

# Mystery Case: Symptomatic isolated tongue tremor of cortical origin due to stroke

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An 82-year-old right-handed man with atrial fibrillation presented with abnormal tongue movement after awakening. Neurologic examination showed tremulous tongue movements (video) without other neurologic deficit. Brain MRI showed acute infarction in the left inferolateral precentral and inferior frontal gyri (figure) without abnormality in brainstem, cerebellum, or basal ganglia. Similar to the only previously reported case of tongue tremor with right hand weakness due to stroke, tongue tremor in our case also spontaneously improved without specific treatment.<sup>1</sup>

This case provides evidence that tongue tremor can develop after sudden unilateral cortical function loss in the precentral or inferior frontal gyri.

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## Mystery Case responses: Symptomatic isolated tongue tremor of cortical origin due to stroke

The Mystery Case series was initiated by the *Neurology*® Resident & Fellow Section to develop the clinical reasoning skills of trainees. Residency programs, medical student preceptors, and individuals were invited to use this Mystery Case as an educational tool. Responses were solicited through a group email sent to the American Academy of Neurology Consortium of Neurology Residents and Fellows and through social media.

A total of 259 participants responded to this mystery case. A large majority, 77%, correctly localized the lesion to the CNS.<sup>1</sup> Similarly, 63% correctly identified the left inferolateral precentral gyrus stroke. However, only 27% noted the left inferior frontal gyrus stroke. This is likely due to confusion with the left angular gyrus, which was the most common incorrect answer. Twenty-nine percent of respondents correctly answered that spontaneous full recovery is expected. Seven respondents answered all 3 questions correctly.

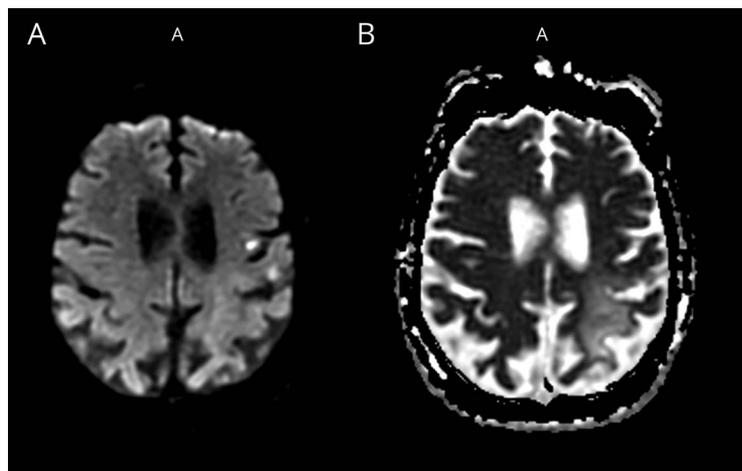
This mystery case highlights isolated tongue tremor due to stroke, which is very rare. As discussed by the authors, one other example of poststroke isolated tongue tremor has been described.<sup>1</sup> Both the previously described patient and this patient exhibited full recovery. Isolated tongue tremor from other etiologies is also rare. Previous cases have been reported due to tumors, following gamma-knife surgery, in Wilson disease, and from neoplastic Hu antibodies.<sup>2</sup>

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Brain MRI shows 2 hyperintensity foci on the diffusion-weighted image (A) with corresponding hypointensity area on the apparent diffusion coefficient sequences in the left inferolateral precentral and inferior frontal gyri (B). These findings are suggestive for acute infarction.

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### Disclosure

The authors report no disclosures relevant to the manuscript. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

### Appendix Authors

Name	Location	Role	Contribution
<b>Smathorn Thakolwiboon, MD</b>	Texas Tech University Health Sciences Center, Lubbock	Author	Participated in data acquisition, analysis, and interpretation, contributed to drafting and revising the manuscript for intellectual content
<b>Doungporn Ruthirago, MD</b>	Massachusetts General Hospital, Harvard Medical School, Boston	Author	Drafting and revising the manuscript for intellectual content

### Appendix (continued)

Name	Location	Role	Contribution
<b>Pavis Laengvejkal, MD</b>	Bumrungrad International Hospital, Bangkok, Thailand	Author	Critically reviewing the manuscript and patient care
<b>Henrik Wilms, MD, PhD</b>	Texas Tech University Health Sciences Center, Lubbock	Author	Design and conceptualization of the work, analysis and interpretation of data, contributed to drafting and revising of the manuscript for intellectual content

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