

## Bilateral third nerve palsy due to a midbrain cavernoma

Received: 12 Sep. 2020  
Accepted: 04 Nov. 2020

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### Keywords

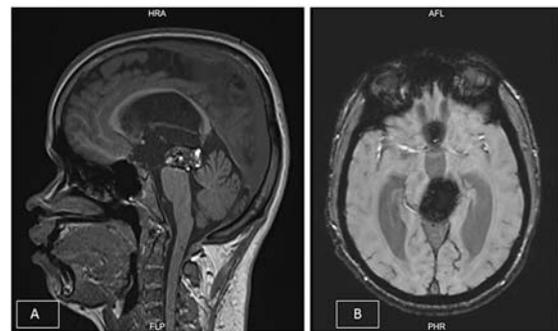
Third-Nerve Palsy; Mesencephalon; Ptosis; Hemorrhage

Cavernous cerebral malformations occur in 0.4-0.6 percent of population. We report a rare case of a midbrain cavernoma causing bilateral third nerve palsy.

22-year-old man presented with headache from 5 days before, associated with drooping of upper eyelids in both eyes. Ventriculo-peritoneal shunting was done at 10 years of age about which no details were known. On examination, he had mild ptosis in right eye and severe ptosis in left eye. Both pupils were mid-dilated and fixed. His extraocular movements were suggestive of bilateral third cranial nerve palsy. Neuroimaging showed a large cavernoma with hemorrhage in the midbrain, compressing both the nuclei and fascicular portions of bilateral third nerves (Figures 1 and 2). He was immediately referred to a neurologist for further management.

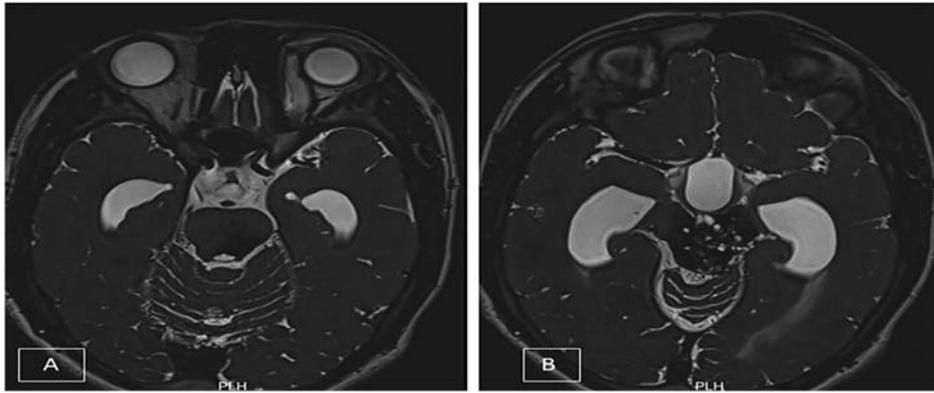
Cavernous cerebral malformations occur in 0.4-0.6 percent of population. 75% are found at the supratentorial region, and 20%-30% in the brainstem.<sup>1</sup> Due to their location in the brainstem, hemorrhages exert pressure on the surrounding

cranial nerve nuclei and tracts, leading to neurological deficits in 60% of patients.<sup>2</sup> Pediatric brainstem cerebral malformations are larger and more likely to rebleed after surgery compared to those in adults.<sup>3</sup>



**Figure 1.** A: T1 sagittal image shows cavernoma with varied stages of hemorrhage in the mid brain region causing obstruction of aqueduct; B: Susceptibility weighted image shows intense blooming of the lesion secondary to hemorrhagic components.

**How to cite this article:** Seetharaman C, Vasudev H, Shah VM. Bilateral third nerve palsy due to a midbrain cavernoma. *Curr J Neurol* 2021; 20(1): 52-3.



**Figure 2.** A: T2 space axial image shows thinning of cisternal segments of both oculomotor nerves, more severe in left side; B: T2 space axial image shows the cavernoma involving tectum and tegmentum of both halves of midbrain and involving the regions of oculomotor nuclei and fascicular portion of bilateral oculomotor nerves (L > R). The lesion is causing obstruction of aqueduct and secondary hydrocephalus also.

Hence, though rare, midbrain cavernomas should be kept in mind when bilateral third nerve palsy has been clinically diagnosed, and urgent imaging and referral to the neurologist should be made as cerebral malformations have serious complications and therapeutic risks, especially in the young.

#### Conflict of Interests

The authors declare no conflict of interest in this study.

#### Acknowledgments

None.

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