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Bruxism-A Review

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ABSTRACT:
Bruxism is a movement disorder characterized by grinding and clenching of teeth. Awake bruxism is found more in females as compared to males while sleep bruxism shows no such gender prevalence. Etiology of bruxism can be divided into three groups: psychosocial factors, peripheral factors and pathophysiological factors. Treatment modalities involve occlusal correction, behavioural changes and pharmacological approach. Faulty occlusion is one of the most common causes of bruxism that further leads to temporomandibular joint pain. Bruxism has been described in various ways by different authors. This article gives a review of the literature on bruxism since its first description.

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INTRODUCTION:

Bruxism is motor muscle activity characterized by tooth grinding which is particularly important for the dentist because of damage to tooth restoration, induction of temporal headache and temporomandibular joint.Drum [1] coined the term parafunction to describe the difference between occlusal stress that occurs during mastication and swallowing and occlusal stress that occurs outside of normal activity. Jaw clenching, bruxism, teeth grinding, tooth tapping, cheek biting, lip biting, and obje are examples of non-functional oromandibular or lingual behaviours.

In 1907, Marie Pietkiewicz coined the phrase "la bruxomanie" [2]. It was later coined the term "bruxism" to describe the gnashing and grinding of teeth that occurs for no apparent reason. Bruxism is described by the Glossary of Prosthodontic Terms (GPT-8) [3] as parafunctional grinding of teeth or an oral behaviour characterised by involuntary rhythmic or spasmodic nonfunctional gnashing, grinding, or clenching.Our research experience has prompted us in pursuing this survey (Hemalatha and Dhanraj, 2016) (Ramya, Pandurangan and Ganapathy, 2019) (Anjum, Ganapathy and Kumar, 2019; Inchara, Ganapathy and Kumar, 2019) (Philip, Ganapathy and Ariga, 2012) (Gupta and Dhanraj, 2009; Mohamed Usman *et al.*, 2013; Indhulekha, Ganapathy and Jain, 2018) (Ganapathy *et al.*, 2013) (Menon and Ganapathy, 2019).

TYPES OF BRUXISM:

Bruxism can happen when you're awake or asleep. Daytime bruxism, also known as ‘Awake Bruxism' (AB) or Diurnal Bruxism,' is a semi voluntary ‘clenching' practise (DB). AB is linked to life stress brought on by family responsibilities or job pressure. AB is a masticatory-muscle movement that occurs when awake and is marked by repeated or prolonged tooth contact, as well as bracing or thrusting of the mandible Other habits that people participate in during the day, such as lip biting, pen biting, and so on, are not generally included in this category. Oral habits are a term used to describe these behaviors[4].Bruxism during sleep either during daytime or during night is termed as ‘Sleep Bruxism’ (SB). SB is an oromandibular behavior that is defined as a stereotyped movement disorder occurring during sleep and characterized by tooth grinding and/or clenching [5].

It was suggested that sleep and awake bruxism are positively associated, whereby, individuals reporting sleep bruxism have a higher probability of also reporting awake bruxism than individuals not reporting sleep bruxism [6,7].In the adult population, the prevalence rates of AB and SB are approximately 20 and 8–16 percent, respectively [8]. AB is found to be more common in women, while sleep bruxism has no such gender distinction .SB appears about the age of one year, shortly after the eruption of deciduous incisors [9].The disorder is appearing more frequently in the younger population .The prevalence in children is between 14 to 20%. In adults aged above 60 years and over only 3% are being aware of frequent grinding [10].

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ETIOLOGICAL FACTORS:

The cause of bruxism is thought to be multifactorial. SB and grinding have been linked to a variety of peripheral factors, like tooth involvement in dental occlusion, psychosocial influences including stress or anxiety, and central or pathophysiological triggers involving brain neurotransmitters or the basal ganglia [2].

A)PATHOPHYSIOLOGICAL FACTORS:

More and more pathophysiological factors are being implicated in the emergence of bruxism. Since bruxism often occurs during sleep, the physiology of sleep, especially the "arousal response," has been extensively researched in the searching for possible causes of disorder.The arousal response is a sudden shift in sleep depth in which the person either enters a lighter sleep stage or actually wakes up. Gross body movements, increased heart rate, breathing changes, and increased muscle activity are all part of this response.Macaluso et al. [11] in their study showed 86% of bruxism episodes were associated with arousal response along with involuntary leg movements.

B)PSYCHOLOGICAL FACTORS:

Number of studies is published in the literature regarding the role of psychosocial factors in the etiology of bruxism but none of these describe the conclusive nature because of the absence of large scale longitudinal trials.study by Van Selms et al. [12] demonstrated that daytime time clenching could significantly be explained by experienced stress, although experienced stress and anticipated stress were unrelated to sleep bruxism as recorded with ambulatory devices. All these studies show possible relationship between bruxism and various psychosocial factors is growing but not conclusive[13]

C)PERIPHERAL FACTORS:

In a study with infants, several occlusal factors were found to be linked to self-reported bruxism. In his paper, Giffin [14] states that the establishment of harmony between maximum intercuspation and centric connection is required for successful bruxism management.However, the majority of studies published in the literature on this topic now conclude that clinically proven bruxism and occlusal factors in adults have no or little connection [15]. In their analysis of the literature, Manfredini et al. [16] reported that there is still a lack of methodologically sound research to definitively refute the role of occlusal factors in the etiology of bruxism .

BRUXISM ASSOCIATED WITH NEUROLOGICAL DISORDERS:

Bruxism has been reported in the sense of a variety of neurological disorders, primarily through case reports. Clinically, an acute onset of excessive teeth grinding that happens mostly during waking hours and cannot be stopped voluntarily should alert the clinician to the possibility of bruxism as a secondary aetiology.some patients with cranial and cervical dystonia show severe awake teeth grinding in combination with dystonic/dyskinetic movements in other parts of the

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face [17,18]; in two patients with drug-resistant temporal lobe epilepsy, long-lasting teeth grinding episodes were the main features of the seizures, and usually preceded other typical signs such as the loss of consciousness and the limbs automatisms [19,20]; and in three women suffering from Huntigton's disease,Tan et al. reported a persistent awake teeth grinding that worsened with the progression of the disease.

The management of bruxism associated with neurological disorders focuses on improvement of chewing, speaking, swallowing, and feeding, which are severely compromised, and to relieve orofacial pain symptoms.Conservative measures such as occlusal splints and the use of drugs for treating the underlying disease may help the patient to control bruxism[21,22].Injections of botulinum toxin in the masticatory muscles have been used in two case series of patients with severe bruxism associated with cranial dystonia and other movement disorders[23]

BRUXISM AS A ADVERSE EFFECT OF MEDICATIONS:

Mostly middle-aged women with a wide spectrum of psychiatric disorders developed awake or sleep bruxism a few weeks after starting the medicament. Second-generation antidepressants have been the more cited drugs prone to cause bruxism, further followed by antipsychotics or bupropion.Regarding the clinical management, some authors have suggested to be "WAIT AND SEE" for 1 month because spontaneous remission may occur [24]. If the problem persists, a reduction of dose or change of medication may alleviate or even resolve the problem [25-27], although a definitive cease might be expected with drug withdrawal [28-30].

TREATMENT:

Awake bruxism: Main awake bruxism is difficult to treat effectively. Since these patients have been confirmed to have higher anxiety levels and somatization symptoms, treatments such as trigger counselling, habit maintenance, relaxation therapy, or biofeedback have been suggested [31].

Sleeping bruxism:

The treatment of sleep bruxism usually begins with counselling of the patient with regard to sleep hygiene. This includes stop smoking and drinking of coffee or alcohol at night, limit the physical or mental activity before going bed, and ensure good bedroom conditions (quiet and dark)[32].Occlusal splints have been considered as the first-line strategy for preventing dental grinding noise and tooth wear in primary sleep bruxism[33].

CONCLUSION:

Bruxism is a typical parafunctional habit with multifactorial aetiology. It occurs during both sleep and wakefulness, however, nocturnal bruxism and diurnal bruxism should be distinguished. Bruxism normally has no significant implications, although it may have pathological consequences in certain patients, such as tooth wear, occlusal damage, and masticatory muscle hypertrophy.

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