

Teaching NeuroImage: Pseudo–Figure-of-4 Sign

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Figure 1 Semiology During Video-EEG Supporting Seizure Onset in the Left Hemisphere



Pseudo-figure-of-4 sign with right arm extended and left arm flexed to reproduce a falsely lateralizing number “4” from left elbow flexion contracture in a patient with focal epilepsy and recurrent focal to bilateral tonic-clonic seizures.

Case Summary

A 37-year-old right-handed man with spastic quadriparetic cerebral palsy, congenital hydrocephalus, and anxiety was admitted for seizure characterization with video-EEG monitoring. Neurologic examination demonstrated marked upper extremity spasticity and left elbow flexion contracture. Three habitual focal to bilateral tonic-clonic seizures (Figure 1) were recorded on EEG (Figure 2).

Although the figure-of-4 sign in focal to bilateral tonic-clonic seizures is strongly lateralizing contralateral to the tonically extended arm,^{1,2} our patient’s left arm spasticity restricted extension, leading to a falsely lateralizing figure-of-4 sign. Semiology remains a cornerstone for clinical decision-making, although it requires individualization for comorbid physical disabilities.

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Disclosure

C. K. Rao reports no disclosures relevant to the manuscript; W. O. Tatum reports no disclosures relevant to the manuscript. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

References

1. Kotagal P, Bleasel A, Geller E, Kankirawatana P, Moorjani BI, Rybicki L. Lateralizing value of asymmetric tonic limb posturing observed in secondarily generalized tonic-clonic seizures. *Epilepsia*. 2000;41(4):457-462.
2. Marshly A, Ewida A, Agarwal R, Younes K, Lüders HO. Ictal motor sequences: lateralization and localization values. *Epilepsia*. 2016;57(3):369-375.

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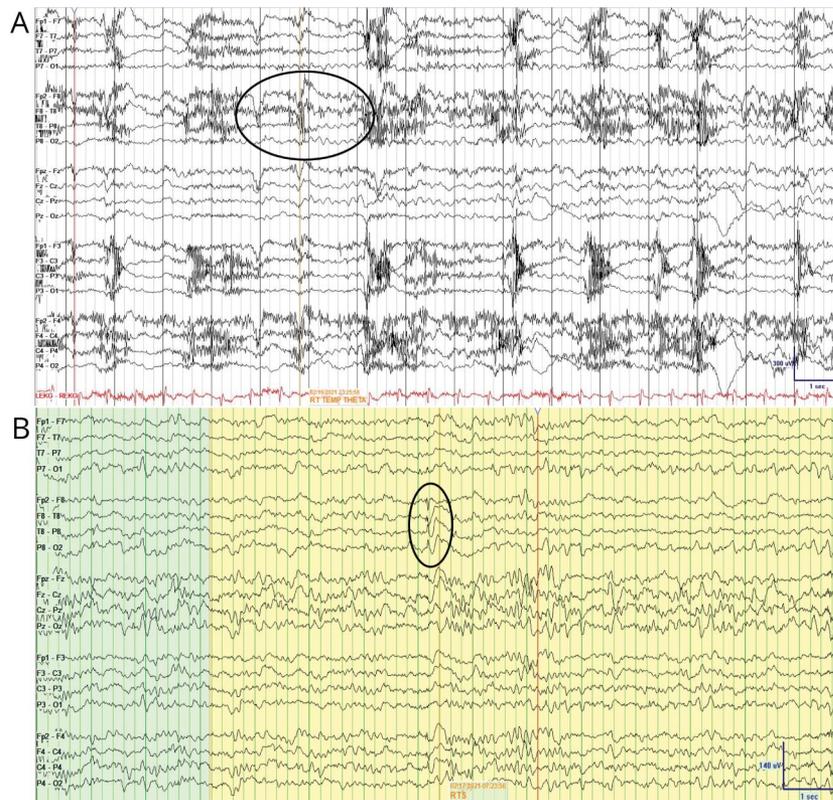
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Figure 2 Interictal and Ictal EEG Supporting Right Temporal Lobe Epilepsy



EEG demonstrating (A) right temporal ictal rhythmic theta. Onset was obscured by movement and myogenic artifact and (B) interictal right midtemporal sharp waves.

Appendix Authors

Name	Location	Contribution
Chethan K. Rao, DO, MS	Mayo Clinic, Jacksonville, FL	Drafting of the manuscript, acquisition of data, manuscript preparation, and literature review
William O. Tatum, DO	Mayo Clinic, Jacksonville, FL	Study concept and design, acquisition of data, and critical revision of the manuscript for important intellectual content

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