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Unruptured posterior communicating artery aneurysm presenting with gustatory seizures and temporal lobe edema

Brian T. Ragel, M.D., Valerie C. Coon, M.D., William T. Couldwell, M.D., Ph.D.

Department of Neurosurgery, University of Utah, Salt Lake City, Utah

Corresponding author:
William T. Couldwell, M.D., Ph.D.
Department of Neurosurgery
University of Utah Health Sciences Center
175 N. Medical Drive East
Salt Lake City, UT 84132
Tel: (801) 581-6908
Fax: (801) 581-4385
Email: neuropub@hsc.utah.edu

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Abstract

Unruptured cerebral aneurysms presenting with seizures are unusual. We describe a case of a growing middle cerebral artery aneurysm presenting with gustatory seizures with magnetic resonance imaging showing peri-aneurysmal edema. This case is the first to show temporal lobe edema associated with increasing aneurysm size on sequential MRI scans.

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A 51-year-old woman, who four years earlier had "normal" brain magnetic resonance (MR) imaging (Fig. 1A–D) during a headache work-up, presented describing episodic sensations of left-hand heaviness associated with epigastric nausea and feelings of déjà vu. These events, which lasted 30 seconds, became more frequent and she was diagnosed clinically with temporal lobe seizures. Interictal routine scalp EEG at that time demonstrated no focal epileptiform discharges. A neurologic examination was nonfocal. Recent MR imaging revealed new right temporal lobe edema and a multilobed internal carotid–posterior communicating artery (PCOM) aneurysm (Fig. 1E–H). Retrospectively, the aneurysm was present on previous imaging and had increased from 4 mm to 14 mm. The patient underwent a right pterional craniotomy for clipping of the aneurysm. At surgery, the partially thrombosed PCOM aneurysm, which was projecting laterally into the temporal lobe with surrounding gliotic, edematous, hemosiderin-stained brain, was clipped uneventfully. Postoperatively, the edema surrounding the aneurysm subsided, and the patient became seizure free off of all medications.

Unruptured cerebral aneurysms presenting with seizures are unusual but well reported in the literature (1-4). These aneurysms are usually located in the middle cerebral artery (MCA), with the next greatest frequency in the PCOM (1-4). Several aneurysm–seizure-inducing mechanisms have been proposed, including direct compression of the mesial temporal lobe, subclinical aneurysmal hemorrhage, and thromboembolism causing brain ischemia (3). Peri-aneurysmal edema may result from altered vascular permeability, inflammatory mediators, or yet-to-be-defined chemical factors (3). One report describes resolution of temporal lobe edema after successful MCA aneurysm coiling (3). This case is the first to show temporal lobe edema associated with increasing aneurysm size on sequential MR imaging scans.

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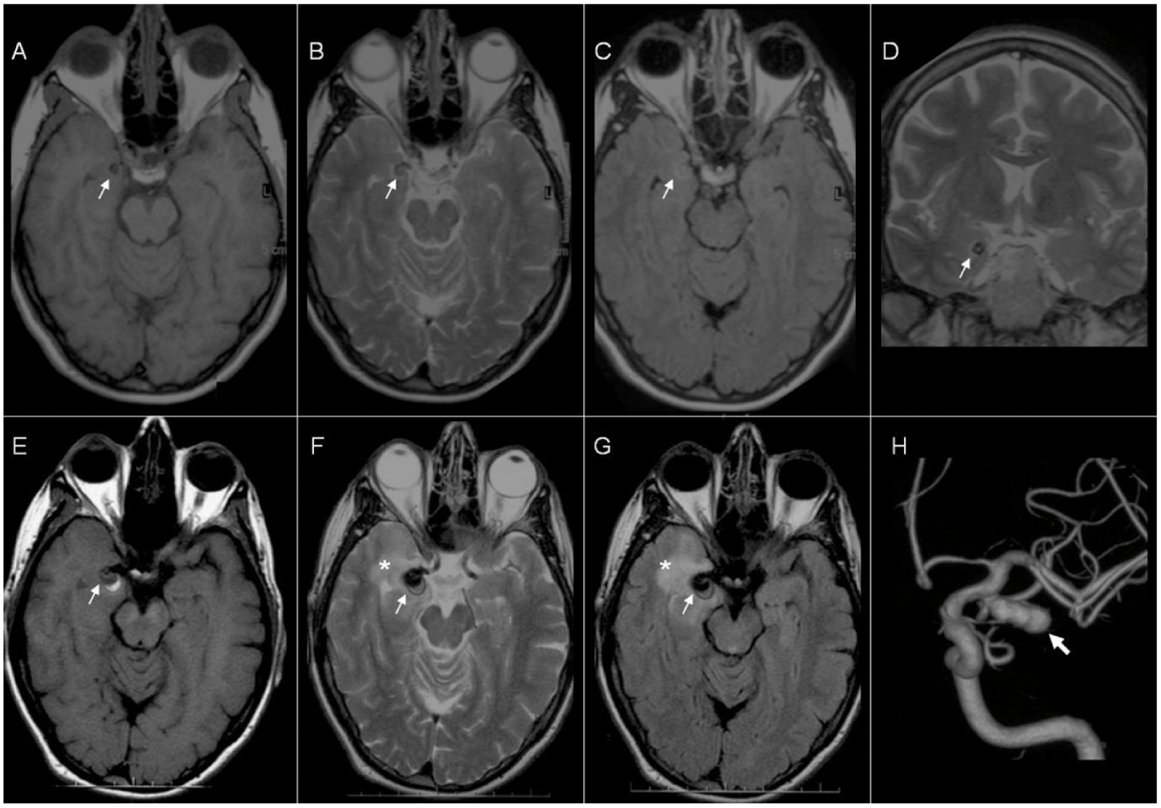

Figure 1: MR imaging (A–G) of brain and MR angiogram (H) of right internal carotid artery. Axial T1-weighted (A), axial T2-weighted (B), axial FLAIR (C), and coronal T2-weighted (D) images depicting a 4-mm right PCOM artery aneurysm (arrows) without temporal lobe edema. Axial T1-weighted (E), axial T2-weighted (F), and axial FLAIR (G) images obtained four years later showing an interval increase to 14 mm in PCOM aneurysm size (arrows) with new mesial temporal lobe edema (asterisks). (H) MR angiogram depicting a multilobed PCOM artery aneurysm (arrow).

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