Case Report
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A Case with Dopamine-Antagonist Responsive Repetitive Head Punching as Rhythmic Movement Disorder during Sleep

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We reported a 17-year-ole male presented with repetitive head punching as rhythmic movement during sleep. Rhythmic movement disorder (RMD) during sleep refers to a number of activities characterized by repetitive stereotyped movements such as rhythmic oscillations of the head, limbs, or body. The repetitive movement like punching on the head in our case is a rare form. The patient's symptom was dramatically aggravated by dopamine agonist and responded well to dopamine antagonist. It is the first case report of dopamine-antagonist responsive repetitive head punching as rhythmic movement during sleep. **(2013;3:74-75)**

Key words: Head punching, Rhythmic movement disorder during sleep, Dopamine antagonist

Case report

A 17-year-old male presented with recurrent rhythmic movement since the age of five. He repetitively tapped his brow or chin with the right fist only during sleep. The duration of this rhythmic movement ranged from 10 seconds to five minutes. Sometimes he repetitively punched the brow hard enough to render skin reddish discoloration. This behavior recurred almost every day. Upon admission, video-EEG monitoring demonstrated that the patient struck his brow with the right fist for one minute during the light sleep. The frequency of tapping during the monitoring was 2 Hz. There was no EEG change. Previously, under the impression of frontal lobe complex partial seizure, various ant-epileptic drugs including oxcarbazepine, zonisamide, levetiracetam and clobazam had been administered to control this symptom without any significant improvement. With the diagnosis of the rhythmic movement during sleep, clonazepam was prescribed before night time sleep. The dose of clonazepam was increased up to three mg per day. Clonazepam could not alter the symptom and induced only daytime drowsiness as an adverse event. Levodopa 250 mg plus carbidopa 25 mg were administered as a therapeutic challenge. Surprisingly this rhythmic movement increased dramatically in intensity and duration. The patient more or less violently punched his brow for four or five hours every night. With the hint of aggravating symptom by dopamine-agonist, haloperidol was chosen. One mg of haloperidol could markedly suppress the symptom to one-tenth degree in the intensity and duration compared with the symptom of the initial presentation. To avoid long-term adverse events, haloperidol was switched to pimozide two mg just before the night time sleep. After five days of administration, the rhythmic movement was completely disappeared for the following two months. The symptom reappeared after two months. However, the intensity was very mild and the duration was very short, which the parents could not notice the movement without careful observation for a whole night.

Discussion

Rhythmic movement disorder (RMD) during sleep refers to a number of activities characterized by repetitive stereotyped movements such as rhythmic oscillations of the head, limbs, or body with the frequency 0.5-2 Hz. It usually involves large muscle groups. The typical rhythmic movement is head banging or body rocking which is most often seen in childhood and rarely in adults.

Rhythmic movement may occur in any stage of sleep, but most commonly during drowsiness and light sleep.[1] Four common types of RMD are head banging (head movement in a back and forward directions), head rolling (head movement in lateral directions), body rocking (to and fro movement of the whole body), and body rolling (the whole body movement in lateral directions). The repetitive movement like punching on the head in our case would be a rare

form. There was a report of two cases in which typical rhythmic head banging after 3-4 years shifted to atypical head banging with frontal head punching what was quasi-rhythmic.[2] Frequency of RMD can be variable, but generally ranges from 0.5 to 2 Hz.

RMD should be diagnosed differentially from nocturnal seizures, especially transient hypermotor seizures which could be seen in frontal lobe complex partial seizures (FLCPS). EEG abnormalities, more violent and short duration of FLCPS can be helpful.

RMD is common in childhood. It usually resolves by four years of age,[3] but may rarely persist into adulthood as our case.[4] However, a recent large polysomnography study demonstrated that RMD persisted into adulthood in many patients.[4,5] The new onset of RMD during adulthood may be also possible. RMD specifically associated with REM sleep can occur in children[6-8] and persist into adulthood.[9] RMD is usually not associated with underlying psychiatric disorders except minor relationship with autism, attention deficit disorder, or anxiety disorder.[8,10]

The treatment of RMD is usually not necessary. Reassurance is helpful to alleviate concerns of parents. However, sometimes, head protecting gear is needed to prevent injury, especially in the head banging type. Benzodiazepine such as clonazepam,[10-13] levodopa or dopamine agonists, and tricyclic antidepressants have been tried with variable success.[14] Our case showed marked aggravation of symptoms with dopamine agonist, which is the first report for RMD. Conversely dopamine antagonist such as haloperidol and pimozide could alleviate RMD in our case. When encountering intractable RMD without response to other drugs, dopamine antagonist may be worthwhile trying to control the symptom.

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