

PANDEMIC BRUXISM: AN UNWANTED GIFT OF COVID-19?

ABSTRACT

The on-going coronavirus pandemic has considerably changed all our lives and redefined what it means to be normal. The consequent lock down and social restrictions generated a sense of financial insecurity, socioeconomic distress as well as psychological disturbances among the general public. The psycho emotional turbulence kept the individuals at a constant state of agitation for longer periods, triggering the body's natural 'fight or flight' response. Instead of making use of the lock down and social restrictions as an opportunity to rest and recharge, in a good proportion of people all the survival energy turned into stress, anxiety and apprehension. This accentuated levels of anxiety and emotional distress hampered general health to a remarkable extent. As pointed out by few recent studies, one of the notable oral manifestations of COVID 19 induced stress is bruxism and related temporomandibular disorders (TMDs). As a result, increased prevalence of microfractures of teeth or enamel, tooth wear, broken or chipped teeth, stiffness and pain in the jaw joint have also been reported. Management of stress related bruxism should be primarily directed to its cause. This should encompass the treatment of bruxism per se along with proper addressing of its underlying psycho emotional issues.

Key words: COVID 19, pandemic, bruxism, temporomandibular disorders.

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INTRODUCTION

Bruxism is a repetitive masticatory muscle activity characterized by clenching or grinding of the teeth, or bracing or thrusting of the mandible.¹ It can act as a possible risk factor for several negative consequences of health like masticatory muscle pain, oral mucosal damage, mechanical tooth wear, and failures of prosthodontic constructions. This condition is split into sleep bruxism (SB) and awake bruxism (AB). Both sorts of bruxism affect males and females equally. Many psychosocial factors like stress and anxiety are reported to be related to both sleep bruxism and awake bruxism as well.² Bruxism as a whole is commonly considered the most harmful parafunctional activity of the temporomandibular joint (TMJ).³

In late December 2019 a brand new, un-familiar and threatening pandemic called COVID-19 (Coronavirus 2019 disease), caused by the SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) infection, began to spread around the world. The routine life was altered for months and ultimately it ended up in severe health threats, economic uncertainty, and social isolation, leaving potential adverse effects on the physical and mental state of the people. Stress, anxiety, and depression were the most common psychological responses of people to the Coronavirus pandemic.² Elevated levels of stress and anxiety have a well-established link to bruxism.⁴ The psychological impacts of COVID 19 can influence the oral and maxillofacial syndromes, like Temporomandibular Disorders (TMD) and bruxism, which could further aggravate the orofacial pain.² This article reviews the prevalence of bruxism in COVID 19 times, its pathophysiology, signs and symptoms as well as management.

Review of literature

Few studies have illustrated elevated levels of bruxism and temporomandibular disorders associated with those suffering with an altered psycho-emotional status.

Concomitant studies were conducted among around 1800 subjects in two culturally different countries, Israel and Poland with an objective to evaluate the effect of the current pandemic on the possible prevalence and worsening of

TMD and bruxism symptoms. The results showed that the coronavirus pandemic has significantly altered the psychoemotional status of both Israeli and Polish populations, resulting in the intensification of their bruxism and TMD symptoms. The most reported possible/ probable predictors of sleep and awake bruxism reported were gender, anxiety and concerns about COVID 19 on mental health and social relationships. The authors concluded that the aggravation of the psychoemotional status caused by the Coronavirus pandemic can result in bruxism and TMD symptoms intensification and thus lead to increased orofacial pain.²

According to data from the ADA Health Policy Institute's COVID19 impact poll for the week of 21st September 2021, a majority of participating dentists have seen a rise in stress-related oral health conditions in their patients since the onset of the COVID19 pandemic. More than half of the polled dentists reported an increase in the prevalence of bruxism (59.4%), chipped and cracked teeth (53.4%), and temporomandibular disorder symptoms (53.4%) among their patients. The survey results concluded that increased stress related oral manifestations could be attributed to psychological impacts of COVID 19 on individuals.⁵

Few studies have reported aggravated responses among patients suffering from TMDs.

A study was conducted with an objective to evaluate the presence of reported symptoms of TMD and the level of depression, somatization, and stress perceived among one hundred and eighty two participants in Italy. This study supported the hypothesis which stated lockdown as a major stressful event that may trigger temporomandibular disorders or increase reported symptoms in subjects already suffering from this dysfunctional pathology. Nearly 40% of the participants reported complaints related to bruxism (grinding of teeth or clenching of the jaw during the day and/or night, and jaw ache or feeling stiff when waking up in the morning). Almost 51.4% of subjects who reported a worsening of TMD symptoms in the last month related this condition to the coronavirus lockdown and to the stress experienced in that period. The results of this study seem to support the

hypothesis that stress during the pandemic lockdown influenced the onset of temporomandibular joint disorders and facial pain, albeit with individual responses.⁶

A prospective cohort study aimed to understand the impact of COVID-19 distress on psychological status and facial pain severity in people with temporomandibular disorders among 45 adults (19 chronic, 26 acute/subacute TMD) in Italy. The participants were recruited prior to the COVID-19 outbreak. Baseline assessment took place before the outbreak while a follow-up was performed immediately after the lockdown period. COVID Stress Scale scores were significantly higher in those with chronic TMDs compared to those with acute/subacute TMDs. The study findings reinforced the role of COVID 19 related stress as a possible amplifier of chronic pain and pain-related disability in people with TMDs.⁷

It is reported that there has been an increase in patients presenting with features of toothwear, attributed to grinding and jaw clenching. The prevalence of cases reporting pain with tooth fractures been seen increasingly in dental practices.⁸

Pathophysiology

It is well documented that emotional stress plays a role in accentuating masticatory muscle activity bruxism and consequent circulatory changes in masticatory muscles, which can cause TMD symptoms.⁹ The various psychological issues involved in emergency and threatening situations like COVID-19 pandemic are able to trigger a chain of events that end up in extreme levels of sympathetic activity and further release of adrenocortical steroids which lead to muscle vasoconstriction and increased peripheral vascular resistance. Feelings of warmth and cold, palpitations, tachycardia, nausea, abdominal pain, diarrhoea, and constipation can all be the consequences of autonomic stress responses. All these reactions are supposed to initiate/aggravate a situation of system overloading, a common finding in bruxism and TMD patients.¹⁰

Signs and symptoms

Pain in the teeth and sensitivity to heat and

cold, chronic muscular facial pain with tension head aches caused by intense muscle contraction, microfractures of teeth or enamel, tooth wear, broken or chipped teeth, stiffness and pain in the jaw joint with restricted opening and difficult chewing can be indicators of bruxism. Sometimes, the pain may mimic headache or ear ache.¹¹

Management

Management of bruxism should primarily focus on the elimination of its cause. Proper case history should be elicited prior to the initiation of treatment. Spending quality time with family members, being indulged in different healthy exercises and sports activities, following a schedule/routine, and taking a break from traditional and social media could enable people to combat the mental health issues to a certain level. Public awareness campaigns aimed at keeping up mental health in the prevailing situation is yet another action that should be urgently undertaken.¹²

The Inter-Agency Standing Committee (IASC) guidelines can also be adapted are organized around a 4-tiered intervention pyramid: (1) restoring basic services and security for the affected population, (2) strengthening family and community networks, (3) providing distressed individuals with psychosocial support, and (4) providing specialized mental health intervention for severely affected survivors.¹³

Various treatment modalities for bruxism per se includes occlusal therapy where occlusal splints are provided for preventing dental grinding and consequent toothwear in case of sleep bruxism, behavioural modifications that includes psychoanalysis, hypnosis, meditation, sleep, hygiene measures with relaxation techniques and self-monitoring. Another recommended option is biofeedback technique that works on the principle that bruxers can unlearn their behaviour when a stimulus makes them aware of their adverse jaw muscle activities. Pharmacological therapy utilising drugs that inhibit acetylcholine release at the neuromuscular junction (NMJ) is yet another successful line of treatment.¹¹

CONCLUSION

COVID 19 catastrophic calamity has caused significant adverse effects in the psycho social domains of individuals and populations. Various cross-sectional studies have shown its oral impacts in the form of aggravating bruxism and other TMDs. The crisis and its psychological as well as oral impacts need to be addressed at the earliest.

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