

Nocturnal Oral Movements in a Patient with Schizophrenia

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A 61-year-old man with history of schizophrenia, generalized tonic clonic seizure disorder, and hypertension who lives in a skilled nursing facility presented with snoring and gasping for air during the night. The patient's care staff reports no abnormal nocturnal behaviors, and no generalized seizures in the last 5 years. His medications include haloperidol, olanzapine, benzotropine, valproic acid, levetiracetam, trazodone, sertraline, lisinopril, and aspirin.

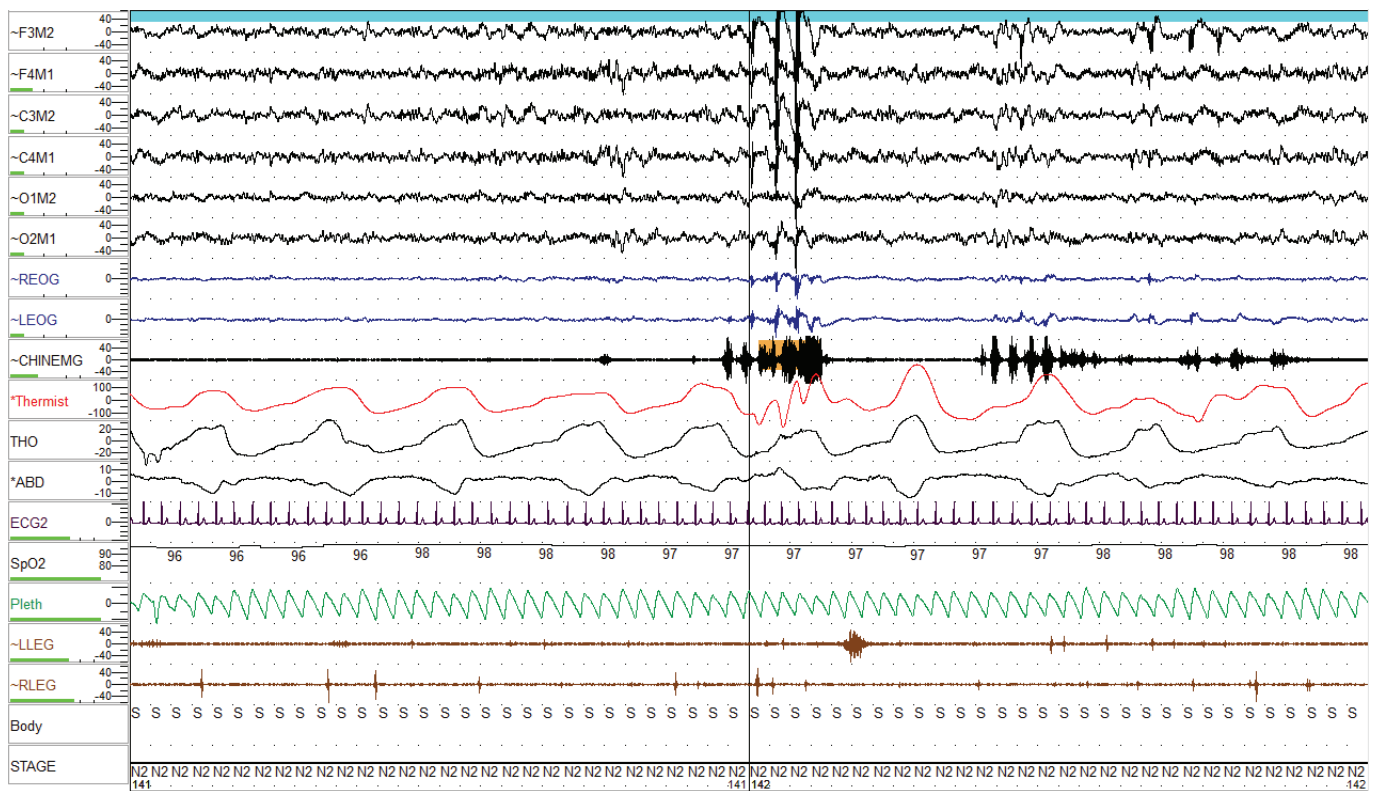
On physical examination, his body mass index was 22 kg/m². Neither masseter muscle hypertrophy nor temporomandibular joint pain was noted. The patient was edentulous without gum lesions; he did not wear dentures. No movements of the tongue were noted

with the mouth open, and patient was able to sustain tongue protrusion for longer than one minute. Neither facial grimacing nor limb dyskinesia was noted. The oral airway was Mallampati IV.

Polysomnogram revealed an apnea-hypopnea index of 7 with a sleep efficiency of 98%. Unusual chewing movements were noted during NREM sleep (**Video 1, Figures 1, 2**). These movements were not associated with sleep disordered breathing. No audible grinding was noted on video.

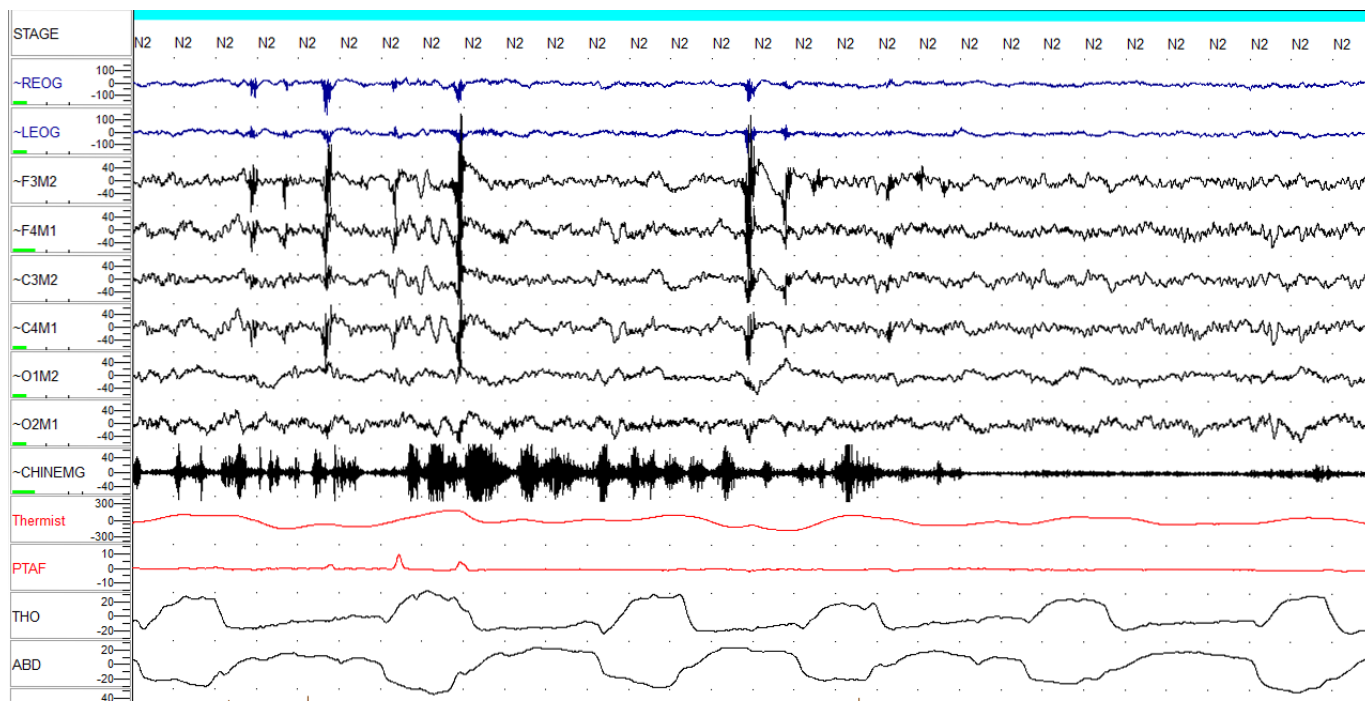
QUESTION: What is the most likely diagnosis for the movements shown in Video 1?

Figure 1—One-minute polysomnogram segment corresponding to Video 1



This image shows elevated chin electromyography tone associated with oral movements during sleep stage N2.

Figure 2—30-second polysomnogram epoch showing elevated chin electromyography (EMG) tone associated with oral movements during sleep stage N2



Note the relatively minor electroencephalography artifact in comparison to the prominent EMG changes, this may represent lack of scalp muscle involvement.

ANSWER: Edentulous oral dyskinesia**DISCUSSION**

Oral dyskinesia consists of involuntary movements of the lips, tongue, and jaw. They are classified according to cause and movement description.¹ Oral dyskinesia has been reported in up to 16% of edentulous patients and is most commonly seen in those with poor oral health, oral pain, ill-fitting dentures, or without dentures.² Edentulous oral dyskinesia (EOD) is thought to be associated with loss of the tooth and periodontal ligament proprioceptive input.³

Oral dyskinesia is also associated with dopamine antagonist neuroleptic use (i.e., tardive dyskinesia), choreatic neurodegenerative diseases (e.g., Huntington disease), and basal ganglia lesions. Dyskinesia of EOD is limited to the oral area, while dyskinesia associated with the neuroleptic medications or neurodegenerative disorders are more widespread involving the face, trunk, and extremities. Tardive dyskinesia is an extrapyramidal movement secondary to neuroleptic medications that cross the blood brain barrier and inhibit central D2 receptors producing choreoathetoid movements in the oral-buccal-lingual muscles, face, limb, and trunk.

Similar to neuroleptic medication induced/tardive dyskinesia, EOD may have involuntary protrusion of the tongue. In contrast to EOD, those with tardive dyskinesia are usually unable to maintain voluntary prolonged tongue protrusion without involuntary retraction. Tardive dyskinesia movements are exacerbated by emotional arousal, decrease with relaxation, and disappear with sleep.⁴

Repetitive oral movements during sleep including lip smacking, mumbling, or chewing may also occur in seizure disorder. The lack of an electrographic correlate, the absence of daytime seizures, and the absence of generalized seizures for 5 years make the diagnosis of nocturnal seizures less likely in our patient.

Figure 2 shows a 30-second epoch depicting the polysomnographic features of the oral movement, which meet many of the criteria for bruxism in the American Academy of Sleep Medicine Scoring Manual (rhythmic masticatory muscle activity form). Chin EMG amplitude is twice the background EMG amplitude, each event is between 0.25-2 seconds, and more than three EMG elevations occur in sequence. The last criterion of a minimum of two episodes of audible tooth grinding was not met.⁵

The movements do not meet International Classification of Sleep Disorders 2nd edition (ICSD-2) criteria for sleep related bruxism. Given that the patient is edentulous, tooth-grinding noises during sleep, tooth clenching during sleep, and abnormal tooth wear are not possible. The patient denies jaw muscle discomfort upon awakening, and no masseter muscle hypertrophy was noted with jaw clenching. In the elderly, the prevalence of bruxism may be as low as 3%.⁶

SLEEP MEDICINE PEARLS

1. Tardive dyskinesia disappears with sleep.
2. The ICSD-2 criteria for bruxism technically require the presence of teeth.
3. Oral dyskinesia is common in edentulous elderly patients and may persist during sleep.

CITATION

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