Nepal Journal of Neurosciences 16:65-66, 2019

Giant Thrombosed "Divine Clipped" Vertebral Artery Aneurysm Presenting with Severe Vertigo

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Posterior circulation aneurysm is very uncommon (20%) and vertebral artery (VA) are even rarer with only 0.3-3% of all intracranial aneurysms with limited known natural history. They can be extracranial or intracranial in location from the foramen magnum, vertebral-posterior inferior cerebellar artery junction to the vertebral-basilar junction.[3,4] Due to the difficult location and its rare presentation they are a challenge to most neurosurgeons. They can be saccular, dissecting or atherosclerotic fusiform type.[2] They classically present with sudden onset headache, nausea, vomiting, gait disturbance, seizure, loss of consciousness, features of stroke or embolism and vertigo. Features of meningism, isolated neck pain and features of backache can also be present.[1,4]

A 56-year old male presented with sudden severe vertigo without tinnitus, headache, difficulty in walking and disorientation to time and person for seven days. There was no history of fever, trauma, vomiting, seizure or any significant other medical history. He was initially managed with ear nose throat surgeon with no relief of symptoms. On examination he was conscious but disorientated. There was no cranial nerve, motor or sensory deficit. His hematological and biochemical profile was in normal range. Computed Tomogram (CT) was done which showed a large 4X4 cm well-defined calcified mass with internal hypodensity in the left cerebellar hemisphere without edema. An initial diagnosis of metastases or glioma was suspected and a Magnetic Resonance Imaging advised (MRI). MRI showed a left cerebellar 4X3.7X3 cm relatively well-defined lobulated lesion with concentric signals, central T1 hyperintensity, hypointense T2/FLAIR signal without any enhancement on contrast. There was mild perilesional edema and was indenting the adjacent cerebellum, pons, displacing the medulla and IVth ventricle to the opposite side. The features were suggestive of a thrombosed left vertebral aneurysm. CT angiography was then done which showed non filling of the left intracranial vertebral aneurysm just distal to the foramen magnum and

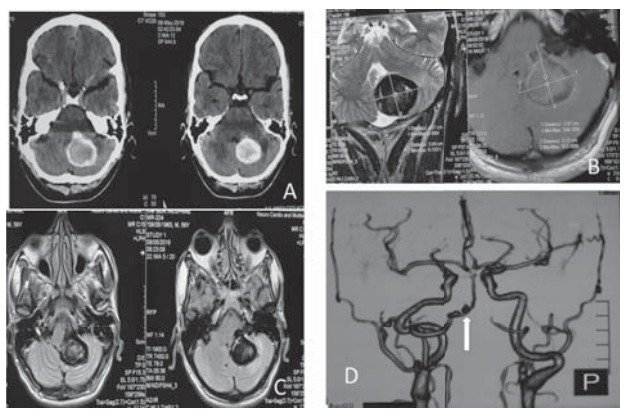

Figure 1. A. CT showing a large left cerebellar calcified mass. B&C. MRI T2 and Contrast showing hypointense and T1 hyperintense left cerebellar concentric lesion with no contrast uptake. D. CT angiography showing dominant left vertebral artery with non-filling of the aneurysm (white arrow).

a dominant left vertebral artery along with an incidental unruptured right middle cerebral bifurcation aneurysm (Fig. 1). He was treated for his vertigo and headache which improved over a week. The family members were counselled but they and the patient himself refused any kind of intervention and was thus discharged with antihypertensive/analgesics/antacid medications. He has been asymptomatic on follow-up since then.

Due to the rarity of the lesions VA aneurysms are difficult to manage. The options include surgery or neuro-intervention / endovascular coil occlusion or combined. Surgical approaches is determined by the location of the aneurysm, size, vascular anatomy and the collateral circulation. The vertebral-basilar junction aneurysm is approached by the pre-sigmoid supra or infratentorial approach or sub occipital-transcondylar approach, the lower aneurysm is dealt through the far-lateral or retro-sigmoid or suboccipital approach. Giant thrombosed aneurysms management remains a challenge to the

neurosurgeon. It can be approached via several methods, as conventional clipping at the base or if the cerebellum is tense then ultrasonic aspirator can be used to empty the sac followed by clipping or can be excised progressively till the neck is reached and then clipped.

The present case demonstrates that if the aneurysm is totally angiographically occluded and the patient is without symptoms then the option of no intervention could also be thought of because the aneurysm has been already *"Divine Clipped"* i.e. the neck has been naturally obliterated with the thrombus with complete occlusion from the main circulation. The exception would be cases with local mass effect, herniation, cranial nerve deficits, motor or sensory deficits, seizure, bony destruction or possibility of thrombus embolization. Whether the latter applies for other location thrombosed aneurysm is matter of study in future though the author has a 5-year follow-up case, each of similar *"Divine Clipped"* thrombosed middle cerebral bifurcation and internal carotid artery aneurysm without any complications.

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