An unusual intraventricular lesion: tuberculoma

A 22-year-old male patient was admitted to our hospital because of an increasingly severe headache that had lasted for 3 months. The patient had no history of tuberculosis. Physical examination was normal. Lumbar puncture of the cerebrospinal fluid (CSF) revealed 240 cells/mm³ with 88% lymphocytes. The protein level was 220 mg/dl and the sugar level was 35 mg/dl. Anticyticercal and antimycobacterial antibodies were negative. Magnetic resonance imaging (MRI) examination revealed asymmetrical hydrocephalus. T1-weighted imaging showed a round hypo-intense lesion within the right occipital horn, while T2-weighted imaging showed a peripheral low signal intensity of the lesion within the right occipital horn (Fig. 1a and b). Ring-like contrast enhancement was seen around the lesion (Fig. 1c and d).

On the basis of clinical and radiological findings, the lesion was removed surgically. Histopathological examination revealed that the lesion was composed of epithelioid histiocytes, Langhans-type giant cells, lymphocytes and caseous necrosis. These histological findings were consistent with tuberculoma.

Central-nervous-system infection with Mycobacterium tuberculosis is seen either in a diffuse form as basal exudative leptomeningitis or in a localized form as tuberculoma, abscess or cerebritis [1]. The incidence of intracranial tuberculoma is only around 0.15—0.18% in the developed world, but is higher in the underdeveloped countries and in immigrants from underdeveloped countries [3,4]. Tuberculomas may be non-caseating, caseating with a solid center or caseating with a necrotic center. They are usually located in the frontoparietal region and in the basal ganglia, and rarely in the corpus callosum, quadrigeminal cistern, cerebellopontine angle or suprasellar region [2].

The typical feature of tuberculoma, the so-called "target sign", comprises central calcification with a ring-like area of enhancement after injection of contrast. Intraventricular tuberculomas are rare and only a few cases have been reported [2—5]. Of the cases in the literature, the lesions were located either within the frontal horn, the body of the ventricle or in the third ventricle.

As it is so rarely seen, preoperative diagnosis remains clinically and radiologically difficult. Chest radiography,
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tuberculin testing, blood and CSF smears, and cranial computed tomography (CT) and magnetic resonance imaging may all be useful in making the diagnosis. Magnetic resonance imaging findings vary according to the stage of the lesion. Tuberculomas consisting of non-caseating granulomas are usually hypo-intense compared with normal brain tissue on T1-weighted images, and hyperintense on T2-weighted images. Caseating granulomatous lesions with a solid center appear relatively hypo- or iso-intense on T1-weighted imaging, and iso- or hypo-intense on T2-weighted imaging. In addition, parenchymal tuberculomas and asymmetrical hydrocephalus may be accompanying findings [2]. The differential diagnosis for tuberculomas includes other granulomatous infections and fungal lesions as well as primary or metastatic neoplasms.

References


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