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Acute Onset Hydrocephalus Caused by Colloid Cyst

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BACKGROUND/INTRODUCTION:

A headache in a young individual can often be regarded as a benign condition with a low mortality burden. In many cases, the young patient is diagnosed with a primary headache (i.e. migraine, tension, and cluster headache) but in rare cases the initial headache is a symptom of a severe underlying pathology. The case we present is of a tragic outcome resulting from the hemorrhagic transformation of a colloid cyst that initially presented as an insidious headache. It is important for the clinician to recognize the red flag symptoms associated with a headache in order to keep a broad differential diagnosis in mind.

CASE REPORT

The patient is a 36 year old male with no previous past medical history that presented after a week of a persistent headache despite taking over the counter pain medications. His headache initiated insidiously but slowly increased in severity leading to intractable nausea and vomiting, acute encephalopathy, and slurred speech. Initial lab results were unremarkable. A drug screen resulted in positive marijuana use, consistent with family reports of daily cannabis use. A non-contrast computed tomography (CT) scan of the head demonstrated ventriculomegaly of the lateral and 3rd ventricles with no obstruction appreciated. The patient was promptly initiated on mannitol, steroids, antibiotics, and antiviral medications for possible meningitis and encephalitis. A lumbar puncture was performed with unremarkable findings, ruling out meningitis. Despite intervention, his condition continued to deteriorate requiring intubation for respiratory support and airway protection. Within hours upon arrival he developed signs of severe neurological damage including fixed dilated pupils and extensor posturing. An emergent ventriculostomy with VP shunt was performed to decrease the intracranial pressure. Further workup included CT angiography of the head and neck and cerebral angiography which were negative for any vascular abnormality. At this point the differential diagnosis included an obstructive hydrocephalus process, posterior reversible encephalopathy syndrome, reversible cerebral vasoconstriction syndrome, and vasculitis. A diagnosis was made after the MRI of the head revealed a 17 mm obstructive hemorrhagic colloid cyst. Accompanying findings on MRI included extensive ischemic changes to the thalami, internal capsules, cerebral peduncles, hippocampi, and amygdalae. The symmetry and distribution of ischemia was suggestive of a venous insufficiency infarct pattern rather than arterial process. Due to infarction of vital structures and poor neurological function no surgical intervention was performed and the patient was eventually transitioned to hospice care due to grim prognosis.

CONCLUSION/DISCUSSION:

Colloid cysts make up < 2% of all intracranial tumors and represent < 0.01% of cases of sudden death (2,6). Research suggests that colloid cysts arise from a congenital malformation of choroidal cells of the remnant embryonic paraphysis (1,2). Due to their embryonic origin, colloid cysts are usually located at the anterior 3rd ventricle (1). Most lesions are often found incidentally but colloid cysts have been noted to gradually expand with symptom onset from the 2nd to 5th decades of life (3,4,5,6). The most common presenting symptoms include headache, vomiting, and vision changes. Rapid expansion with acute neurological decline occurs in a minority of cases with intralesional hemorrhage leading to obstructive hydrocephalus (2,7,16,17). This was probably the underlying pathology in our case as evidenced by the MRI findings. Unfortunately, at the time of diagnosis, the patient had suffered irreversible injury to vital areas in the brain and he was transitioned to end of life care. It is important to note that 98% of all headaches are diagnosed as primary headaches and require no specific testing. In a few cases, red flag symptoms, such as, a thunderclap headache, persistent morning headache with nausea, and a progressive headache over weeks can point providers to investigate further. In this case, early recognition of the red flag symptoms by the patient and family could have prompted him to seek medical attention and get further testing. Colloid cysts have no close association to other medical illnesses and the lack of symptoms until becoming obstructive, increases the possibility to be overlooked by both patients and medical professionals. A high degree of suspicion needs to be maintained in these cases. Our case demonstrates an example of red flag symptoms leading to a debilitating and ultimately fatal neurological outcome.

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