A CASE OF SYMPTOMATIC INTRACRANIAL ARACHNOID CYST

Muhammad Syahir Tajuddin MD[1], Nelson KB Yap Msurg (Neurosurgery)[1]
[1]Department of Neurosurgery, Sibu General Hospital, Malaysia

INTRODUCTION

Intracranial arachnoid cysts are collections of cerebrospinal fluid (CSF) covered by arachnoid cells and collagen that account for about 1% of all intracranial lesions[1,2,5]. Arachnoid cysts occurs within the arachnoid membrane and in subarachnoid space of the major cerebral fissures and arachnoid cistern, most commonly within the Sylvian fissure and other sites [2,3]. While cysts are usually encountered as incidental asymptomatic findings, some of them can expand, can compress surrounding structures, and therefore became symptomatic, mostly in early childhood[2,5]. Neurological signs and symptoms reflect the size and anatomic distribution of arachnoid cyst as well as their impact on CSF flow[3,5].

METHOD

A retrospective case report whereby the patient was followed up for 6 months to date.

CASE PRESENTATION

A 23 years old man with no known medical illness, presented with left-sided on and off headache for 2 months associated with diplopia on right lateral gaze for 1 week. On examination, he was alert, pink and well built. Cranial nerves examination revealed numbness over the left side of his face with left sixth nerve palsy. Fundoscopic examination revealed papilledema grade III. Otherwise, there were no signs of meningism. Contrasted CT brain and subsequently MRI brain revealed a cystic lesion sized 3x3x5cm at the left temporal fossa. The patient was then diagnosed to have a left temporal fossa arachnoid cyst.

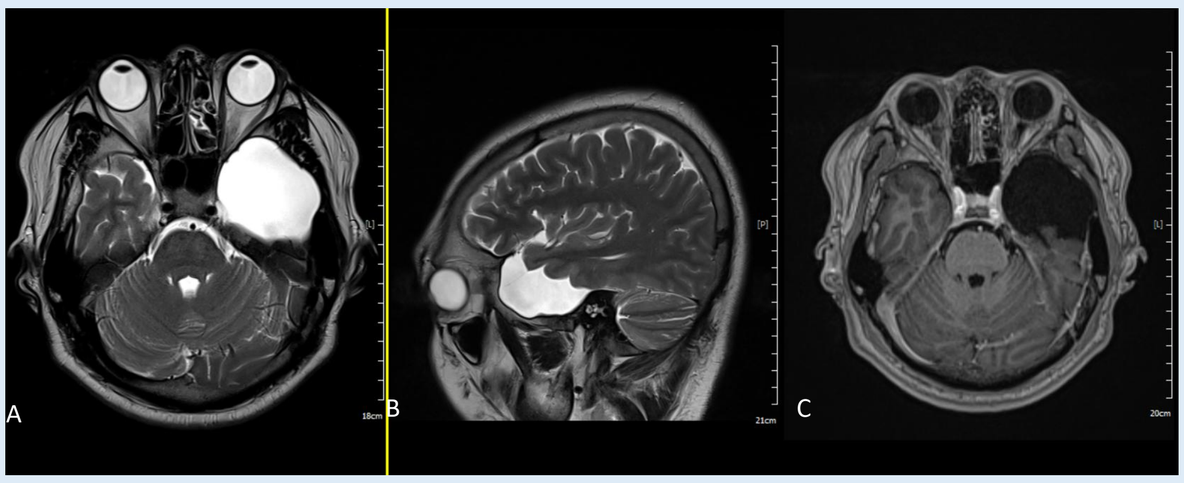

Figure 1: MRI Brain showing well defined hyperintense at T2 sequence (image A and B) and hypointense at T1 post contrast sequence (image C) fluid-filled lesion (3x5x5cm) detected at the left anterior temporal fossa with mass effect on left temporal lobe

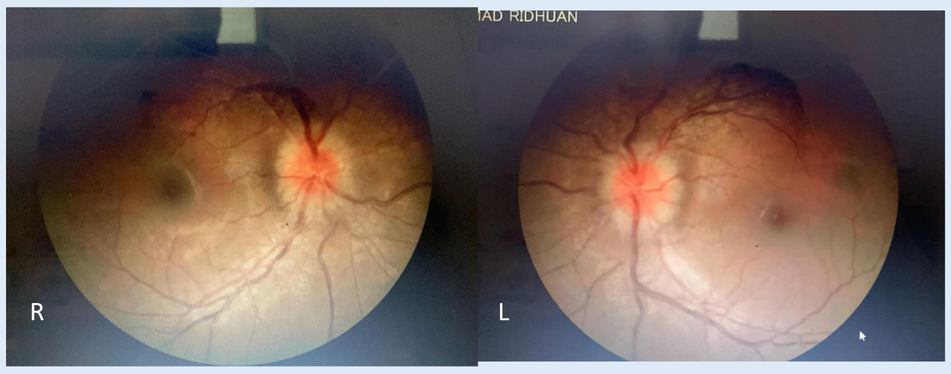

Figure 2: Fundoscopy examination showing bilateral papilloedema grade III

Lumbar puncture was done and the opening pressure was only 14mmHg with no evidence of infection. However, after the lumbar puncture, his symptoms persist. He was then scheduled for left temporal craniotomy and arachnoid cyst marsupialization. During the surgery, all the surrounding cisterns were fenestrated too. The cystic fluid did not show any infective picture and the cystic wall was confirmed to be an arachnoid cyst. Post-operative CT brain showed a significant reduction in the size of the arachnoid cyst. Most importantly, left sided facial numbness, left sixth nerve palsy and headache resolved and he was able to be back to work. Fundoscopic examination at 2 months post operation revealed improving papilledema to grade I.

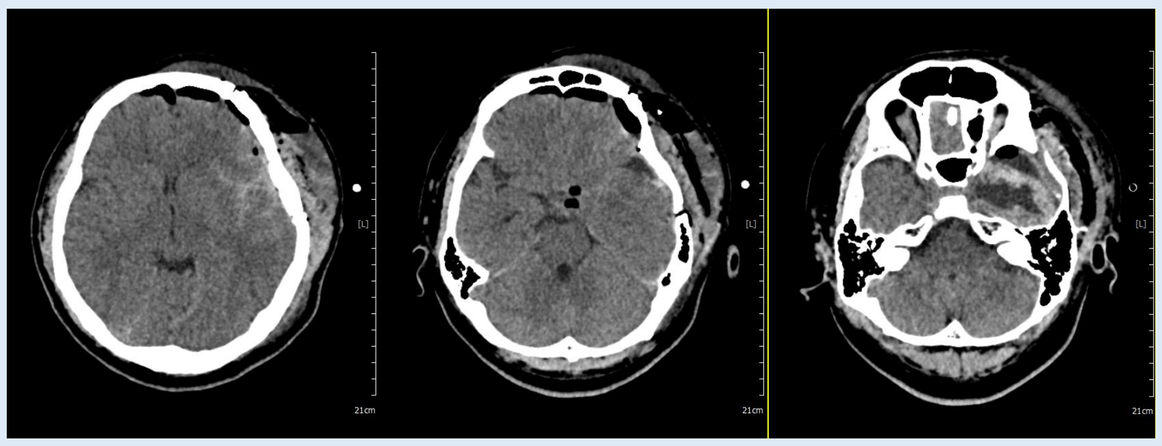

Figure 3: Post operative CT brain plain show siigificant reduction of left temporal mass.

DISCUSSION

The etiology of arachnoid cysts yet remains unclear. Several theories have been proposed to explain the arachnoid cyst genesis such as corpus callosum agenesis, aberration in the development of the arachnoid, malformations of the cerebral venous systems, or CSF flow abnormalities[2,3,4].

Most arachnoid cysts are asymptomatic and may not produce any symptoms throughout life. They are generally diagnosed incidentally on CT scan and MRI. Symptoms are produced when arachnoid cysts are large or are complicated by subdural hematoma or intracystic hemorrhage. The bleeding is probably caused by the disruption of cortical veins that frequently traverse the cyst near its periphery[5]. Symptomatic intraventricular arachnoid cyst must be treated appropriately and surgical approach was recommended to improve symptoms[6] .

CONCLUSION

Arachnoid cysts are usually treated conservatively. However, symptomatic ones require thorough examination and investigation before we subject the patient to surgery. Cyst location is vital in determining the type and approach of surgery.

References:

1. Iglesias JR, Sanjuanbenito L, Martinez-Cubells J, Lousa M, Redondo C. Intracerebral arachnoidal cyst containing choroid plexus: case report. Acta Neurochir. 1981;58(3-4):229–34.
2. Cincu R, Agrawal A, Eiras J. Intracranial arachnoid cysts: current concepts and treatment alternatives. Clin Neurol Neurosurg. 2007;109(10):837–43.
3. Pradilla G, Jallo G. Arachnoid cysts: case series and review of the literature. Neurosurg Focus. 2007;22(2):E7.
4. Park KJ, Kang SH, Chae YS, Chung YG. Supratentorial arachnoid cyst located in the brain parenchyma: case report. Neurosurgery. 2011;68(1):E258–62.
5. Barkovich AJ. 3rd ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2000. Pediatric Neuroimaging; pp. 592–5.
6. Bang JS, Oh CW, Kim MS, Choe Gy, Cho BK, Hong SK, Han DH. Two Cases of Intraventricular Arachnoid Cysts: Case report. Journal of Korean Neurosurgical Society. 2001;30(7).