EDITORIAL

Awake Bruxism: Current Insights into Etiology, Diagnosis, and Management

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Dear Editor,

Awake bruxism, a parafunctional activity involving rhythmic teeth grinding and clenching during wakefulness, is an intriguing yet challenging phenomenon to understand and manage. This condition has gained increasing attention due to its potential consequences for dental health, craniofacial pain, and quality of life.[1–4] Despite its prevalence, awake bruxism remains an enigma, with various contributing factors making diagnosis and treatment complex. The exact mechanisms underlying this condition remain incompletely understood; recent advances have shed light on its multifactorial nature, involving biological, psychological, and environmental elements. Genetic predisposition, neurotransmitter imbalances (such as dopamine and serotonin), stress, anxiety, and sleep-related factors have been implicated in initiating and exacerbating bruxism episodes. Moreover, factors like occlusal discrepancies, lifestyle habits (e.g., caffeine intake and smoking), and psychosocial stressors contribute to the complex etiological landscape of awake bruxism (such as various diseases or pregnancy).[5–8]

Awake bruxism exerts a substantial impact on oral health and overall well-being. Prolonged grinding and clenching can lead to dental attrition, enamel erosion, and microfractures, compromising tooth structure and integrity. Furthermore, the excessive forces exerted on the temporomandibular joint and surrounding muscles can result in temporomandibular disorders and craniofacial pain. Psychological implications such as anxiety and sleep disturbances may also arise due to the chronic nature of this condition.

Accurate diagnosis of awake bruxism is paramount for effective management. Self-report questionnaires, clinical assessments, and polysomnography play integral roles in diagnosing this condition. Patient interviews and dental examinations aid in identifying dental wear, muscle tenderness, and temporomandibular joint dysfunction. Polysomnography provides valuable insights by recording electromyographic activity, jaw movements, and audiovisual data during sleep. Combining these diagnostic tools enhances the precision of identifying awake bruxism and differentiating it from sleep bruxism.[9–11]

Management of awake bruxism encompasses a multidisciplinary approach. As the field continues to evolve, collaborative efforts between dental professionals, sleep medicine specialists, psychologists, and physical therapists aim to provide holistic management. Behavioral interventions, stress reduction techniques, and cognitive-behavioral therapy (CBT) can address underlying psychological triggers. Pharmacological interventions, such as muscle relaxants and anxiolytics, may be considered in severe cases. Occlusal splints or nightguards, fabricated by dental professionals, offer protective measures against dental wear and muscle strain. Patient education regarding lifestyle modifications, relaxation exercises, and proper sleep hygiene can also contribute to successful management.[12,13]

Cognitive-behavioral therapy (CBT) has shown promise in addressing the underlying anxiety and stress that often exacerbate bruxism episodes. CBT helps patients develop coping strategies, manage triggers, and modify maladaptive behaviors. Relaxation techniques, mindfulness meditation, and biofeedback training are valuable tools to reduce stress and promote overall well-being.[14,15]

Sharing expertise and insights can lead to tailored treatment plans that address the condition's oral health and psychological components. Regular communication among healthcare providers ensures a well-rounded approach to patient care.[16,17]

Advances in technology offer new avenues for understanding and managing awake bruxism. Wearable sensors can monitor jaw movements, muscle activity, and sleep patterns, providing real-time data for diagnosis and treatment monitoring. These devices can raise patient awareness by providing immediate feedback about bruxism episodes. Integrating artificial intelligence and machine learning algorithms may enable predictive models to anticipate and prevent bruxism episodes based on individualized patterns.

Long-term monitoring and follow-up are crucial aspects of awake bruxism management. Regular dental check-ups enable the assessment of dental wear, occlusal changes, and the effectiveness of protective measures such as nightguards. Periodic evaluation of psychological well-being and stress levels ensures that interventions remain tailored to the patient's evolving needs. Longitudinal studies tracking the progression of bruxism and its potential impact on quality of life can provide valuable insights into the efficacy of various management strategies.[18–20]

Ethical considerations come to the forefront when managing awake bruxism. Informed consent is essential when recommending

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interventions, and patients should be educated about each approach's potential benefits, risks, and limitations. Patient autonomy should be respected, and treatment decisions should be made collaboratively, considering individual preferences and values.

Awake bruxism remains a challenging condition requiring a comprehensive, patient-centered approach.[21–23] Advances in understanding its etiology, diagnostic methods, and interdisciplinary management strategies hold promise for improving patient outcomes. By fostering collaboration among healthcare professionals, promoting patient education, and harnessing technological innovations, the field is poised to provide more effective and personalized solutions for individuals affected by awake bruxism. Continued research and clinical advancements will contribute to a deeper comprehension of this complex condition and ultimately enhance the quality of life for those affected.

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