CASE REPORT

Neurocysticercosis – non-specific clinical and neuroradiological presentation

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Abstract

Neurocysticercosis (cysticercosis cerebri) is a rare neurological diagnosis in Croatia. It is classically divided into four types: intraparenchymal, basilar cisternal, ventricular and diffuse. Computerized tomography (CT) and magnetic resonance imaging (MRI) established the diagnosis by demonstrating cysticercosis disseminated throughout the cerebral parenchyma. The authors emphasize the potential of the ELISA test to detect anticysticercosis antibodies in blood and cerebrospinal liquor (CSF). Diagnostics of neurocysticercosis is enabled jointly by clinical signs, neuroradiological, serum and liquor tests. We report the case of a 70-year old man with clinical and neuroradiological signs of cysticercosis cerebri. The neurological status is dominated by ataxia, corticospinal pathways damages and cognitive capacity impairments. CT of the brain shows calcificated and cystic lesions of various sizes. MRI of the brain enables the final diagnosis of the cysticercosis cerebri with multiple and multicentric lesions that indicate various stages of the cerebral cysticercosis (Fig. 2, Ref. 20). Full Text (Free, PDF) www.bmj.sk.

Key words: neurocysticercosis, computed tomography (CT), magnetic resonance imaging (MRI), ELISA.

Neurocysticercosis, infection of the central nervous system (CNS) by larvae of the pork tapeworm Taenia solium, is the most common neuroparasitic infection in humans. Active neurocysticercosis (NCC) may be parenchymal and extraparenchymal NCC. Neurocysticercosis is classically divided into four general types: intraparenchymal, basilar cisternal, ventricular and diffuse cerebral (1–3). Clinical presentation neurocysticercosis (cerebral cysticercosis) included increased intracranial pressure, headache, focal neurological deficit and seizure, meningoencephalitis, chronic remittent serous meningitis (4, 5). Increased intracranial pressure (ICP) was caused by hydrocephalus, by intracranial mass lesion (tumoral form) and by pseudotumour cerebri (pseudotumoral form) (6–8). The authors emphasize the importance of ELISA test in the detection of anticysticercosis antibodies in blood and cerebrospinal liquor (CSF). Computerized tomography, magnetic resonance imaging, immunological test in the serum and cerebrospinal fluid are available options to diagnose the condition (9–15).

Case report

70-year old man shows signs of decreased cognitive capacity, delayed memorization and processing of the task sets. A left-side sway occurs abruptly, when walking or standing. Myotatic reflexes are increased, with subclonus of the left patellar reflex and clonus of the left Achilles-tendon reflex, and subclonus of the right Achilles tendon, right Babinski’s reflex, trunk ataxia. Mini mental tests (MMS) were administered (18 points) and showed the cognition capacity impairment. CT of the brain (by Siemens Somatom EMOTION 2000) shows multiple lesions with dimensions up to 2 cm. In the pons there is a suspected punctiform hyperdensation. In the left thalamus a solid lesion and a cystic lesion up to 1.5 cm in size e are evident. In the right thalamus, there is a hyperdense lesion about 1.8 cm in size. Multiple hyperdense lesions are evident also bilaterally frontally, occipitally and left temporally. The occipital and the parietal lesions are partly cal-

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cified. Diffuse atrophic changes resulting in dilatation of all liquor spaces. The ventricular structures are pushed medially with no relocation of asymmetrical lateral brain ventricles (Fig. 1).

MRI of the brain (by Shimatzu EPISUS 0.5T) showed status after parasitary infection of the brain with multiple multicentric lesions. Near the right thalamus there is an annular hypertensive signal in T1 and T2-weighted images, without a postcontrast opacification (Fig. 2).

The serum and liquor tests, including the ELISA test for cysticercosis, are negative, as well as the toxoplasmosis, echinococcus and neurotropic viruses tests. The immunological tests are negative. The radiological examination of the lungs showed no pathomorphological changes.

Discussion

Everything indicates that this is a case of isolated cysticercosis of a very much non-specific clinical status. It is well known that the most often symptoms of this disease are epileptic seizures, headache, high intracranial pressure, which have not been registered with this patient (6–8). Other authors (16) describe impairments of cognition with a number of patients, measured on the MMS scale, and impaired cognition abilities have been found with our patient. The truncal ataxia and damages of the corticospinal way, dominating with our patient, but with no signs of high intracranial pressure, make an atypical image of neurocysticercosis. However, the neurological dysfunctions and the clinical status are explained by multiple multicentric lesions, whereas no appearance of headaches and high intracranial pressure may be explained with marked atrophic changes of the brain. The basic diagnostic leads (17, 18), however, are the neuroradiological tests, CT and MRI of the brain, showing calcified formations (19, 20) as well as certain stages of the larvae development. The ELISA tests are false negative in almost a half of other authors’ patients (15, 20), wherefore they cannot be deemed neither specific nor sensitive tests. In our research, with a non-specific clinical status and specific image of the calcified multiple changes of the brain established by CT, and characteristic multiple lesions of the brain that show cysticercs in various development stages, make basis of diagnostics of neurocysticercosis. The brain lesions present explain the neurological signs of the disease, totally non-specific for the disease.

References


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