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Case Report

A boy infant with sleep related rhythmic movement disorder showing arm banging

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ABSTRACT

Objective: To present a male patient who performed arm banging on his face during sleep every night since 7 months of age.

Methods: Clinical course of this patient with electroencephalographic recording with video recording at 23 months of age was shown.

Results: His arm banging began at the age of 7 months and showed no complete remission at the age of 57 months of age, although clonazepam revealed mild effects on its intensity and frequency.

Discussion: We diagnosed him as having arm banging type of sleep related rhythmic movement disorder. To our knowledge, no precise description on this type of sleep related rhythmic movement disorder has been found. In addition, this patient seemed to be the youngest case of sleep related rhythmic movement disorder showing arm banging.

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1. Introduction

In sleep related rhythmic movement disorder (RMD), the International Classification of Sleep Disorders Version 3 (ICSD3) [1] describes three typical subtypes (body rocking, head banging, and head rolling), and less common forms of body rolling, leg banging, and leg rolling. Vetrugno and Montagna [2] described in their review on RMD that the whole body or parts of it, such as the hands, arms, or legs, may also be rolled and rocked repetitively. However, involvement of the arms or hands in RMD has not been described by the ICSD3 [1]. In addition, to our knowledge, no precise description on RMD of arm banging type has been found. We here describe a 2-year-old male patient who performed

arm banging on his face during sleep every night since 7 months of age.

Written consent was obtained from the parent of the patient for publication of this study.

2. Patient's medical reports

Our patient was an otherwise healthy first boy from healthy non-consanguineous parents. Except for his mother, family history is not remarkable. His mother has been of recurrent episodes of involuntary eating and drinking during arousals from sleep, associated with diminished levels of consciousness and subsequent recall since her twenties. She is not

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diagnosed as having sleep related eating disorder [1], because she has no problematic consequences of these episodes.

The boy was born at 40 gestational weeks, and weighed 3725 g after an uneventful pregnancy. Since 7 months of age, he has exhibited arm banging on his face every night. An electroencephalogram (EEG) performed at a university hospital showed no abnormal findings. The banging usually involves each side of his arm, but sometimes occurs bilaterally simultaneously. He hit his face with the fist or the palm of his each arm. Because this banging resulted in hitting his face or even his eyes, his parents watched him, and prevented him from hitting himself by putting their arm in front of his face. This has caused sleep deprivation in the parents.

When he was 23 months of age, EEG recording with video recording was performed from 19:40 to 2:01 at another university hospital. We succeeded in obtaining video recordings of three episodes at 21:53 (80 s), 23:14 (110 s), and 0:05 (110 s). Each episode composed of banging of 1–2 Hz without accompanying epileptic discharges. The first episode appeared to begin from sleep stage 1 (N1) and the sleep stage appeared to return to N1 after the episode. The sleep stage just before the second episode was N3 (Fig. 1) and the sleep stage after the episode appeared to be N1 (Fig. 2). The EEG recording before and after the third episode was insufficient to determine the sleep stage. No abnormal findings were obtained on this EEG recording. No snoring was observed. Laboratory examinations and magnetic resonance imaging of his brain showed no obvious abnormalities.

At 51 months of age, no obvious physical abnormalities were found. Kamפו (yokukansan) showed no effect but

clonazepam (0.1–0.2 mg) showed favorable effects on the intensity and frequency of arm banging. We have attempted to increase the dose of clonazepam gradually, but no complete remission has been obtained at the age of 57 months of age.

3. Discussion

RMD is also described as jactatio capitis nocturna, jactatio corporis nocturna and rhythmie du sommeil [1]. The clinical manifestation of our patient is compatible with RMD, except for the movement involved. Involuntary jerking movements of the arms and torso have been recently reported in a neurologically unaffected 10-year-old girl while recovering from general anesthesia [3]. Su et al. reported [4] a 15-year-old boy who presented with multiple complex rhythmic movements during sleep, including bilateral rhythmic arm rocking and rhythmic hand movements. To the best of our knowledge, our patient is the youngest case of RMD showing arm banging.

Several RMD patients showed symptoms before 3 months of age [5]. The current patient showed his first symptoms at 7 months of age. Interestingly, repetitive arm and hand banging during wakefulness is reported in infants aged 9 months of age or older [6]. Neuronal pathways involved in arm banging may be active during infancy.

According to the ICSD3 [1], injury to soft tissues or bone has been reported in patients with RMD. Fortunately, our patient has not suffered from such complications. However,

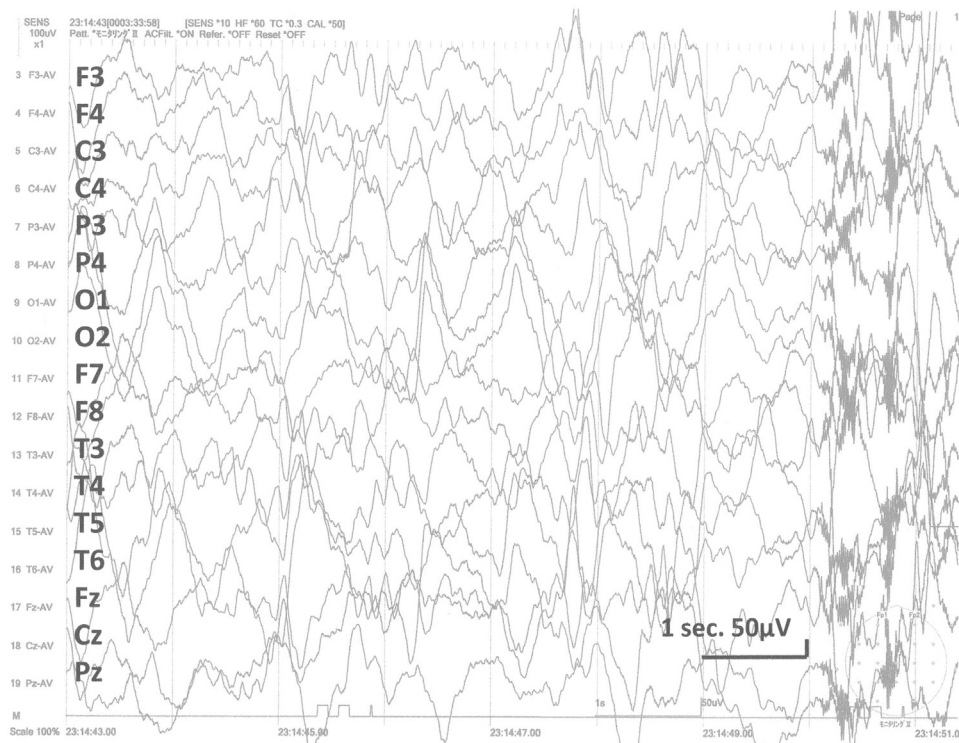


Fig. 1 – EEG recordings just before the second episode. Dominant waves are high voltage slow waves and the sleep stage was determined as N3.

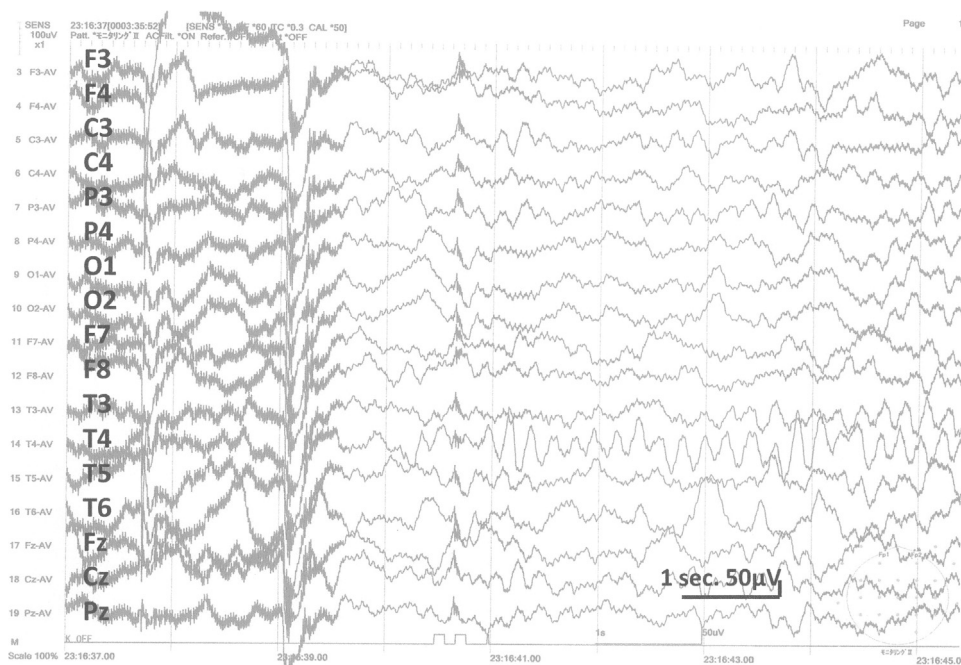


Fig. 2 – EEG recordings just after the second episode. We determined this stage as N1.

his parents were afraid of him hitting his eyes. Their concern kept them awake during the night to protect their son's eyes from arm banging. Although we failed to propose an idea to address the concerns of the parents of this patient to restore their sleep, staff involved in child sleep should investigate ways to solve their concern.

Clonazepam showed mild effects on this patient, although its universal effectiveness on RMD has not been approved [2].

A familial pattern has been reported rarely in this clinical concept, as has occurrence in identical twins [1]. The association of sleep related eating episodes of his mother and the boy's sleep related arm banging remains to be elucidated.

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