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ASYMPTOMATIC ARACHNOID CYST PRESENTING WITH SUBDURAL HYGROMA AFTER CYST RUPTURE: A RARE COMPLICATION

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INTRODUCTION

Arachnoid cysts are well-recognized, benign intracranial lesions, occurring most commonly in the middle cranial fossa. Although most arachnoid cysts are asymptomatic, they may be associated with a more complicated course, causing mass effect or hydrocephalus. Spontaneous and post-traumatic intracystic and subdural haemorrhage has also been reported. We describe a case of a very rare complication of symptomatic rupture of a middle cranial fossa cyst into the subdural compartment.

CASE

A 20 year-old male patient presented with a history of severe headache and nausea for two months in the background of a history of mild head injury sustained just prior to the onset of symptoms. There was neither any history of loss of consciousness at the time of injury nor any history of weakness over one side of the body or seizures. On further questioning, he reported having visual problems for which he visited an ophthalmologist and was found to have papilledema on fundoscopy. His neurological examination was unremarkable and there was no focal neurological abnormality. He had no significant past medical history. MRI of the brain showed a left middle cranial fossa arachnoid cyst with an associated left-sided subdural hygroma, causing mass effect on adjacent brain. Burr hole drainage was done which revealed clear CSF and patient made an uneventful recovery with complete resolution of symptoms almost immediately after the surgery.

DISCUSSION

Arachnoid cysts are usually diagnosed incidentally on CT scan and MRI. Symptoms are produced when arachnoid cysts are large or when they are complicated by subdural hematoma. The bleeding is probably caused by the disruption of cortical veins that frequently traverse the cyst¹. Rarely, arachnoid cysts may become symptomatic due to the development of a subdural hygroma following traumatic or spontaneous rupture².

Early diagnosis of this complication has implications in the management of these patients because there is a possibility of re-accumulation of cyst fluid in the subdural compartment despite burr hole drainage of the collection. This is due to the possibility of a communication developing between the arachnoid cyst and the subdural compartment following rupture. This can be managed by inserting a drain for immediate definitive treatment. MRI is a modality of choice to distinguish between acute or subacute hemorrhage and subdural hygroma.

Although the precise pathogenesis of a subdural hygroma in a patient with an intracranial arachnoid cyst is not fully understood, trauma appears to be the most important causative factor. This trauma is often of little value³. The gradual seepage of the CSF from the cyst into the subdural space, probably occurs through a "flap- valve" effect which causes a gradual rise in the intracranial pressure³. The majority of arachnoid cysts complicated by subdural hygromas are located in the middle cranial fossa⁵.

Our patient had a relatively large middle cranial fossa cyst, which was asymptomatic prior to its rupture. The patient developed symptoms of raised intracranial pressure, following a minor head injury, which supports the policy of several sporting bodies to disallow patient known to have intracranial arachnoid cysts, from any form of contact sports. Though the majority of arachnoid cysts can be managed conservatively, surgical treatment is appropriate, as in our case, when there is an associated subdural hygroma.

CONCLUSION

We have demonstrated the rupture of a middle cranial fossa arachnoid cyst into the subdural space without hemorrhage. It is a rare complication which occurred following minimal trauma. It is well recognized that arachnoid cysts may be associated with acute and eventually chronic subdural blood following rupture due to tearing of the vessels that bridge the cyst wall. But non-hemorrhagic rupture into the subdural compartment

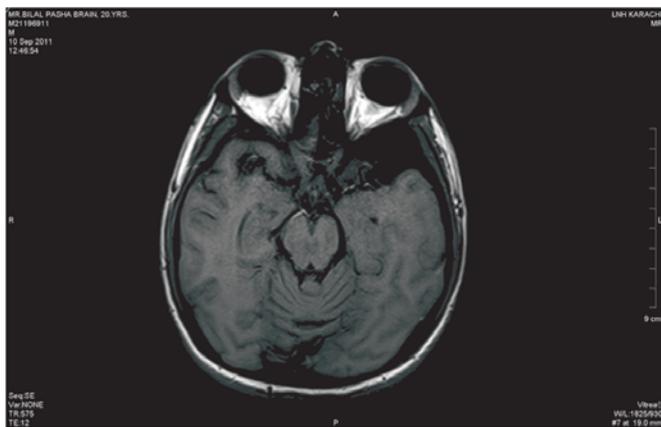


Figure 1: T1 WI showing arachnoid cyst in left middle cranial fossa

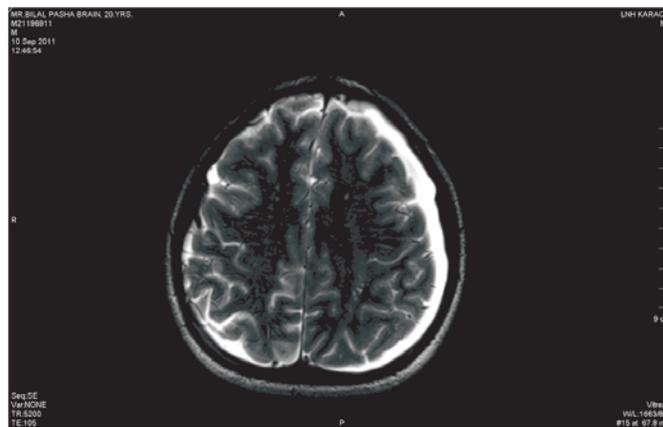


Figure 2: T2 WI with subdural hygroma on left side



Figure 3: Post Contrast coronal view



Figure 4: T2 WI showing ruptured arachnoid cyst into left middle cranial fossa

is an important radiological differential diagnosis to be considered.

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