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Case Report

Cerebral Artery Aneurysm Masquerading as Ptosis in a Child

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Abstract

An 8-year-old female presented to Eye OPD of Dhulikhel Hospital, Kathmandu University Hospital, with drooping of the right upper lid and inability to move right eye ball since 3 days. She had no history of trauma or fall injury. On ocular examination, visual acuity was 6/6 on both eyes and there was severe ptosis on the right eye in which eyeball remained abducted with restriction of ocular motility on all gazes. The pupil was dilated and 6mm on the right eye in room light. Posterior segment examination was normal. MRI angiography was done which revealed a right Posterior cerebral artery aneurysm.

Introduction

Etiology of acquired third nerve palsy in children is considered to be slightly different from adults. In children, trauma, inflammation, viral infections, and tumors are particularly the speculated causes (Branley et al., 1992) an Aneurysm is considered an uncommon cause of 3rd CN palsy in children. (Miller, 1977) Also to consider in a child with sudden onset ptosis is myasthenia gravis. France was the first to correlate the autopsy finding of an intracranial aneurysm with the clinical finding of third cranial nerve palsy. (France, 1846) Similarly, many other studies conducted by many researchers have recognized the important association between pupil involving 3rd CN palsy and intracranial aneurysms. (Harris et al., 1957), (Hyland et al., 1954), (Jaeger, 1950) the involvement of the pupil is one of the main signs to differentiate between 3rd CN involvement due to an aneurysm and diabetes. (France, 1846) ,(Wre Green et al., 1964), (Kerr et al., 1964) Moreover Glaser has strongly stated that a normal pupil in a patient with 3rd CN palsy excludes the posterior communicating aneurysm. (Glaser, 1978) Similarly, Walsh and Hoyt also suggest that in isolated oculomotor palsy, if the pupil is spared, the etiology of the problem is not an aneurysm. (Walsh et al., 1969)

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Case report

An 8-year-old female presented with a history of sudden onset drooping of the right eyelid and inability to move right eyeball since 3 days. She had no history of trauma or fall injury. Similarly, there was no history of weakness of limbs, slurring of speech, nausea or vomiting or diminution of vision. The child did not give a history of double vision. On ocular examination, visual acuity was 6/6 on both eyes and there was severe ptosis on the right eye in which eyeball remained abducted with restriction of ocular motility on all gazes. The pupil was dilated and 6mm on the right eye

in room light. Posterior segment examination was normal.

The patient was advised for MRI angiography of brain and orbit visualizing 3rd and 4th Cranial nerves and the visual pathway along with the vascular supply. It showed right posterior cerebral artery aneurysm with the left subarachnoid cyst.

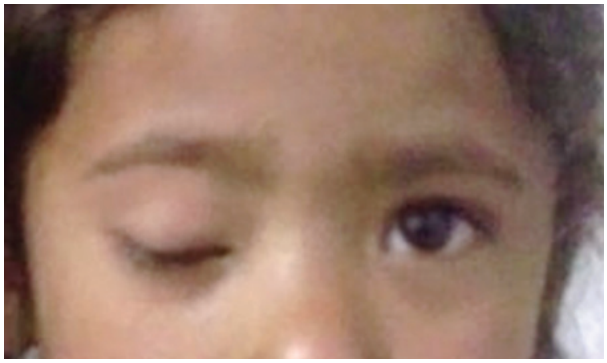

Figure 1: Severe Ptosis right eye

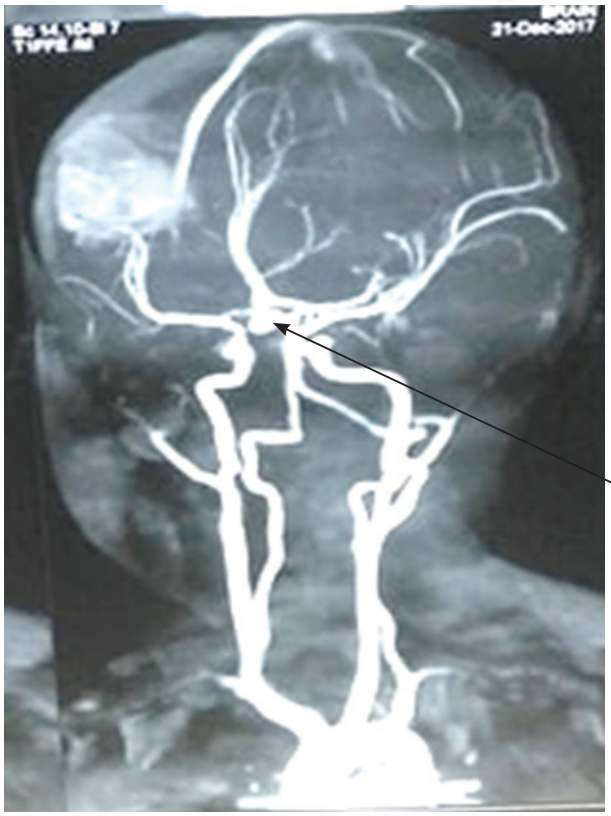

Figure 2: MRA showing Right PCA aneurysm with left temporal subarachnoid cyst extending to sylvian fissure

The patient was then urgently referred for neurosurgical intervention after proper counseling of the condition. The patient underwent aneurysm clipping alongside excision of a subarachnoid cyst under general anesthesia. However patient died on the 2nd postoperative day.

Discussion

3rd cranial nerve innervates the four extraocular muscles (the superior rectus, inferior rectus, medial rectus, and inferior oblique) and the levator superioris. In addition to this, it supplies the presynaptic parasympathetic outflow from the Edinger-Westphal nucleus to the pupillary sphincter and ciliary body. Thus it controls elevation, depression, and adduction of the eye, as well as eyelid elevation, pupillary constriction, and lens accommodation and consequent palsy of the 3rd Cranial nerve affects these functions to various degrees depending on the location and the etiology of the lesion. (Yanovitch et al., 2007)

Most commonly patients present with eyelid drooping, blurred and/or double vision along with neurologic signs/symptoms such as tremor, ataxia or hemiplegia. (Yanovitch et al., 2007) In our case, the child did not complain of diplopia which can be due to the state of shocks and anxiety that she was in. Pupillary involvement in association with third cranial nerve palsy warrants urgent MRI/MRA to rule out probable aneurysm. (Jacobson et al., 1999)

Conclusion

Correct and prompt diagnosis of 3rd cranial nerve palsy particularly in pupil involved case is vitally important because of an aneurysm, if the cause, can act as a ticking time bomb which can cause life-threatening complication at any time.

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