

Jactatio Corporis Nocturna and Dissociative Disorder: A Case Report

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SUMMARY

Jactatio corporis nocturna is a type of parasomnia. Rhythmic body movements during sleep are commonly observed in infancy and early childhood, and spontaneous resolution is expected after the age of 4 years. Rarely, the body movements persist until adulthood. Rhythmic body movements characteristically occur during the wake-sleep transition period, rather than during other sleep stages. Some psychiatric diseases can co-occur with sleep-related movement disorders. A relationship between parasomnias and dissociative disorders has been recently reported.

Herein we present a 33-year-old male with nocturnal repetitive rolling body movements and daytime fatigue. The patient also had loss of memory of some important events (such as the day his daughter underwent surgery), and reported that he sometimes confused reality with dreams had fantasies during which he experienced his spirit rising above to watch his body and fantasy. Detailed neuropsychological assessment showed that the patient also had a dissociative disorder. Video-polysomnographic recordings showed repetitive, rolling body movements that occurred only during rapid eye movement (REM) sleep.

Keywords: Parasomnia, sleep related movement disorder, dissociative disorder

INTRODUCTION

Jactatio corporis nocturna (JCN) is a sleep-related rhythmic movement disorder (SRMD) (ASDA, 2005). SRMDs are characterized by slow and consistent rhythmic movement of different muscle groups. According to International Classification of Sleep Disorders (ICSD-2), SRMDs in children are defined as sleep drunkenness, or repetitive stereotypic and rhythmic motor behaviors. Rhythmic movement can begin at any time of the night, but primarily at sleep onset; the movements last 0.5-2 s and end in less than 15 min (Kempnaers et al. 1994). The prevalence of SRMDs is higher in small children and infants, and at other ages it was reported to coexist with mental retardation, autism, or other common developmental disorders (Newell et al. 1999). Mayer et al. (2007) reported 24 cases of SRMD that persisted

until adolescence and adulthood. Among 20 adults, in 16 the onset of SRMD was during childhood.

Some psychiatric diseases may be comorbid with sleep disorders and are associated with an increase in their prevalence. The relationship between traumatic events in childhood, and dissociative disorders and sleep disorders has been reported (Ağargün et al. 2002), as has an association between dissociative disorders and sleep disorders such as parasomnia (Thorpy and Plazzi 2010). In patients with dissociative disorders electroencephalographic (EEG) changes occur during non-rapid eye movement (NREM) sleep, primarily during the first half of sleep. There are few case reports of the occurrence of rhythmic movement during REM (rapid eye movement) sleep (Andersen et al. 2006). Herein we present an adult patient diagnosed with a dissociative disorder that had symptoms of JCN during REM sleep.

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CASE

History

A 33-year-old male patient presented to our sleep disorders center with complaints of repetitive rolling movements involving the entire body during sleep and daytime fatigue. In addition, he complained of daytime fantasies for relaxation. He reported that he would enter a room and lay down, rolling his body to both sides and imagining a fantasy; while he played in the fantasy his soul rose and watched his fantasy and body from above. He also reported that he sometimes experienced the feeling of dissociation and of watching himself while he was doing other things. The patient reported that he did not lose his sense of reality during the reported dissociation. He had both a good and bad self with the same name, none was dominant to other, but they were in continuous conflict, which tired him a lot. Sometimes, these selves were completely silent. He reported that he was absent minded at times, did not always hear everything that was said to him, and did not remember some important events (e.g. the day his daughter underwent surgery). He also noted that the symptoms he reported were very disturbing and that he was sometimes not sure whether or not he actually experienced an event or saw it in a dream.

The rhythmic and repetitive movements—mostly in the form of rolling his body to the right and left while asleep or during the transition to wakefulness—began when he was 1.5 years old. During adolescence the rolling movements occurred during daytime when his mood was low. The body movements occurred 4-5 times each night only during sleep and the patient had no memory the movements. The patient reported that he presented to our clinic because his children were afraid of his body movements. He had normal psychomotor development and his family history was negative for epilepsy and other neurological disorders, sleep disorders, and psychiatric disorders.

Clinical evaluation

Physical and neurological examination at presentation was unremarkable, and all laboratory investigations were normal. Video-electroencephalography (VEEG) did not show evidence of epileptic activity. Psychiatric examination showed the presence of anxiety, depersonalization, derealization, and dissociative amnesic processes. Based on the SCID-D (Structured Clinical Interview for DSM-IV Dissociative Disorders), he was diagnosed as NOS dissociative disorder. His Hamilton Depression Rating Scale score was 11, Dissociative Experiences Scale score was 32, and Childhood Trauma Scale scores were as follows: emotional abuse score: 4.8; physical abuse score: 1.8; sexual abuse score: 1. The patient's Epworth Sleepiness Scale and Sleep Index scores were normal, whereas

his Pittsburgh Sleep Quality Index score indicated impaired sleep quality.

Polysomnography (PSG)

Video-polysomnography (V-PSG) was performed 2 nights using a standard electroencephalogram (EEG) montage and Embla N7000 recording system (F8, F4, C4, T4, T6, P4, O2, F7, F3, C3, T3, T5 P3, and O1), electrooculogram (EOG), electrocardiogram (EKG), under jaw electromyogram (EMG), and anterior tibialis EMG from both legs. Respiration was recorded via inductive plethysmography of the chest and abdomen, and oronasal flow and pulse oximetry. Sleep stages were scored according to American Sleep Medicine Academy criteria (ASMA 2007).

Polysomnographic records showed that rhythmic body movements occurred during each REM sleep period. The body rolling movement during REM sleep is seen as a 60-s cycle in the Figure. The frequency of the movement was 0.5-2.0 Hz, and overall duration of the movement was calculated to be 10 min during 1 night. During sleep, other sleep-related rhythmic movement disorders, including sleep apnea and periodic leg movements were not observed. Based on these findings, the patient was diagnosed as JCN, and melatonin 3 mg d⁻¹, clonazepam 1 mg d⁻¹, and paroxetine 20 mg d⁻¹ were initiated. Psychotherapy was not administered. At follow-up 4 weeks after the onset of treatment the patient reported that discomfort and internal conflicts were relieved, but that the symptoms of JCN remained the same.

DISCUSSION

Some psychiatric diseases can be comorbid with sleep disorders and/or increase their frequency. A link between childhood trauma, and dissociative disorders and sleep disorders has been proposed (Thorpy and Plazi 2010). Kempenerars et al. (1994) were the first to report comorbid depressive disorder and borderline personality disorder in a 34-year-old patient with parasomnia. Mayer et al. (2007) reported that they observed psychiatric disorders, such as ADHD, depressive disorder, and borderline personality disorder in 6 of 24 patients with REM behavioral disorder (RBD) aged 11-66 years. The presented patient had JCN and normal neuropsychiatric findings, except for high DES and CTQ-28 scores, and the diagnosis of a dissociative disorder based on SCID-D; to the best of our knowledge this is the first reported case of an SRMD comorbid with a dissociative disorder.

In some patients SRMDs persist until adolescence and adulthood (Stepanova et al. 2005; Su et al. 2009). SRMDs occur at the rate of 46% during NREM sleep or sleep-awake transition, 30% during both NREM and REM sleep, and 24%

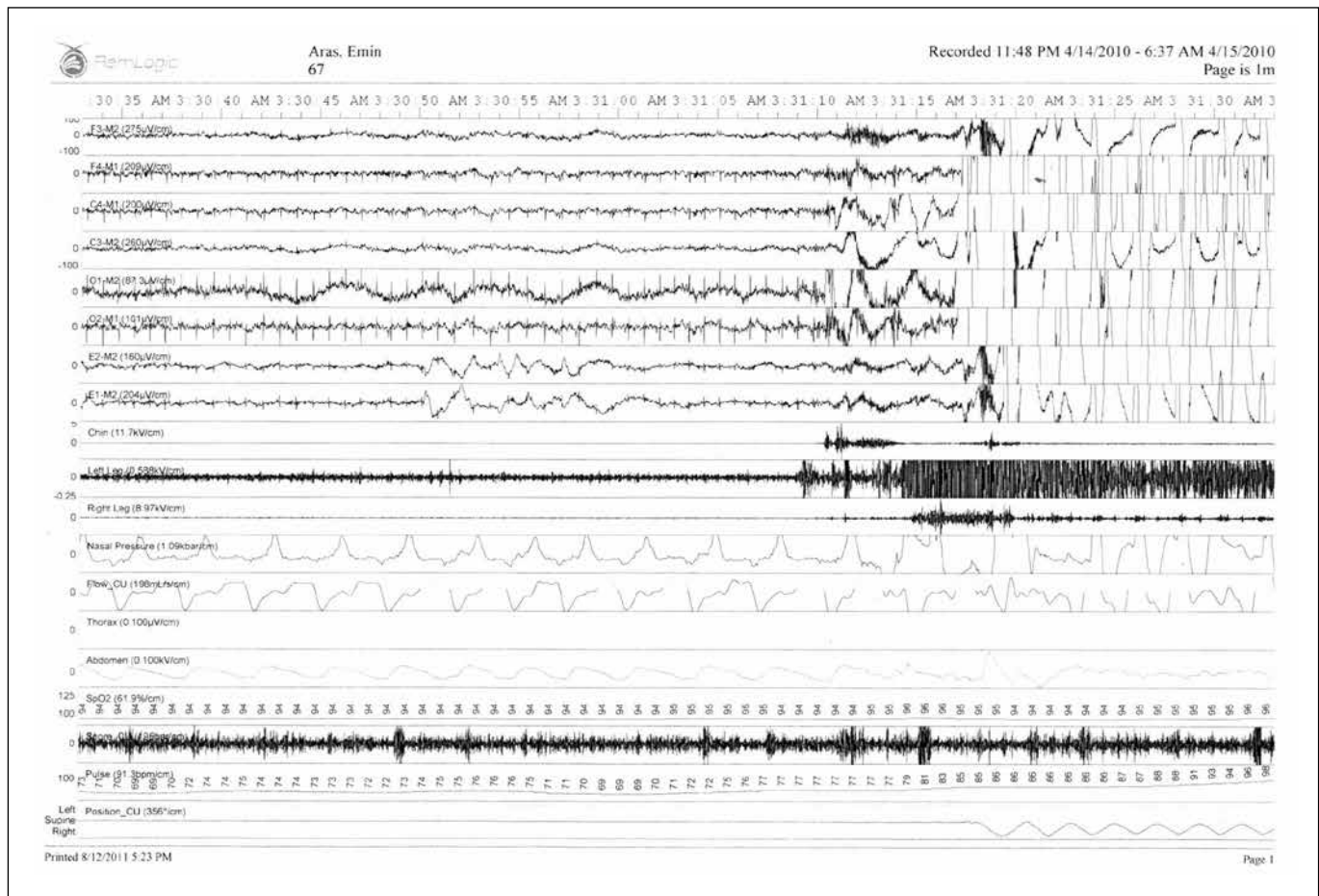


Figure. Polysomnographic recording. The onset of body rolling during REM sleep and range of duration (20-94 s).

during REM sleep (Kohyama et al. 2002). It was reported that in 5 of 24 SRMD patients (20.8%) movement occurred during REM sleep (Mayer et al. 2007). Kempenerars et al. described a patient with an SRMD in which movements occurred during various stages of sleep, but primarily during REM sleep. In the presented 33-year-old patient body movements occurred at the onset of REM sleep, but not during other stages of sleep.

According to Mahowald and Schenck (1991) RBD is a dissociative condition. The characteristic polysomnographic findings in patients with RBD are loss of tonus during REM sleep, and complex, frequently violent behavior that occurs in concert with the content of dreams. Patients with SRMDs sleep, but frequently awake and remember their dreams (Fantini et al. 2005). Differentiation of SRMD from RBD in the presented case was easy, as there were no complex behaviors, such as activation of dream content or remembering dreams.

During the formation of REM sleep various neuron groups—from the cerebral cortex to spinal cord—are functioning (Nofzinger et al. 1997). During REM sleep activation occurs in the limbic and paralimbic regions, including

the lateral hypothalamus, amygdala, and striatal regions, and in the orbitofrontal, cingulate, entorhinal, and insular layers in hippocampus and amygdala, which are key structures involved in sensory gating, sensory information processing, content analysis, and comparison of present experiences with past experiences. Whereas the hippocampus and associated medial temporal lobe memory system evaluate environmental stimuli and the content associated with them, the amygdala facilitates matching of external stimuli with internal stimuli relevant to emotions and emotional conditioning (Ünal 2003). In dissociative states perfusion changes occur, particularly in the hippocampal and orbitofrontal regions (Şar et al. 2007). In addition, the effect of childhood trauma on neurodevelopmental processes comes into play via decreasing bilateral perfusion in the orbitofrontal region (Thorpy and Plazzi 2010). According to one hypothesis, SRMDs emerge via a learned compensation mechanism for reducing stress and tension (Kempenaers et al. 1994). This hypothesis is also valid for dissociation (Ağargün et al. 2002). We think that there may be some overlap in the development and brain regions involved in both SRMDs and dissociative disorders.

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