

GIANT VERTEBRAL ARTERY ANEURYSM: A CASE REPORT

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ABSTRACT

Giant aneurysms (>25 mm) arising from the vertebral artery (VA) often present with slow progression of symptoms and signs because of gradual brainstem and cranial nerve compression. The underlying pathophysiology is not well understood, and treatment, wherever possible, is tailored to each singular case. Endovascular management does not usually solve the problem of mass compression, whereas surgical treatment involves several complications. We present a case of giant vertebral artery aneurysm treated in our department.

INTRODUCTION

Intracranial aneurysms (IAs) with a diameter of >25 mm arising from the vertebral artery (VA) are rare, representing 4–6% of all intracranial giant aneurysms. They are often associated with thrombosis because of swirling blood flow and usually present as mass lesions with slow progressive growth, causing symptoms and signs due to compression of the adjacent brainstem. The underlying pathophysiology is not well understood yet, although vasa vasorum seems to play a crucial role in the growth mechanism. The anatomical and vascularization variability implies *ad-hoc* tailored indication and treatment. Endovascular coiling and stenting, which are considered to be the treatments of choice, present a high rate of late complications mainly because they do not solve the problem of brain compression. Surgical procedures with the removal of the aneurysm from the circulation prove most effective; however, surgical management is still particularly difficult due to problems presented by their location, large neck, calcification, or thrombosis.

CASE REPORT: A 34 year old female presented to our department with headache and vomiting for last 2 weeks. On examination no gross neurodeficit was noted. Patient underwent MRI brain which revealed right vertebral artery giant aneurysm with compression of brain stem. Patient was referred to intervention radiologist who performed selective angiography of the bilateral vertebral artery. It revealed a giant fusiform dissecting aneurysm in the V4 segment of right vertebral artery. Subsequently right vertebral artery V4 segment with aneurysm was coiled with multiple coils. Right PICA was seen filling retrogradely after left VA injection. Left proximal superior cerebellar artery got thromboembolic

occlusion and embolectomy was done for same using solitaire stent 4x40 mm. Control angiography revealed visualisation of all arteries and no filling of aneurysm.

Patient had uneventful postoperative period and was discharged home without any deficit with advice to follow up in OPD

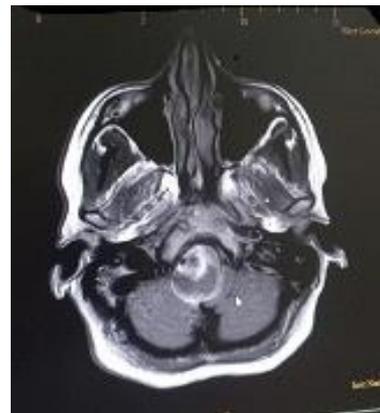


Fig 1: Giant vertebral artery aneurysm.

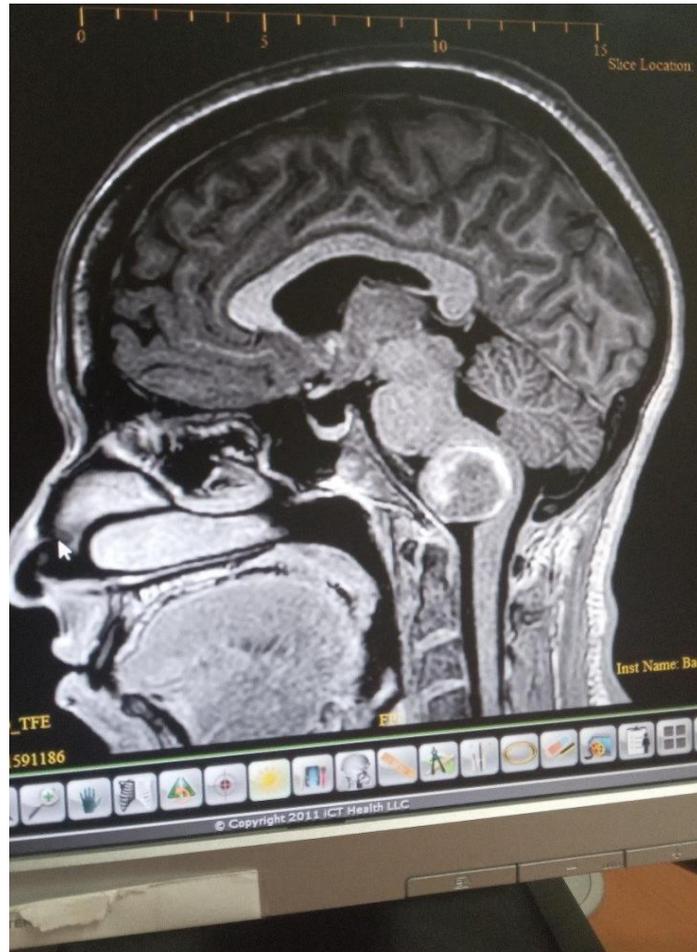


Fig 2: Sagittal view giant vertebral artery aneurysm.

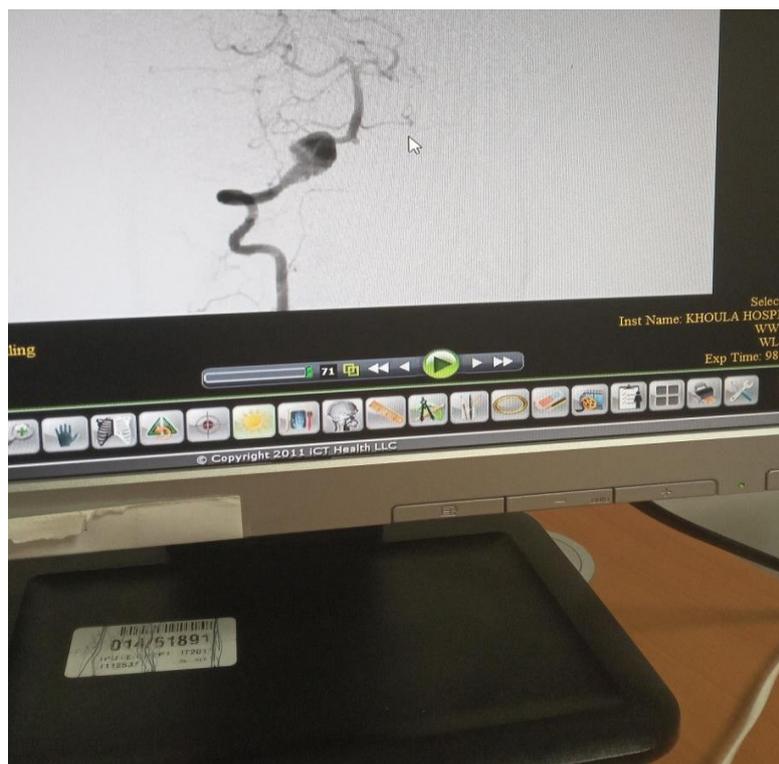


Fig 3: DSA picture of giant vertebral artery aneurysm.



Fig 4: Post coiling non filling of aneurysm.

DISCUSSION

Gabriele et al in 2018 published a case report detailing successful treatment with combined surgical and stenting a case of giant vertebral artery aneurysm.^[1] Cikla et al in 2015 described microsurgical clipping of a giant vertebrobasilar junction aneurysm under hypothermic circulatory arrest.^[2] Puay Yong in 2022 described giant vertebral artery aneurysms presenting acutely with WFNS grade five subarachnoid hemorrhage, report of 4 cases treated with endovascular or surgical proximal parent artery occlusion achieving good functional outcome.^[3] Gmeiner et al in 2021 described current strategies in the treatment of intracranial large and giant aneurysms.^[4] Hamilton et al described pathophysiology and management of giant aneurysm of the vertebrobasilar trunk in 1995.^[5]

CONCLUSION

Management of giant vertebral artery aneurysm is a challenge for neurosurgeons and endovascular interventionist. In our case the giant vertebral artery aneurysm was managed by proximal vertebral artery occlusion by multiple coils causing non filling of aneurysm successfully.

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