produce micro-droplets or splatter, so can microbiological and immunoassays swabs¹². High-risk OM interventions should be carried out in a surgery with an efficient negative-pressure and evacuation systems, hence the installation of advanced air ventilation systems in OM premises can facilitate removal of airborne pathogens from clinical environment. More frequent use of high-volume aspiration during even a basic OM procedure can reduce airborne contamination. The clinical use of these additional measures could

play an important role especially in the management of medically compromised individuals, who compose a major group of OM patients¹¹.

Even if most OM activities are low risk considering bio-aerosol formation, for some multi-sized droplets/splatter presence during some OM interventions may be unavoidable, along with complex continuum of respiratory secretions micro-droplets from oropharynx¹². Whilst a precise classification of intraoral OM procedures according to risk of micro-droplets exposure is currently lacking, it would be more than welcome to protect staff and patients because the practice of OM generally involves the management of chronic oral mucosal diseases and orofacial pain. Some diseases and conditions are considered to be oral medicine emergencies such as exacerbation of pemphigus or pemphigoid, Stevens-Johnson syndrome, toxic epidermal necrolysis, mucositis and giant cell arteritis. Careful management of these conditions will avoid or reduce aerosol producing procedures as much as possible especially if the use of handheld instrumentation is prioritized. When patients suffer from these problems, an unscheduled appointment is required to resolve the issues. Furthermore, during this stressful period, some oral mucosal diseases or orofacial pain problems may represent urgencies and a good history and patient interview and even the use of clinical photographs can be useful in getting to a differential diagnosis under pandemic conditions¹³.

Other less disturbing conditions like loss of taste and smell have been recognized lately as one of the symptoms of COVID-19¹⁴. An Italian team reported that 20 out of 59 COVID-19 patients who were interviewed (33.9%) had at least one taste or olfactory disorder and 11 (18.6%) had both¹⁴. Most of the patients with these symptoms (91%) reported the occurrence of taste alterations before being hospitalized. Taste and smell disorder in this case could be explained by the fact that SARS-CoV-2 has been known for its interaction with angiotensin converting enzyme 2 (ACE2) receptor, to facilitate its penetration into the cell, and this receptor is widely expressed on the epithelial cells of oral mucosa and the brain¹⁵. In fact, expression of ACE2 was found to be higher in tongue, where the taste buds are most abundant, than gingiva or buccal mucosa¹⁵.

Another possibility is that SARS-CoV-2 could also be detected in saliva and infection of salivary glands is also possible, which increases the availability of virus in the oral cavity and its uptake by the epithelial cells¹. Dentists should be aware of this symptom since they may encounter patients with taste abnormalities in the form of dysgeusia or burning mouth syndrome.

This is particularly important because these symptoms may precede the onset of respiratory diagnostic manifestations of the disease. However, reporting this symptom should be interpreted with caution as the affected patients are known to be of the old age group who are already susceptible to taste and smell disorders. Oral manifestation of tongue ulcers was also reported by Chaux-Bodart et al¹⁶.

As coronavirus reveals its certain neurotropic abilities, it may also potentially affect the salivary glands function and the inhibitory role of saliva in prevention and protection from viral infections can be considerably diminished due to hyposalivation¹⁷ and because reduced saliva secretion may impair the oral and airway mucosal surface as a physical barrier, which consequently enhances the adhesion and colonization of viruses¹⁸. This reduction may also impair the secretion of antimicrobial proteins and peptides¹⁹ which makes immediate management of dry mouth imperative.

Cutaneous manifestations like erythematous rash, widespread urticaria and chickenpox-like vesicles involving mainly the trunk with associated itching are other features which can be seen in patients with COVID-19 in the OM clinic. Apparently, there is no correlation between these cutaneous manifestations with disease's severity and it is safe to say that such skin manifestations are similar to cutaneous involvement occurring during common viral infections²⁰.

Medications

There is no contraindication to most drugs commonly used for OM cases in COVID-19 patients contrary to the initial assumption that Ibuprofen is contraindicated in COVID-19 patients based on unconfirmed anecdotal reports. According to the European Medicines Agency, there is no confirmed link between Ibuprofen and a worsening of COVID-19. Therefore, NSAIDs should be used to control higher pain and swelling in patients that will benefit from them²¹.

Conclusion

In the face of the COVID-19 pandemic, OM practitioners must master new biosafety measures necessary to reduce the spread of the novel virus and other viral agent spreading modalities. They must also know how to identify patients with active infections and, most importantly, to prioritize self and patient protection.

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