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Case Report

GIANT ARACHNOID CYST WITH POSTERIOR FOSSA LOCALISATION: CASE REPORT

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ABSTRACT

Arachnoid cysts constitute 1% of all intracranial lesions. Localisation is most often in the mid cranial fossa and rarely in the posterior fossa. These cysts contain fluid that is biochemically consistent with cerebral spinal fluid. By creating pressure on surrounding tissues, posterior fossa arachnoid cysts can lead to clinical symptoms. However, diagnosis is generally delayed because of the non-specific nature of the complaints, such as ataxia, headache and dizziness. The case is here reported of a patient who presented with complaints of general fatigue and a headache that had been ongoing for more than 1 year, accompanied by nausea for the last 2 months, and during the follow-up for etiology of iron deficiency anaemia, a giant arachnoid cyst was determined.

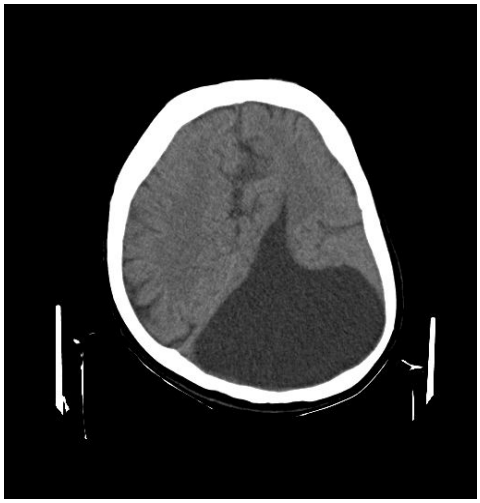
INTRODUCTION

First identified in 1831(1), the majority of arachnoid cysts are congenital in origin and can develop in association with secondary causes such as inflammation and trauma (2). A mechanism noticeable in the formation of arachnoid cysts is a fusion problem, that is the anomaly of two leaves of the arachnoid membrane joining together in the fetal period. These cysts contain fluid that is biochemically consistent with cerebral spinal fluid (CSF). Occasionally, when cysts are complicated as a result of infection or trauma, they may contain fluid that is proteinous or hemorrhagic in nature (3, 4). Arachnoid cysts are seen at the rate of 3:1 in male:female genders and are seen in the left hemisphere at 2-fold the rate in the right hemisphere (5, 6).

The case is here reported of a patient who was being followed up for anaemia and on brain computed tomography (CT) applied for complaints of headache and nausea, was determined with an arachnoid cyst with posterior fossa location. It was aimed to emphasise that all complaints of nausea and vomiting may not be related to gastrointestinal pathologies.

Case

A 50-year old female patient presented with complaints of general fatigue and a headache that had been ongoing for more than 1 year and had been accompanied by nausea for the last 2 months. The neurological and ophthalmological examinations made because of the complaints of headache and nausea were normal and the laboratory test results were found to be compatible with iron deficiency anaemia. Treatment and follow-up for iron deficiency anaemia was started. The patient responded well to the parenteral iron deficiency anaemia treatment, but as the complaints of headache and nausea did not recover, the Neurology Clinic was consulted. Brain CT was taken to determine the etiology of the headache. On CT, a hypodense formation was observed in the left temporo-occipital region, which was thought to be consistent with a giant arachnoid cyst, approximately 10 x 9 cm in size, with an isointense appearance with CSF in a wide area (Figure 1).



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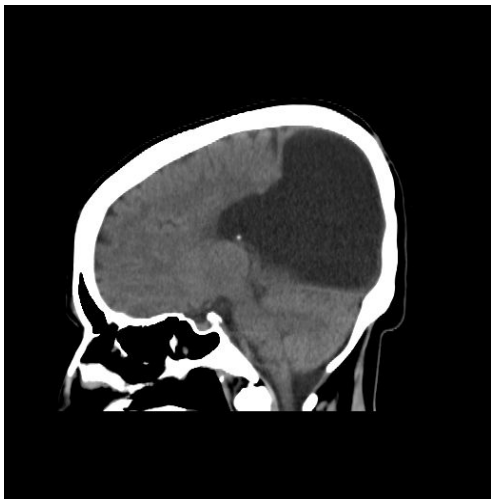

Figure 1 Brain CT showing a giant arachnoid cyst with an isointense appearance with CSF in a wide area of the left temporo-occipital region.

On diffusion magnetic resonance imaging (MRI), a lesion was observed consistent with an arachnoid cyst , 10 x 9 cm in size (Figure 2).

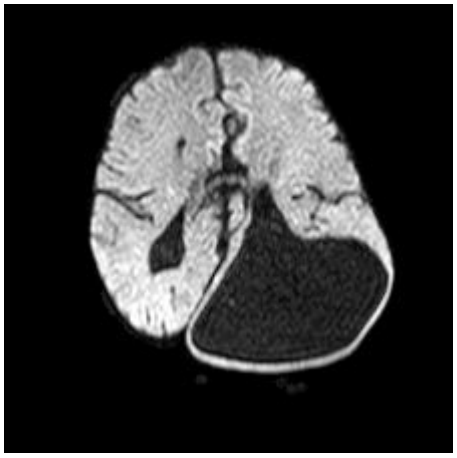

Figure 2 Diffusion MRI showing a giant arachnoid cyst not showing diffusion limitation in the left temporo-occipital region.

DISCUSSION

Arachnoid cysts constitute 1% of all intracranial lesions (7, 8). Although they may be encountered in almost all areas of the central nervous system (CNS), they are typically seen in the mid cranial fossa, the cerebellarpontin corner, the supracollicular region, sella and suprasellar areas and in the vermis (9, 10). The most common localisation is seen in the mid cranial fossa. Posterior fossa arachnoid cysts, as seen in the current case, are more rare and were first reported by Maunsell in 1889 (3). Due to pressure on surrounding tissues, posterior fossa arachnoid cysts can lead to clinical symptoms such as ataxia, headache, dizziness and tinnitus (11). As these complaints are non-specific, diagnosis is generally delayed (12). Arachnoid cysts are asymptomatic benign lesions and the potential for symptoms at an early age is greater than at an older age (3, 13). When arachnoid cysts create clinical symptoms, this is related to the size of the cyst and the interaction with adjacent neural structures (14).

Although normally asymptomatic, following growth the cysts acquire a symptomatic character (probable presssure on neural structures) and the reason for becoming symptomatic can be explained by three basic mechanisms. These are; 1) an increase in oncotic pressure of the fluid within the cyst over time, 2) the formation of a valve mechanism between the cyst and the subarachnoid space and an increase in the cyst content, 3) expression of fluid from the cyst wall (15). In the differential diagnosis, there should be consideration of Dandy-Walker malformation, mega cisterna magna, pilocytic astrocytoma, hemangioblastoma and dermoid and epidermoid cysts (11). The most common complaint in symptomatic cysts is headache (16), and non-specific symptoms related to suboptimal cerebral functions may develop, primarily dizziness, epilepsy and impaired perception (17). In the current case, there were complaints of headache and nausea which had been onging for several months. However, there was no impairment in perception or epileptic seizures. The primary follow-up of the patient by Internal Medicine was anaemia treatment, but when the laboratory values of the previous year were taken into consideration, no abnormality had been determined prior to the decrease in hemoglobin and hematocrit values in the last 2 months. This aroused suspicion that the complaints of the patient could be related to an intracranial lesion. As there were no previous cranial images, brain CT and diffusion MRI were applied. The patient was not able to tolerate a long time in the machine so conventional MRI could not be taken. As a result of the brain CT and MRI examinations, evaluation was made of giant arachnoid cyst. On diffusion MRI, arachnoid cysts are identified as a hypointense signal (18). In a scan of lliterature, no reports could be found of the combination of arachnoid cyst and anaemia. Spontaneous regression is rare in arachnoid cysts (19). In the current case, no hydrocephaly or increased intracranial pressure was determined but because of the headache, nausea and vomiting and the large size of the cyst, the patient was referred to the Neurosurgery Clinic. A cystoperitoneal shunt operation was planned by the neurosurgeon, but the patient refused surgery.

In conclusion, it must not be forgotten that long-term, persistent, non-specific symptoms such as headache and nausea could be clinical projections of underlying intracranial lesions.

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