Neurocysticercosis: a mayor public health problem

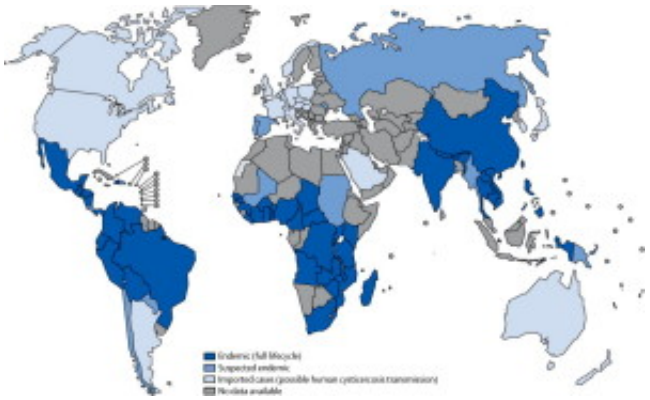

Fig. 1. Geographical prevalence of *Taenia solium*

Neurocysticercosis (NCC) is the most frequent parasitic disease of the central nervous system, and it occurs when the larvae of the tapeworm *Taenia solium* infects the central nervous system. This disease is endemic in most developing countries and its prevalence is increasing in developed countries mainly due to immigration from endemic areas (Fig. 1). NCC is a worldwide mayor public health problem, and it is the main cause of acquired epilepsy in endemic areas.

According to the cyst location, we can divide NCC into intraparenchymal and extraparenchymal forms, and these last ones into subarachnoid, intraventricular and spinal forms. Intraparenchymal forms are the most frequent ones. Usually in extraparenchymal cysts there is a regression of the scolex, leading to a “racemose form” as they adopt a shape that reminds a bunch of grapes. If the cysts are located in large subarachnoid cisterns, like the Sylvian fissure, subarachnoid forms can grow into large cysts, which are considered “giants” when they measure more than 50 mm of diameter (Fig. 2).

Clinical manifestations are diverse and related to the number, location and size of the cysts. The most common findings are epilepsy, focal neurological deficits, headache and dementia. These symptoms are more commonly related to parenchymal forms. Complications like intracranial hypertension or hydrocephalus are more frequent in extraparenchymal forms.

Diagnosis of NCC may be difficult, especially in non-endemic areas. Therefore, the diagnosis is based on a combination of epidemiological, clinical, radiological and immunological criteria. Neuroimaging has a main role in the diagnosis and follow-up of this disease. MRI is the most sensitive test, and allows us to identify the number, type, location and stage of the lesions, and to determine the intensity of inflammatory response. There is a pathognomonic finding, which is the presence of the scolex, a hyperintense eccentric nodule in the interior of the cyst, which gives a

“hole-with-dot” imaging. ELISA is the serological technique used for NCC diagnosis. This test can detect specific antibodies and parasite antigens, but their specificity is low and can produce false positives in cases where the cysticerci hasn’t affected the central nervous system or in patients that were in contact with the parasite but didn’t develop a clinical NCC.

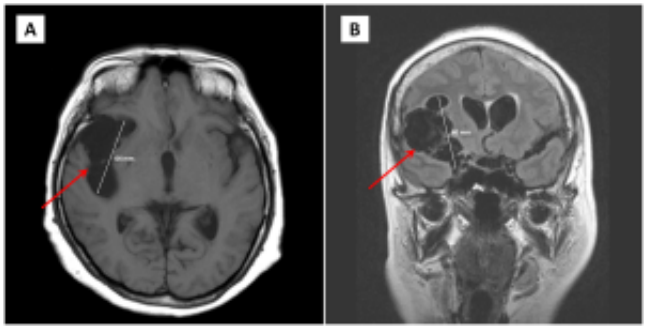

Fig. 2. Giant subarachnoid racemose neurocysticercosis. Brain MRI in axial T1 (A) and coronal FLAIR (B) sequences, with occupation of the right Sylvian fissure by multiple cystic images (red arrows)

The currently recommended treatment for NCC are cysticidal drugs, either praziquantel (usual dose 50 mg/kg per day for 2 weeks) or albendazole (usual dose 15 mg/kg per day for 2 weeks). There is no clear superiority of one over the other. A recent study evaluated the efficacy of combined therapy with albendazole and praziquantel for intraparenchymal NCC, with a higher percentage of resolution of the cysts and without more side effects with the combined therapy, compared to albendazole alone. In the extraparenchymal forms is recommended to associate corticosteroids to the treatment, in order to prevent the risk of a severe inflammatory reaction related to the destruction of the cysts caused by the cysticidal drugs. Surgery plays an important role in the management of some forms of NCC, particularly in subarachnoid and intraventricular forms where in some cases surgery should be considered as the first therapeutic option. There is an increasing evidence of the benefit of endoscopic approach for intraventricular cysts. When symptomatic hydrocephalus occurs, the recommended treatment is an urgent ventricular derivation.

Publication

[Giant racemose subarachnoid and intraventricular neurocysticercosis: A case report].
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