CORRESPONDENCES

Migration of an arachnoid cyst of the cisterna quadrigeminalis towards the fourth ventricle

Migration d’un kyste arachnoïdien de la citerne quadrijumelle vers le quatrième ventricle

This is a case report of a 7-years-old boy who suffered sudden vision loss in the left eye that lasted for about an hour. No eye-movement disorder, headache, vomiting or dizziness occurred, and no prior trauma was reported. The child’s milestones were normal. The one-time event was later classified as a form of migraine (either retinal migraine or aura without migraine). In due course, magnetic resonance imaging (MRI) was performed and showed a large cystic formation in the quadrigeminal cistern that was clearly expanding the aqueduct, but with no significant mass effect (Fig. 1). There was no contrast enhancement, and the cystic structure was liquor-isointense on all sequences (T2-weighted, T1-weighted and FLAIR [fluid-attenuated inversion recovery]). Also, no restricted diffusion was seen. Acquisition of a constructive interference in steady-state (CISS) sequence helped to verify the presence of the cyst membrane in the fourth ventricle (Fig. 2).

The possible development of hydrocephalus was the reason for further follow-up examinations at yearly intervals over a period of 3 years. These revealed the progressive descent of the cystic structure through the aqueduct to the fourth ventricle, as well as its gradual reduction in size (Figs. 1 and 2). There was no reported trauma or infection of the central nervous system (CNS) between examinations.

Figure 1  Sagittal (a) and axial (b) T2-weighted MR images reveal a cyst in the quadrigeminal cistern that is causing the aqueduct to expand.

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Despite the large diameter of the cyst, there were no signs of hydrocephalus. Based on the MRI findings, an arachnoid cyst was diagnosed.

The intraventricular occurrence of arachnoid cysts is rare, particularly in the fourth ventricle. Most of these cysts become symptomatic during childhood because of hydrocephalus or cerebellar dysfunction [1]. Arachnoid cysts may be congenital or acquired; their origin, however, is not completely understood. While an increase in cyst size is commonly seen, a reduction has rarely been reported. Explanations for such a finding include minor cranial trauma as the trigger mechanism for leakage from the cyst cavity into the subarachnoid space and its consequential drainage [2], rupture into the subdural space associated with an unprovoked headache [3] and spontaneous regression of a cyst with no associated headache or trauma [4].

Also, a change in the location of an arachnoid cyst has never been reported thus far. We postulate that the natural flow of cerebrospinal fluid (CSF) through the ventricles via the aqueduct was responsible for the slow, gradual descent of the cyst in this case. The absence of hydrocephalus reinforces the theory that this was a dynamic and permeable process.

Thus, our present case is unusual in several respects. The occurrence of a comparatively large arachnoid cyst in the quadrigeminal cistern and its gradual descent into the fourth ventricle via the aqueduct is a rare presentation. The slight reduction in size occurred with no associated minor or major head trauma. Strikingly, the patient had no symptoms of hydrocephalus, despite the expectation that CSF flow would be obstructed. We assume that the manifestation of a possible retinal migraine or aura without headache was unrelated to the cyst. A definitive answer as to the cause of the gradual descent and decrease in cyst size cannot be offered although the most likely explanation would be CSF pressure due to CSF flow.

Disclosure of interest

The authors have not supplied their declaration of conflict of interest.

References


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