

CASE REPORT

Periodic lateralized epileptiform discharges in neuropsychiatric lupus: association with cerebritis in magnetic resonance imaging and resolution after intravenous immunoglobulin

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A 13-year-old girl with a known diagnosis of systemic lupus erythematosus presented with seizures and psychosis. An electroencephalogram (EEG) revealed continuous, non-evolving periodic lateralized epileptiform discharges (PLEDs) in the left temporal region, which did not resolve with benzodiazepine. A magnetic resonance imaging (MRI) brain scan demonstrated a focal hyperintensity in the left medial temporal and left occipital lobes, left thalamus and bilateral cerebellar white matter, with evidence of vasculitis in the magnetic resonance angiography. Intravenous immunoglobulin was given because of failed steroid therapy, which resulted in a full resolution of clinical, EEG and MRI abnormalities. Lupus cerebritis should be considered as a possible aetiology in PLEDs, and immunoglobulin can be effective in neuropsychiatric lupus. *Lupus* (2010) 19, 748–752.

Key words: neuropsychiatric lupus; cerebritis; cerebral lupus; PLEDs; EEG; immunoglobulin

Introduction

Electroencephalogram (EEG) abnormalities are reportedly common in systemic lupus erythematosus (SLE), with or without neuropsychiatric manifestations. Glanz *et al.*¹ reported 87.1% abnormal in 62 EEGs of patients with SLE with or without neuropsychiatric lupus. The majority of the abnormalities noted in SLE were in the left hemisphere and localized to the left temporal region.^{1,2} The most frequent abnormalities were paroxysmal focal changes and abnormalities in background activity.³ Periodic lateralized epileptiform discharges (PLEDs) are uncommon in SLE and only two cases were identified in the literature.^{4,5}

PLEDs are an EEG phenomena characterized by unilateral and repetitive sharp waves, spikes or more complex wave forms, at nearly regular intervals. It is commonly related to stroke, Herpes and other encephalitis, Creutzfeldt–Jacob disease and postanoxic encephalopathy, and, more rarely, with

demyelinating disorder, migraine, metabolic disorder, trauma, tumor and other encephalitis.^{6,7} Of the two cases of SLE with PLEDs, both had seizures; one had bilateral independent PLEDs (BIPLEDs) and the left hemisphere predominant in another. One case was resolved after steroid therapy.⁴

Neuroimaging is often normal or non-specific in SLE, showing cerebral atrophy and subcortical hyperintensity. In computer tomography (CT) of the brain, intracerebral calcification was reported in 30% of neuropsychiatric lupus.⁸ The most frequent magnetic resonance (MR) abnormalities in neuropsychiatric lupus are hyperintense focal white matter lesions, infarcts in the cortex and pons, and basal ganglia lesions.⁹

We report on a patient with cerebral lupus who presented with seizures, followed by psychosis with PLEDs in the EEG and temporal T2 hyperintensity in the magnetic resonance imaging (MRI), which was resolved completely after intravenous immunoglobulin (ivIg).

Case report

A 13-year-old ethnic Chinese female presented 3 months ago with low grade fever and rashes,

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