Case Report

Natural History of Multiple Giant Cysts in Neurocysticercosis

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Abstract Teniasis and cysticercosis represent a considerable public health issue and have been estimated to affect more than 50 million people worldwide per year. Neurocysticercosis is the most common parasitic infection of the central nervous system and acquired epilepsy is a frequent manifestation of the disease in developing countries. The growth of cysticercus more than 50 mm in diameter is called giant cysts, and they are considered an expansive lesion. Some of them can induce mass effect and development of hydrocephalus and intracranial hypertension. We report a case of neurocysticercosis, characterized by extensive and multiple giant cysts, which coped with balanced intracranial hypertension.

Keywords neurocysticercosis; epilepsy; headache; intracranial hypertension; giant cysts; subarachnoid cysts

1. Introduction

Neurocysticercosis (NCC) is caused by Taenia solium infection in the central nervous system (CNS) [3,6]. NCC represents an important cause of acquired epilepsy in developing countries. Seizures, headache, psychiatric symptoms, intracranial hypertension, and cysticercotic meningitis are common manifestations [7]. Giant cysts (more than 5 cm in diameter) are not frequent in NCC, occurring in approximately 10% of cases [5].

We present a patient from a non-endemic area who had extensive neurocysticercosis characterized by giant cysts, with apparent compensation of intracranial hypertension.

2. Case report

A 47-year-old Brazilian black man from Rio de Janeiro, Brazil, was admitted to our hospital in 2008. The patient reported a strong, daily holocranial headache that were relieved by analgesics and exacerbated by anxiety. He had history from 1989 to 2004 of generalized tonic-clonic seizures associated with salivary and disturbance of consciousness that were preceded by scintillating scotoma and paresthesiae in the left upper limb. The patient had childhood contact with pigs. The neurological examination and funduscoppy were normal. A serum Western blot for Taenia solium and Taenia crassiceps were both positive. A cerebrospinal fluid (CSF) analysis was performed 2 months before admission to our hospital and revealed pleocytosis (21 cells/mm³, 92% lymphocytes), hyperproteinorrachia (66 mg/dL) and reactive hemagglutination, immunofluorescence, and ELISA tests for NCC. The EEG exhibited diffuse slow waves. Soft tissue (thigh) simple radiography demonstrated calcifications compatible with cysticercosis. A brain CT/MRI scan exposed multiple large, bilateral cystic lesions, with scolex (Figure 1). Additionally, the patient’s condition escalated with anxiety, depressive symptoms, insomnia, and daily episodes of sweating that lasted a few seconds. Chlordiazepoxide and amitriptyline were successfully prescribed.

3. Discussion

We report a case characterized by contact with pigs during childhood, suggestive clinical manifestations of NCC, a positive serum Western blot for T. solium, and a reactive ELISA test of CSF [3]. The CT and MR imaging showed multiple large, bilateral cystic lesions, with scolex. Some of these lesions caused midline shift, representing a tumoral form of NCC [5]. In accordance with other reports of NCC, seizures were the first manifestations of the disease, probable associated with intraparenchymal lesions. However, mass effect became apparent only some years later, due to the late development and growth of intraparenchymal and extraparenchymal ( Sylvian fissure) cysticercosis. We hypothesize that there was a compensation of the intracranial pressure due to the presence of the bilateral lesions and the slow growth of the cysts, contributing to the control of the initial intracranial hypertension [4]. Otherwise, the detection of
Figure 1: MRI of the brain showed cystic lesions under sagittal T1 weighted imaging in the left cerebellum (a), right frontal lobe, and subarachnoid space (b). We also observed large right frontal cystic lesions with scolex and a left midline shift, the larger of which was 6.5 × 2.9 mm in size, under coronal T2 weighted imaging (c) and axial fluid-attenuated inversion recovery (FLAIR) (d).

Parenchymal calcifications show that some lesions regress without treatment. Some authors report that parenchymal brain cysticercosis may follow a benign course with a natural history of cyst degeneration and healing [4].

The natural history of subarachnoid disease is not well known. There are no comparative studies between the treatments: surgery or antiparasitic drugs. There is divergent evidence regarding the treatment of NCC using antiparasitic drugs. The use of cysticidal drugs in cases of multiple giant cysts with mass effect may cause intensification of the inflammatory reaction associated with the degenerations of the cysts, increasing the intracranial hypertension and inducing transtentorial herniation [2,4]. However, the combined use of high-dose corticosteroids may reduce the lethal effects of the inflammation in such cases.

Our case describes a peculiar presentation of multiple giant cysts, characterized by headache and psychiatric manifestations, with prior history of seizures that improved with symptomatic medication. The highlight point of the report is that the patient lived with intracranial hypertension, which was apparent years after of the onset of the disease. This report provides evidence that neurocysticercosis should be investigated in patients with clinical manifestations and epidemiological data suggestive of the disease, particularly in non-endemic areas, considering that it may be transmitted from person to person [1].

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