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# Extreme Delta Brush in NMDA Receptor Encephalitis

**James Castellano, MD, PhD[1], Robert Glover, MD[2], and Julie Robinson, MD[1]**

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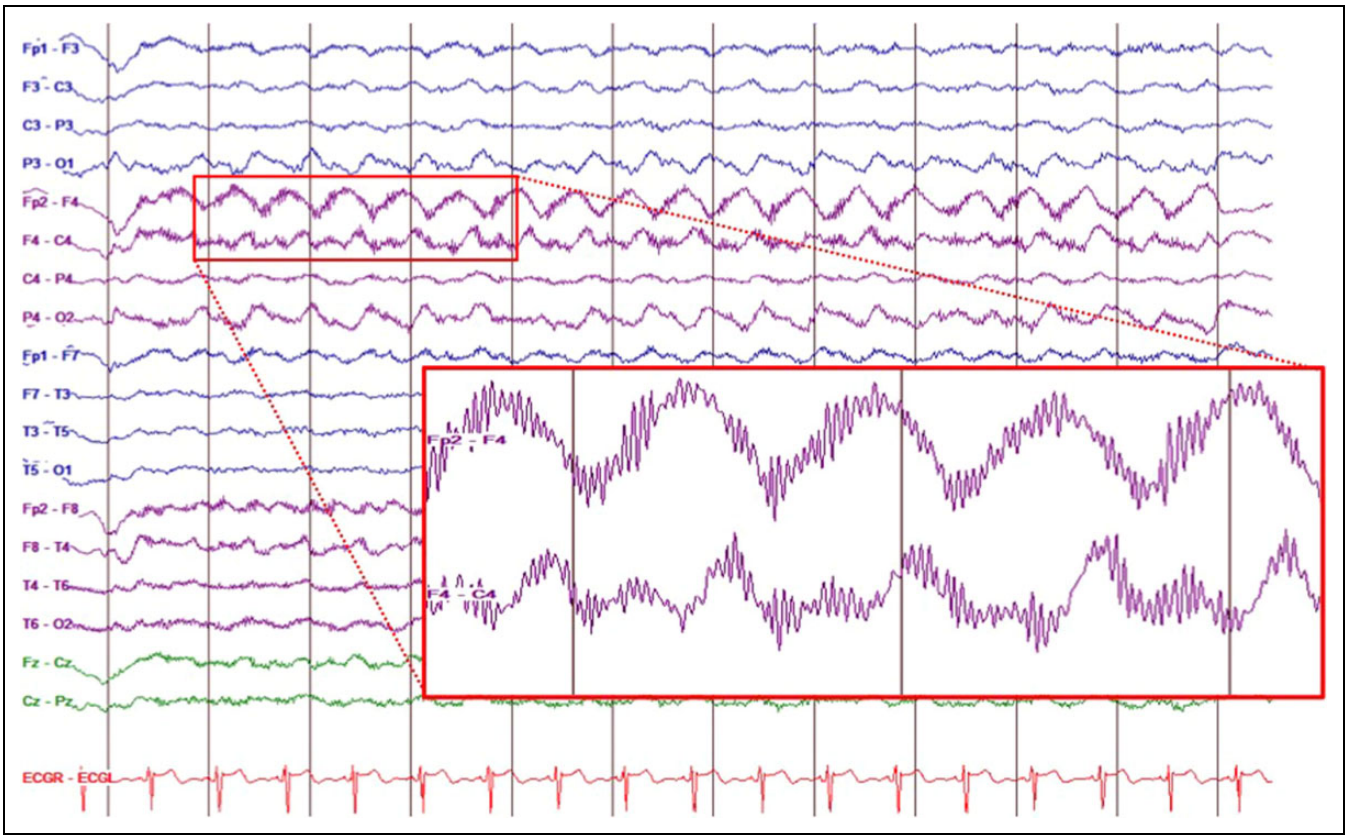


**Figure 1.** Extreme delta brush is characterized by rhythmic continued delta activity with superimposed beta activity riding on each delta wave. This pattern is most notable in the R frontal leads in the above electroencephalogram (EEG). Gray lines represent 1-second time interval.

A 24-year-old female presented with 2 days of confusion and memory impairment and quickly progressed to a comatose state with dyskinetic movements. Initial cerebrospinal fluid results were notable for a lymphocytic pleocytosis. Initial electroencephalograms showed diffuse slowing and extreme delta brush pattern (Figure 1). Contrast-enhanced magnetic resonance imaging (MRI) of the brain did not reveal acute pathology. A possible hemorrhagic cyst in the left ovary was noted on pelvis MRI. One week after initial presentation,

[1] Department of Neurology, Montefiore Hospital and Medical Center, Bronx, NY, USA
[2] Department of Neurology, University at Buffalo School of Medicine and Biomedical Sciences, Buffalo, NY, USA

**Corresponding Author:**
James Castellano, Department of Neurology, Montefiore Hospital and Medical Center, 111 E. 210th St, Bronx, NY 10467, USA.
Email: jcastell@montefiore.org

NMDAr antibody reported as positive. Patient's treatment regimen consisted of high-dose intravenous steroids, plasma exchange, rituximab induction, numerous combinations of antiepileptic drugs, and unilateral oophorectomy. Despite the presence of indeterminate pathology on pelvic imaging, no evidence of neoplasm, teratoma or otherwise, was discovered. Unfortunately, the patient did not show much clinical improvement over her 6-month hospitalization.

Extreme delta brush is a well-characterized feature of NMDAr encephalitis in both the pediatric and adult populations.[1-3] Presence of this pattern generally portends a more severe, prolonged illness.[2] Although the most definite testing for NMDAr encephalitis remains cerebrospinal fluid antibody analysis, prompt identification of this electroencephalogram pattern may hasten delivery of immunomodulatory therapy in this often rapidly progressive patient population.

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## Declaration of Conflicting Interests

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