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LETTER

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Response: Extreme delta brush in anti-NMDAR encephalitis—Mimics and chameleons

To the Editors,

We are glad to respond to the kind letter written by Shuichiro Neshige, Takafumi Iryo, Hiroki Ueno, and Hirofumi Maruyama regarding our recently published manuscript. In that study, we introduced an electroencephalogram (EEG) pattern called delta brush variant (DBV) characterized as generalized delta activity with superimposed spiky fast bursts, and we speculated DBV was associated with epileptic attack in anti-NMDAR encephalitis.[1] Shuichiro's letter expertly provides some important considerations including montage choice, which greatly enhanced our understanding of the relationship between extreme delta brush (EDB) and its mimics.

Based on the two presented cases, we enthusiastically agree that the morphology of fast component in DBV seems similar to an electromyography (EMG) artifact at first look, but the electroclinical characteristics may uncover the epileptic nature of this pattern to some extent. It should be highlighted that the EEG alternation (EDB→DBV→EDB) was accompanied by semiological evolution (Involuntary movements→Clonus/Tonus→Involuntary movements). We also read with great interest Dr Neshige's case report where they reported that dyskinesia disappeared along with the fast bursts after intravenous usage of midazolam. As typical dyskinesia in anti-NMDAR encephalitis rarely responds to sedatives,[2,3] the ictal nature of this "dyskinesia" still needs to be verified carefully. Actually, the morphology of EEG is sometimes misleading. A similar spiky EDB mimic was reported in Miao's recent work, and it was proved to originate from bilateral superior parietal lobes by magnetoencephalography.[4]

Their letter also proposes that DBV may be contaminated by glossokinetic potential that we failed to evaluate initially. Hereto, data remain limited to rule out this possibility based solely upon visual EEG inspection. However, the periodic bursts recorded in EEG may indicate rhythmic contraction of genioglossus muscle, which make this semiology more epileptic rather than a type of dyskinesia.

The clinical significance of EDB and its mimics has been discussed for years, and the debate is still open. In essence, our goal is to introduce a probable EEG pattern, which may hint ongoing ictal stage of anti-NMDAR encephalitis. Besides the morphology, EDB mimics should be carefully evaluated combined with the electroclinical features and drug response.

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CONFLICT OF INTEREST

None of the authors has any conflict of interest to disclose. We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines.

Qi Huang
Yuhan Liao
Meigang Ma
Yuan Wu

Department of Neurology, First Affiliated Hospital, Guangxi Medical University, Nanning, China

Correspondence
Yuan Wu, Neurology department, The first affiliated hospital, Guangxi medical university, No.6, Shuangyong Road, Qingshan Zone, Nanning, Guangxi, China.
Email: Nwuyuan90@163.com

ORCID

Yuan Wu https://orcid.org/0000-0003-3267-8388

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