

Neurocysticercosis and pharmacoresistant epilepsy: possible role of calcified lesions in epileptogenesis

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Seizure semiology

- This case illustrates that focal frontal epilepsy may present with features similar to those of generalized epilepsies, leading to erroneous diagnosis and treatment.
- The asymmetric tonic posture and unilateral myoclonia, in addition to focal frontal among bilateral synchronous epileptiform discharges, raised a suspicion of focal epilepsy which was confirmed by the finding of a cysticercus in the right frontal lobe and video-EEG recordings.
- Based on the new 2017 seizure classification, myoclonia are listed in the generalized category but also as a possible focal seizure type.

Ictogenesis and neurocysticercosis

- Seizures in patients with NCC usually occur during the active stage of the disease, with the degeneration of parasites (Nash et al., 2008) when symptomatic seizures may result from the acute inflammatory response (Carpio et al., 2014). In some cases, the acute inflammation will resolve completely with or without evolution to a calcified lesion (Carpio et al., 2015; Nash et al., 2015).
- In the chronic phase, resolution may be incomplete, provoking a chronic inflammatory process associated with recurrent seizures or residual encephalomalacia, and gliosis may also be responsible for epilepsy development.

A calcified cysticercus as an epileptogenic lesion

- In the case of a calcified cysticercus, three possibilities should be taken into account: 1. The cysticercus granuloma is the epileptogenic lesion; 2. NCC is the epilepsy etiology but the calcified lesion is not related to the location of the epileptogenic zone; 3. NCC is an incidental finding (Leite et al, 2000, Rathore et al., 2013)
- In the context of NCC with calcified lesions causing epilepsy, possible mechanisms are reported to be perilesional chronic inflammation, gliosis, and/or neurotoxicity (Carpio and Romo, 2014). Our study reveals evidence of inflammatory and pro-epileptogenic markers distributed as a gradient around a calcified cysticercus.