Neurophysiological and neuroimaging changes (crossed cerebrocerebellar atrophy) after prolonged non-convulsive status epilepticus

Alterações de neuroimagem e de neurofisiologia após estado de mal epilético não-convulsivo

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A 33-year-old female patient suffering from epilepsy since the age of seven years (Figure 1) presented with left-sided hemiparesis following non-convulsive status epilepticus (NCSE) (Figure 2). Neuroimaging showed a reduction in volume of the right cerebral hemisphere and left cerebellar hemisphere (Figure 3). EEG showed asymmetry with right hemispheric slowing (Figure 4).

NCSE can have deleterious effects on the CNS because of neuronal death after 30 to 60 minutes of continuous convulsive activity¹,². Following an episode of NCSE, 10 to 50% of patients present with incapacitating neurological deficit³. Cranial MRI may show a persistent hyperintense lesion in T2- or diffusion-weighted images⁴,⁵.

Figure 1. Cranial computed tomography before the patient was admitted to hospital due to non-convulsive status epilepticus (January 2015).

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Figure 2. Brain images (April 2015) after the patient was admitted to hospital.

Figure 3. Brain MRI after the patient was admitted to hospital for non-convulsive status epilepticus (June 2015)

Figure 4. EEG performed in May 2015 showing asymmetry due to slowing of the right brain hemisphere (a sequela of prolonged non-convulsive status epilepticus).

References