대한간질학회지 2004;8(2):160-162

# 연소성 결신발작 1예에서 보인 정신운동성 이형파 : Gibbs에 의한 오칭의 증거

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# Psychomotor Variant in a Case of Juvenile Absence Epilepsy : An Evidence of Misnomer by Gibbs

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The psychomotor variant is a rare EEG pattern as a rhythmical activity at about 6 Hz that may occur in brief or longer runs, independently in the temporal areas during drowsy mental state. It was originally named by Gibbs and Gibbs because of its existence during the ictal or interictal period in patients with psychomotor seizures. We report a 14-year-old girl with juvenile absence epilepsy who showed the long runs of psychomotor variant followed by generalized ictal discharges. (J Korean Epilep Soc 2004;8(2):160-162)

**KEY WORDS** : Psychomotor variant · Juvenile absence epilepsy · EEG.

The psychomotor variant is a rare EEG pattern, which is found in only 0.3 to 0.5% of patients referred for EEGs.[1-3] It consists of rhythmical activity at about 6 Hz that may occur in brief runs of few seconds, or more commonly in longer runs, lasting 5 to 10 seconds, or occasionally continuous, lasting several minutes, independently over the temporal areas in drowsiness.[1] It was originally described by Gibbs and Gibbs because it occurred in the temporal regions and had a superficial resemblance to some of the activity that may occur during psychomotor seizures.[1-6] Despite its strongly paroxysmal appearance, its epileptogenic property has not been known yet. It can be associated with epileptic seizures, usually complex partial or generalized tonic clonic seizure, in 26 to 36% of persons who have psychomotor variant.[1-3,7] However, it occurs in only 1% of patients with epilepsy or a question of epilepsy.[8]

We report a patient with juvenile absence epilepsy who showed long runs of psychomotor variant followed by ictal generalized epileptic discharges, which prove the term 'psychomotor variant' is a misnomer.

## Case Report

A 14-year-old girl had frequent lapses of consciousness with oroalimentary automatism for one year. She abruptly ceased ongoing activities, and was motionless with a fixed blank stare accompanying chewing. These episodes lasted for 20 to 30 seconds. They occurred 2 to 3 times daily. She did not have any history of febrile convulsion, head trauma or generalized tonic-clonic seizures, and did not suffered from headache, dizziness, syncope or psychiatric disorders. She is an only daughter. There was no family history of epileptic seizures. Medical history was otherwise unremarkable and physical and neurological examinations were normal. Brain MRI and routine laboratory tests were normal.

An EEG recording was performed on a 14-channel Nihon

Received 5 November 2004
Accepted 11 November 2004
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Kohden paper electroencephalograph using the international 10−20 system for the electrode placement. Thirty minutes waking EEG including photic stimulation, 3 minutes of hyperventilation, and 2 minutes of posthyperventilation was done twice before the antiepileptic medication was started. The EEG showed frequently brief or long runs of unilateral or bilateral rhythmic notched 6 Hz waves in anterior, middle and posterior temporal areas during awakening or drowsiness. This activity was always bilateral and prolonged as several dozens of seconds during the hyperventilation and posthyperventilation period (Fig. 1A). No clinical episodes occurred with this activity. Second EEG revealed an episode of bilateral psychomotor variants lasting for 10 seconds followed by ictal 3-per-second spike and wave discharges during hyperventilation (Fig. 1B). During the ictal period, she had a blank stare with chewing. She then regained her consciousness immediately. The clinical seizures and epileptic discharges on EEG were all disappeared after valproate therapy (1,500 mg/day). Follow-up EEG after the valproate therapy was recorded four times for one and a half years. Even though the clinical seizures and epileptic discharges were disappeared after the valproate therapy, the psychomotor variant continuously appeared in serial EEGs.

## Discussion

The incidence of psychomotor variant in patients with absence seizure or 3-per-second spike and wave discharges is very rare. Among patients with 3-per-second spike and wave discharges of absence type, its incidence was 0.36%.[1] This study did not describe the epileptic syndrome of the patients even though whose epileptic discharges are 3-per-second spike and wave. Therefore, we do not know how many patients have absence epilepsy. Moreover, there have been no absence epilepsy reported among persons with psychomotor variant.[1,3,8] We fortunately got an EEG which had the psychomotor variant and 3-per-second spike and wave discharges associated with obvious epileptic syndrome.

The mechanism of the occurrence of psychomotor variant in EEG has not been fully elucidated and its epileptogenic property has been unknown yet. Is it an ictal epileptic discharge? Hughes and Cayaffa reported patients with a prolonged, rhythmic psychomotor variant, which was associated with 'floating sensation' and 'heavy feeling in the head'.[6] In

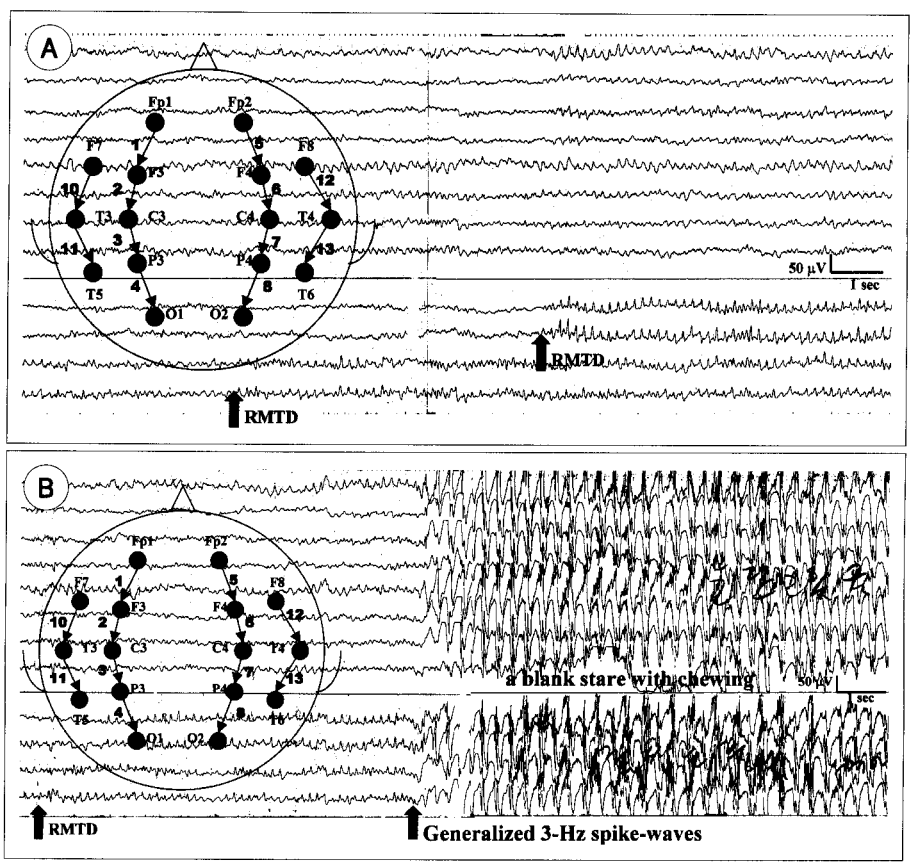


**Figure 1.** Psychomotor variant during hyperventilation. The EEG shows long runs of bilateral rhythmic notched 6 Hz waves in anterior, middle and posterior temporal areas (A). Long runs of bila-teral psychomotor variants are followed by ictal generalized 3-Hz spike-waves (B). The patient shows a blank stare with chewing during ictal discharges.

addition, they showed a significantly diminished responsiveness to a flashlight. Based on these observations, the authors suggested a possible ictal character for the discharge. However, they did not determine it had any clinical significance, because it usually was seen during drowsiness. In our patient, the psychomotor variant should not be ictal epileptic discharges, because, unlike other ictal epileptic discharges, its appearance was invariable from beginning to end and not followed by slow waves. Moreover, she did not show any behavioral changes or other objective signs and actively responded when she was asked to open her eyes with its simultaneous involvement of both hemispheres. Another evidence which is not an epileptic discharge, is the existence of this phenomenon during complete disappearance of clinical seizures and epileptic discharges by valproate therapy.

The psychomotor variant is most evident during drowsiness, but in 10% of the cases it also appears in the waking state.[1] Our patient showed this pattern in both stages. It can be associated with a wide range of neurovegetative symptoms such as headache, dizziness, syncope, and vomiting, and various psychiatric disorders.[1-3,7,8] It also can be related to head trauma, encephalitis, and brain tumor as an etiology.[1,7-9] Therefore, even in the original description, it is generally accepted that there is no association between this phenomenon and epileptic seizures of temporal lobe origin. Nowadays the preferred designation is a rhythmic midtemporal discharges (RMTD), which is just describing the location and shape of this discharge.[3] Our patient did not have any of above symptoms nor medical history, and her MRI findings were unremarkable. Therefore, it is possible to assume that her psychomotor variant is incidentally accompanied by ictal epileptic discharges.

In conclusion, the term 'psychomotor variant' described by Gibbs and Gibbs is a misnomer because of its occurrence in different seizure type and epileptic syndrome. The psychomotor variant should be regarded as a relatively non-specific, non-epileptogenic epileptiform EEG phenomenon.[10] Therefore, it is preferred to designate this phenomenon as a RMTD.

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