

Stroke-induced focal status epilepticus

Clinical Image

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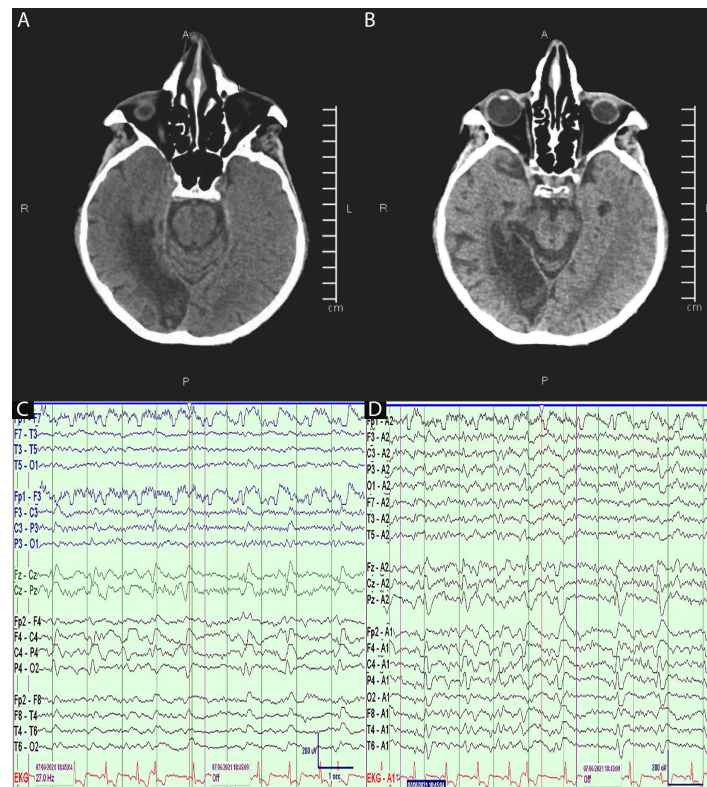


Figure 1: (A-B) Head computerized tomography showing a chronic infarction in the right medial temporo-occipital gyrus (posterior cerebral artery territory); (C-D) EEG showing right hemisphere lentification and periodic lateralized epileptiform discharges (PLEDs).

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A 72-year-old male presented to the emergency room after experiencing two unknown onset tonic-clonic seizures and was admitted to the geriatric ward for further study. His medical history was relevant for type 2 diabetes mellitus, hypertension, and chronic kidney disease. Neurological examination was relevant for left body findings: hemiparesis with accompanying clonic movements (synchronic, face-arm-leg) and hypoesthesia. Unenhanced head computerized tomography (TC) showed a chronic infarction in the right medial temporo-occipital gyrus consistent with an ischemic stroke in the posterior cerebral artery territory (Figure 1, A-B). Electroencephalogram showed an abnormal rhythm, with right hemisphere lentification and periodic lateralized epileptiform discharges (PLEDs) (Figure 1, C-D). The abnormal left-sided movements stopped briefly after administration of a low-dose diazepam bolus but continued minutes after drug infusion. The patient remained conscious throughout hospitalization and was treated with a combination of levetiracetam, phenytoin, and valproic acid with a notable improvement of clonic movements. The clinical, radiological, and electrophysiological findings were consistent with a stroke-induced focal status epilepticus (SS). After available in-hospital workup and limited diagnostic resources due to the COVID-19 pandemic, brain infarction was classified as an embolic stroke of unknown source (ESUS).

SS is defined as the presence of seizures that last more than 5 minutes or two or more seizures without full recovery in between. Focal motor status epilepticus involves the refractory motor activity of a limb or a group of muscles on one side of the body with or without loss of consciousness. SS is a true neurological emergency that requires immediate diagnosis and treatment.¹⁻³

Stroke remains the number one cause of epilepsy in older adults, and as physicians, we must be aware of atypical presentations of cerebral ischemia such as focal status epilepticus.⁴ The differential diagnosis for this rare condition includes other abnormal movement disorders such as hemiballismus and hemichorea. A benzodiazepine challenge (with clonic movement cessation after IV administration) may be a helpful bedside clinical tool to distinguish between these entities.

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