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Case Report

Spontaneous Disappearance of Cerebral Arachnoid Cyst: A Case Report and Literature Review

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Abstract

Background: Arachnoid cysts are benign extra axial lesions, most commonly located in the fronto temporal region and account for 1% of all intracranial masses. They may remain stable or they may grow in size over time. Reports of spontaneous disappearance of arachnoid cysts are rare.

Case Report: Herein, we report the case of a 1-year-old boy with a middle fossa arachnoid cyst revealed by convulsive seizures, managed with anti epileptic drugs, 13 months later, the patient had one seizure episode, the cranial computed tomography Scan showed nearly total disappearance of the arachnoid cyst and the appearance of subdural hematoma. No surgical intervention was performed. Follow-up CT scans 1 month after admission, showed total disappearance of both the arachnoid cyst and the subdural hematoma.

Keywords: *Arachnoid Cyst; Spontaneous Resolution*

Introduction

Arachnoid cysts are rare benign congenital extra axial lesions, which consist of collection of cerebrospinal fluid (CSF) surrounded by normal arachnoid membrane.

They account for approximately 1% of all intracranial space-occupying lesions, with a higher prevalence in the first 2 decades of life [1].

Most arachnoid cysts are quiescent and remain asymptomatic throughout life.

They are incidentally detected on CT or magnetic resonance images [2].

The cyst may progress, stabilize, or spontaneously regress [3,4].

Spontaneous regression of an AC has been rarely reported in the literature [5,6].

In our knowledge, his is the second arachnoid cyst which resolved spontaneously in less than 2 year [7].

Case Report

A 1-year-old boy was admitted to pediatric emergency department for two episodes of non-febrile generalized seizure.

On clinical exam, there was no focal neurological abnormality, cranial nerve deficit or papilledema. His head circumference was normal.

Brain magnetic resonance MR imaging showed a well defined, no enhancing, extra-axial cystic lesion in the right frontotemporal region, between the tabula interna and the insula. The lesion is isointense to CSF on T1 and T2 weighted images (Figure 1). This fluid collection suppresses completely with FLAIR and shows no restriction on DWI. The diagnosis of a right frontotemporal arachnoid cyst was made. The patient was putted under antiepileptic drug with seizure freedom in the first follow-up.

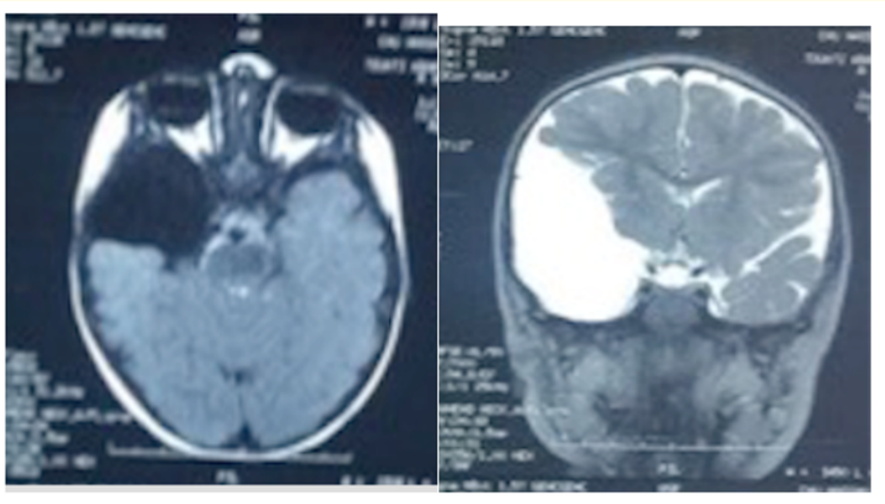

Figure 1: *Brain MRI at the age 2 years showing a right sylvian cystic lesion isointense to CSF on T1 and T2 weighted images.*

13 months later, the patient was presented with another seizure episode; there was no cranial trauma.

The neurological examination was unremarkable.

Unexpectedly, the brain CT scan showed a subtotal resolution of the arachnoid cyst with a subdural hematoma on the same side (Figure 2), we decided to observe the patient without surgical intervention.

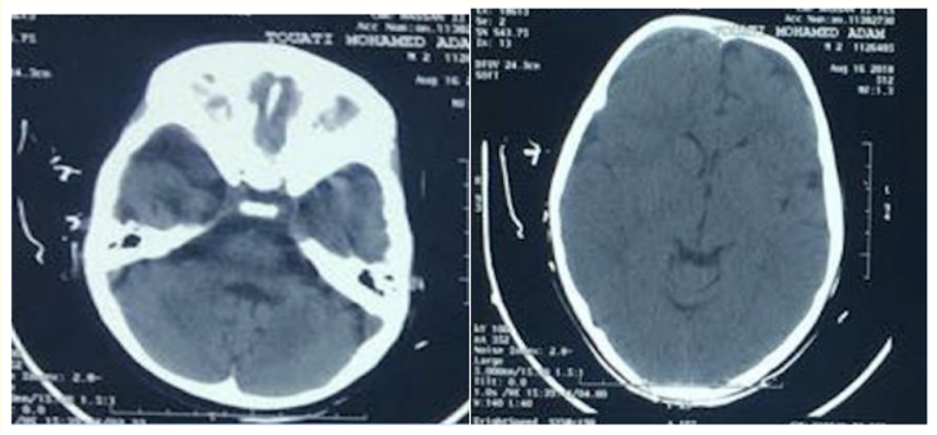

Figure 2: *Follow-up cranial CT scans performed after the 13 months showing subtotal resolution of the arachnoid cyst with a subdural hematoma on the same side.*

At a 1-month follow-up, the CT scan control showed total disappearance of both the arachnoid cyst and the subdural hematoma (Figure 3).

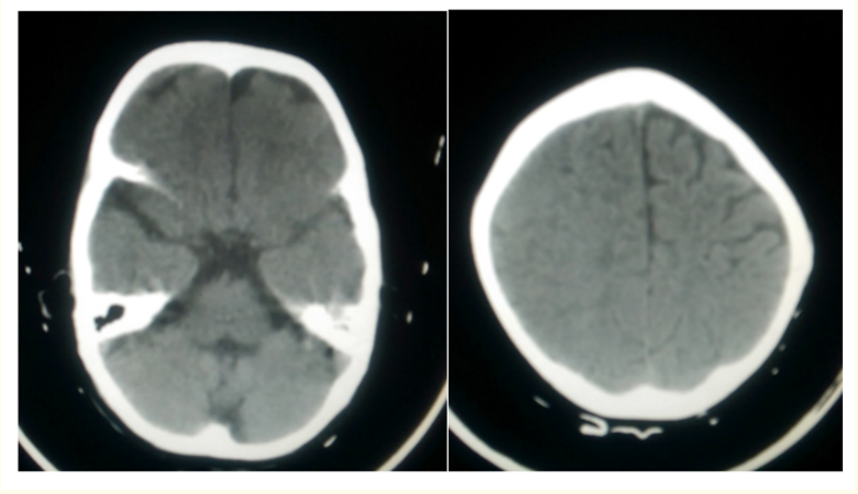

Figure 3: *Follow-up CT scans performed after 14 months showing complete disappearance of the arachnoid cyst and SDH.*

Discussion

First described by Bright R in 1831 [8]. ACs are benign cystic lesions, which consist of CSF collections between the two layers of arachnoid membrane, by definition three criteria are required for a lesion to be considered an AC: 1/ it must be enveloped by an arachnoid membrane, 2/ it must contain arachnoid mater cells, and 3/ it must contain CSF [9].

They can be congenital or acquired after surgical trauma, infection, hemorrhage [10].

In most cases, ACs are asymptomatic, the diagnosis is an incidental finding. When they are symptomatic, they are resulting of the direct compression of surrounding structures, ACs are relatively rare. The reported incidence accounts for only 1% of intracranial space-occupying lesions [11].

On CT, ACs manifest as extra-axial cysts with the density of CSF, it does not enhance after injection. MRI signals are similar to CSF in T1- and T2-weighted imaging with no enhancement on gadolinium.

Diffusion-weighted MRI has proved to be a very useful for the differential diagnosis that include other cystic lesions [12].

Arachnoid cysts may remain stable or they may grow in size over time, In rare cases ACs may resolve spontaneously [7].

The mechanism of spontaneous disappearance of ACs has not been described in the literature. Probably Communication between an AC and the subarachnoid space may be direct transport through the cyst wall or it may be a valve-like mechanism [13].

Rupture of arachnoid cyst associated to subdural or intracystic effusion or bleeding is a rare complication. It occurs mostly after a head injury [14].

In this case, there was no history of head trauma, the cyst resolved spontaneously with the appearance of a subdural hematoma SDH.

In the literature, there are only a 11 of reports of spontaneous SDH complicating an arachnoid cyst [15,16].

The management modality of asymptomatic ACs is not clear. However, surgical treatment is suitable for large or symptomatic ACs [17].

SDH associated with ACs spontaneously or due to traumas should be treated in an individual-based manner that is specific to each case, either conservatively or surgically [17,18].

In our case report, based on the clinical assessment no intervention was required.

Conclusion

The present case and the few reported cases of spontaneous disappearance of ACs suggest a more conservative approach in patients without asymptomatic ACs. Thus, we report highlight the interest of regular follow up of patients with known ACs.

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