One year into the COVID-19 pandemic – temporomandibular disorders and bruxism: What we have learned and what we can do to improve our manner of treatment

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Abstract

The coronavirus disease 2019 (COVID-19) pandemic has drastically changed the routine way of life and challenged the ways in which health and dental services are provided. During the 1st lockdown, practiced in most of the countries, routine dental procedures were suspended. Even after the lockdown was eased, visiting crowded dental clinics was still considered health-threatening, especially among populations at high risk of developing a severe reaction to COVID-19. Regrettably, in most cases, temporomandibular disorders (TMD) and bruxism were not included under the definition of emergency, leaving many patients without the possibility of consulting their dentists.

A literature search, performed about 10 months after the declaration of the pandemic, found only a few studies dealing with TMD and bruxism during COVID-19. Most of the studies indicate adverse effects on subjects’ psycho-emotional status (stress, anxiety, depression), which in turn lead to the intensification of subjects’ TMD and bruxism symptoms, and increased orofacial pain. Unlike other oral pathologies, which require manual interventions, chronic orofacial pain can be addressed, at least at its initial stage, through teledentistry and/or consultation.

Remote first aid for patients suffering from orofacial pain includes various kinds of treatment, such as the self-massage of tense and painful areas, stretching, thermotherapy, drug therapy, relaxation techniques, meditation, and mindfulness, all of which can be administered through the phone and/or the Internet. Relevant legal and ethical issues should be considered while using remote modes for the triage, diagnosis and treatment of chronic orofacial pain patients.

Keywords: bruxism, temporomandibular disorders, orofacial pain, COVID-19, teledentistry
Introduction

About a year ago, the World Health Organization (WHO) was informed of cases of pneumonia of unknown cause in Wuhan, China. A novel coronavirus – severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) – was identified as the cause. On March 11th, 2020, due to a rapid increase in the number of cases outside China, WHO announced that the outbreak could be characterized as a pandemic. By mid-March 2020, the WHO European region had become the epicenter of the respiratory coronavirus disease 2019 (COVID-19) epidemic, reporting over 40% of the globally confirmed cases. At the time of this review being written, COVID-19 cases worldwide reached 78,065,178, causing the death of over 1,716,170 people.

Following WHO’s declaration of pandemic and due to uncertainty about the ways of spread, efficient treatment and the lack of vaccine, most countries adopted social distancing policies and partial to total lockdown. Routine everyday life was drastically altered and has not gone back to normal yet. This situation gave rise to severe health threats, economic uncertainty and social isolation, each of them with a potential of severe deleterious effects on both the physical and mental health of people.

The COVID-19 pandemic has challenged the existing healthcare systems across the globe in general, and in particular, the way dental care is provided. The primary mode of spread of the virus is via respiratory droplets, which puts dentists at the spearhead of infection. As a result, during the 1st lockdown, routine dental procedures were suspended in most countries. Only emergency dental procedures, specified by WHO and the American Dental Association (ADA), were authorized. In most countries, dentists were instructed to limit their practices to emergency and urgent dental care. Regrettfully, temporomandibular disorders (TMD) and bruxism were not considered as such, leaving many patients without the possibility to consult their dentists in moments they might have needed them the most.

Temporomandibular disorders and bruxism are often associated with psychosocial factors, such as stress, anxiety, depression, and catastrophizing. The TMD-related pain affects the daily activities and quality of life of numerous individuals worldwide. Bruxism (at daytime and/or during sleep) poses similar problems. A recent review demonstrated that patients with high levels of stress were almost 6 times more likely to report awake bruxism. Researchers explained the sustained muscle contraction as a fight-or-flight reaction and implicated that awake bruxism could be part of the defense behavior occurring in times of stress and anxiety.

Undoubtedly, the COVID-19 pandemic has caused significant distress to billions of individuals worldwide. The most common psychosocial responses to the pandemic are stress, anxiety and depression.
According to Almeida-Leite et al., orofacial specialists should be aware of a greater risk of developing, worsening and perpetuating TMD and bruxism (mainly awake bruxism) due to COVID-19. The authors suggest that guidelines for patient education, self-management, home care, and relaxation techniques, which are already available on the Web, can be useful tools in times of isolation.

Unlike other oral pathologies, which require immediate manual interventions (i.e., caries, pulpitis, a periapical abscess, etc.), chronic orofacial pain originating from TMD and/or bruxism can be addressed, at least at its initial stage, through teledentistry and/or consultation.

Telemedicine refers to the use of information-based technologies and communication systems to deliver healthcare across distances. Teledentistry is not a new concept in dentistry and was used by the US military as early as in 1994. Video communication was found to be feasible and effective in chronic disease management.

Today, software such as WhatsApp, Zoom, Skype, and many others may help triage, diagnose and treat various conditions. Lv et al. suggested video conferencing guidelines and a flow chart to help dentists in decision-making at times when face-to-face consultation is prohibited and crowded waiting rooms are health-threatening, as during COVID-19. Patel et al. developed an algorithm to utilize guidance from the Centers for Disease Control and Prevention (CDC), which can help decide if in-office consultation is essential or a telehealth visit is sufficient.

As most of the instruments for the initial diagnoses of TMD and bruxism are already carried out via self-report questionnaires, teledentistry may provide additional visual parameters, such as the verification of the range of motion, indicating painful areas, etc.

First aid for TMD patients can include conservative kinds of treatment, such as the self-massage of tense and painful areas of the masticatory muscles, which can be demonstrated via teledentistry or a link to a video demonstrating such exercises may be provided. Other techniques may include mandibular relaxation and coordination exercises, stretching, and thermotherapy. Drug therapy, relaxation techniques, meditation, and mindfulness can all be administered through the phone and/or the Internet, and help subjects deal with the painful condition, reduce catastrophizing and improve quality of life.

One accepted mode to manage bruxism is based on increasing the patient’s awareness of the syndrome (especially for awake bruxism). The methods include monitoring via the Ecological Momentary Assessment (EMA) applications for smartphones, such as the BruxApp application, which can help monitor the bruxing behavior and act as biofeedback. All of these can be easily administered through video communication, namely, teledentistry.

Telemedicine and teledentistry are relatively new entities, which have expanded substantially during the pandemic. Unfamiliar legal and ethical issues may arise. Chang et al. point out that patients should be acknowledged that, even if slight, a possibility exists that the transmitted information can be intercepted. Another issue, which should be addressed, is that of informed consent. As nothing replaces the gold standard evaluation of a clinical examination, informed consent should cover not only the traditional consent text, but also the possibility of the inherent risk of improper diagnosis and/or treatment. Furthermore, medico-legal, copyright, fiscal, and taxation issues should also be considered concerning the information exchange.

Hopefully, the mass vaccination of the population has already started, bringing hope for a better and healthier year to come. Nevertheless, there are lessons to be learned from the pandemic. Dentists and orofacial pain specialists should adopt at least some of the new strategies, technologies and guidelines for remote treatment. This will not only ease the provision of treatment to remote populations, who lack immediate access to dental clinics, but also make us better prepared for possible future health crises. Further research should focus on providing clear guidelines for the triage, diagnosis and treatment of chronic orofacial pain, TMD and bruxism through teledentistry.

References

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