

# Teaching NeuroImage: Ictal Pouting Associated With Focal Cortical Dysplasia and Frontal Seizures on Stereotactic Depth Electrode EEG

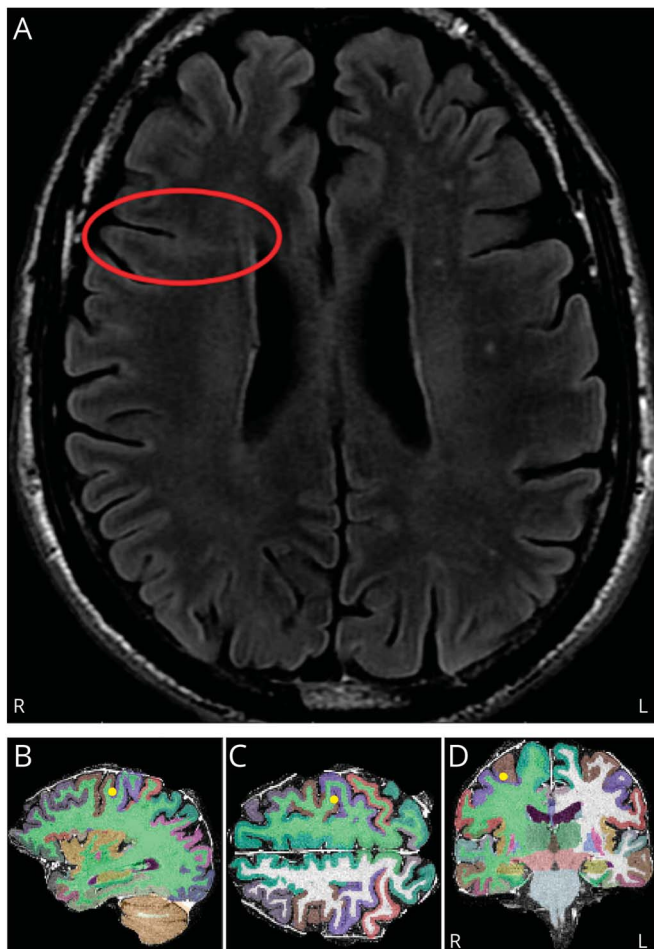
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**Figure 1** Linear Hyperintensity in Right Frontal Lobe Extending From Cortical Surface to Frontal Horn of Right Lateral Ventricle



Postsurgical pathology confirmed area of focal cortical dysplasia type II (A). Right caudal middle frontal gyrus localization of depth electrode contact RPINS8, marking seizure onset zone in sagittal (B), axial (C), and coronal (D) planes.

A 65-year-old man presented with chronic drug-resistant epilepsy. EEG video monitoring showed seizures manifesting with ictal pouting or the “chapeau de gendarme” sign. MRI demonstrated focal cortical dysplasia in the right frontal lobe (Figure 1A). Stereotactic depth electrode EEG (stereo-EEG) showed seizures originating within a cortical sulcus of the right caudal middle frontal gyrus (Figures 1, B–D, and 2). The patient became seizure-free after resection of the seizure onset zone and surrounding area of cortical dysplasia and

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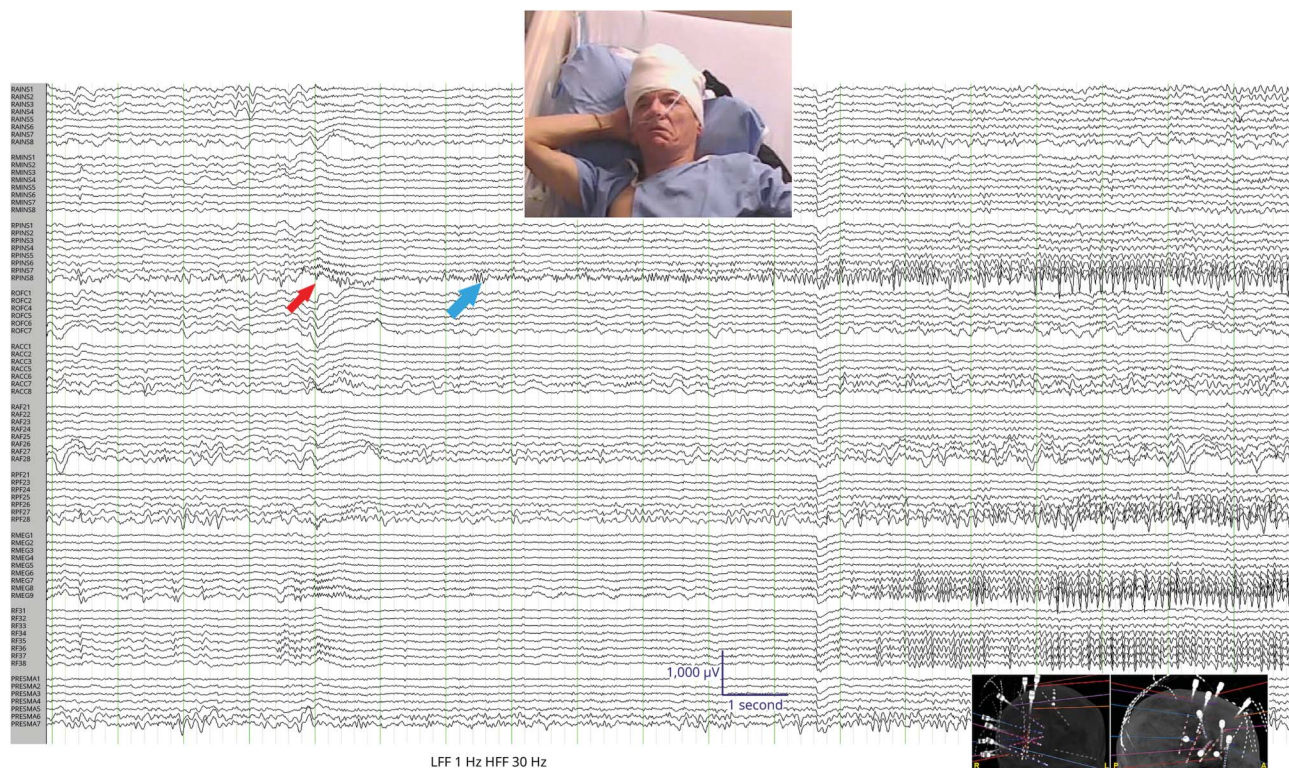
### Teaching slides

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Stereo-EEG showing ictal onset (red arrow) as rhythmic low amplitude beta frequency activity maximal at contact RFIN8 in right caudal middle frontal gyrus (cf. Figure 1B–D), evolving in amplitude and frequency during seizure progression. Clinically, the patient showed ictal pouting or “chapeau de gendarme” (top inset) 2 seconds after seizure onset (blue arrow).

remains so 9 months after surgery. Ictal pouting has been described as a sign of seizures originating in the frontal lobe, especially in the anterior cingulate<sup>1</sup> or anterior insular cortices,<sup>2</sup> areas uninvolved in our patient’s seizures. Awareness that other frontal lobe areas are part of a common network underlying ictal pouting may be important for interpretation of neuroimaging modalities such as ictal single-photon emission computerized tomography, PET, and magnetoencephalography and for stereo-EEG planning, especially in MRI-negative cases.

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### Author Contributions

Paula Marques, MD: Drafting/revision of the manuscript for content, including medical writing for content; major role in the acquisition of data; study concept or design. Richard Wennberg, MD: Drafting/revision of the manuscript for content, including medical writing for content; analysis or

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### References

1. Souirti Z, Landré E, Mellerio C, Devaux B, Chassoux F. *Epilepsy & Behavior Neural network underlying ictal pouting (“chapeau de gendarme”) in frontal lobe epilepsy.* *Epilepsy Behav.* 2014;37:249-257. doi: 10.1016/j.yebeh.2014.07.009
2. Wiwchar LD, Hader W, Pauranik A, Joseph JT, Appendino JP. *Epilepsy & Behavior Reports Focal seizures associated with the chapeau de gendarme sign or ictal pouting of insular origin.* *Epilepsy Behav Reports.* 2019;12:100347. doi: 10.1016/j.ebr.2019.100347.

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