Tooth Luxation as the First Clue to an Epilepsy Diagnosis

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Keypoints

What is known:

- Epilepsy is associated with an increased risk of physical injury.
- Oral and dental traumatic injuries are a common result of generalized tonic-clonic seizures.

What is added

- Epilepsy should be considered in the differential diagnosis of tooth injuries without the context of trauma.
- Prophylactic measures, such as custom-made mouthguards, should be provided to these patients to prevent hard and soft tissue injuries.

Introduction

A previously healthy 13-year-old female was admitted to the emergency room after awakening with gingival hemorrhage and pain in the oral cavity. She had metal braces and denied recent dentist visits or local trauma. Physical examination was unremarkable, except for a lateral luxation of teeth number 32, 31, 41, and 42, with swelling and bruising of the surrounding gingiva, without active hemorrhage (Fig. 1).

After pain control, the patient was discharged with a recommendation for urgent evaluation by a dentist. Hours later, after being found by her parents having, as they described, a tonic-clonic generalized seizure, she was reassessed in the emergency room. The event occurred during a nap and ceased spontaneously after approximately two minutes, with gradual and complete recovery of the usual state of consciousness.

No significant past medical history was reported, particularly regarding her motor and neurodevelopment. Additionally, no family history of epilepsy was reported. Moreover, episodes of trauma and substance abuse were denied. She also had no fever or additional symptoms. Physical examination, including neurological evaluation, was unremarkable except for a tongue bite and the aforementioned dental arch anomalies.

Results of blood tests (glucose, ionogram, venous blood gas, and C-reactive protein) and brain computed tomography scan was normal. The patient was admitted and, during hospitalization, was found having another generalized seizure during sleep. Electroencephalogram revealed inter-critical left frontotemporal and bilateral paroxysmal activity in wakefulness and non-rapid eye movement sleep.

Given the most likely diagnosis of focal epilepsy with unknown onset bilateral motor tonic-clonic seizures, levetiracetam (20 mg/kg/day) was initiated and no additional seizures were reported. The teeth were repositioned and then contained with a semi-rigid splint that was later removed, allowing for a new orthodontic plan. The patient was later discharged and referred to neuropediatric and stomatology consultations in her country of residence.

Epilepsy is one of the most common neurological disorders during childhood and is ordinarily associated with an augmented risk of physical injury.[1] Orodental trauma is a frequent result of generalized tonic-clonic seizures, with the lips and tongue being the most commonly injured.[1] Dental apparatus showcase is damaged in less than 1% of seizures, and the maxillary and mandibular anterior teeth are the most frequently affected.[2,3] The presented case represents an exuberant

Figure 1. Lateral luxation of teeth 32, 31, 41 and 42 with swelling and bruising of the surrounding gingiva.

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dental luxation in the context of an unwitnessed seizure and purports to underscore the idea that tooth injuries without the context of trauma in pediatric age should raise suspicion of “hidden” seizures.

Keywords: Adolescent; Epilepsy/complications; Epilepsy/diagnosis; Seizures/complications; Tooth Injuries/etiology

Author Contribuitions

SNM and CGP participated in acquisition of data. SNM and FDF participated in the drafting of the manuscript. FDF, CGP and CM participated in the critical revision of the manuscript. All authors approved the final manuscript and are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of Interest

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The authors declare that they have followed the protocols of their work center on the publication of patient data.

Consent for publication

Consent for publication was obtained.

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