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Case report

A colloid cyst in the fourth ventricle complicated with aseptic meningitis: A case report

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1. Introduction

A colloid cyst is a rare, benign, intracranial lesion that accounts for approximately 0.5–1.0% of primary brain neoplasms. The majority of these cysts are located in the third ventricle of the brain, and it is quite rare to find this kind of intracranial tumor in the fourth ventricle [1,2]. Recurrent chronic aseptic meningitis has been reported secondary to subarachnoid fluid leakage, usually from epidermoid or neurenteric cysts [3]. To our knowledge, aseptic meningitis due to the rupture of a colloid cyst in the fourth ventricle has not yet been reported.

2. Case report

A 46-year-old man with a 17-day history of headache, nausea, vomiting, and fever was admitted to our hospital. The patient reported a similar condition 6 years ago, which was relieved without any medication. Apart from Kernig's and Brudzinski's signs and right gaze disturbance of both the eyes, no other neurological deficits were observed. Computed tomography (CT) of the brain revealed a hyperdense lesion in the fourth ventricle (Fig. 1A), and magnetic resonance imaging (MRI) showed a spherical, nonenhancing lesion in the fourth ventricle that extended through the ventral brainstem sinus into the subarachnoid space. The MRI scan also revealed a vertical band-shaped zone with similar signals in front of the medulla oblongata. When compared with the brain, the mass was hyperintense on T1-weighted images and isointense on T2-weighted images (Fig. 1B–E). Lumbar puncture examination showed an increased leukocyte count (140/mm^3), 90% polymorphonuclear cells, elevated protein (120 mg/dL) levels, and normal glucose levels. Microbiological examination of the cerebrospinal fluid (CSF) revealed negative culture results for both bacteria and fungus.

Suboccipital craniectomy was performed on the patient, and a gray–white spherical mass with a smooth surface and thin capsule was found in the fourth ventricle. After the brownish sticky contents of the mass were aspirated, a funnel-shaped structure formed from the base of the fourth ventricle to the subarachnoid space of the ventral brainstem. The capsule adhered close to the brainstem was not removed completely. Pathological examination of the cyst contents revealed that the cyst contents were strongly positive for the periodic acid-Schiff (PAS) stain and contained some macrophages. The cyst wall was composed of ciliated columnar epithelial cells (Fig. 2), and immunohistochemical examination of these cells showed positive staining with ethidium monoazide antigen, and negative staining with S100B and glial fibrillary acidic protein. On the basis of these results, the cyst was classified as a colloid cyst.

The patient had fever after the operation (temperature, 38 °C), and a subsequent lumbar puncture examination showed an increased leukocyte count (120/mm^3), 90% polymorphonuclear cells, elevated protein levels (123 mg/dL), and normal glucose levels. Microbiological examination showed negative culture results

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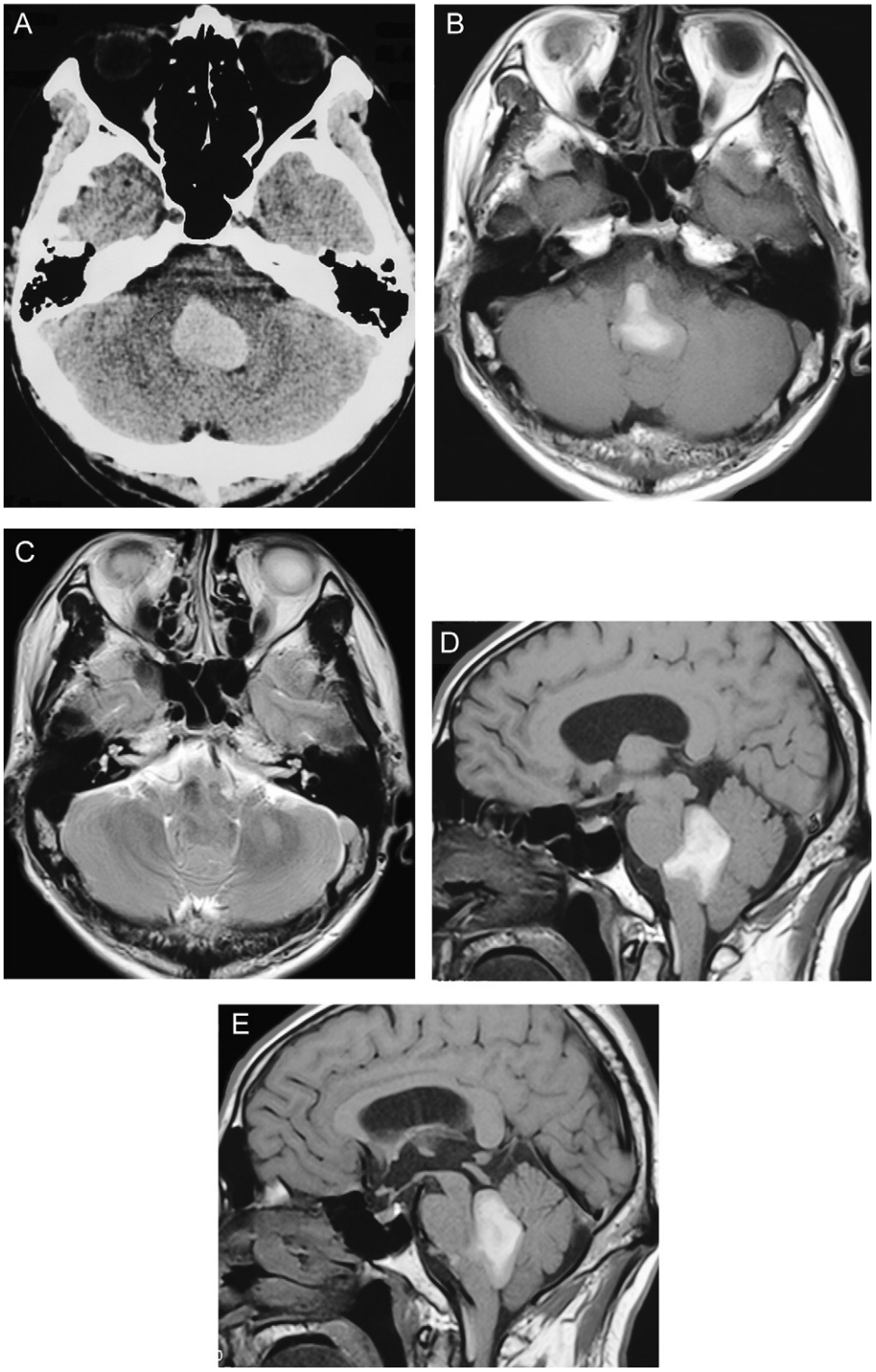

Fig. 1. CT demonstrating a hyperdense lesion in the fourth ventricle (A), respectively, axial and sagittal MRI showing a spherical, nonenhancing lesion in the fourth ventricle that extended through the ventral brain stem sinus into the subarachnoid space and a vertical band-shaped zone with similar signals in front of the medulla oblongata (B–E).

for bacteria and fungus. The patient was treated with dexamethasone, and a repeat lumbar puncture was performed. This investigation showed that the CSF leukocyte count had decreased to normal levels, and this decrease was accompanied by a gradual normalization of body temperature. The patient was discharged from the hospital after 2 weeks. Postoperative MRI performed after 2 months revealed that the lesion had disappeared completely and that the vertical band-shaped zone in front of the medulla had decreased in size (Fig. 3A–D).

3. Discussion

Colloid cysts are rare intracranial tumors that typically develop in the third ventricle of the brain. Other locations of the cyst