ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4

Journal of Coastal Life Medicine

A Case of Complete Left Internal Carotid Artery Occlusion Presenting as TIA

Received: 21 October 2022, **Revised:** 26 November 2022, **Accepted:** 28 December 2022

Dr Umashankar
Assistant professor, Department of General Medicine, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India.

Dr. S. Adhitya Surya
Junior Resident, Department of General Medicine, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India.

Dr. Ravi Teja
Junior Resident, Department of General Medicine, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India.

Dr.Madhuri
Junior Resident, Department of General Medicine, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India.

Dr Sankar
Associate professor, Department of General Medicine, Sree Balaji Medical College and Hospital, Chromepet, Chennai, Tamil Nadu, India.

Corresponding Author: Dr. S. Adhitya Surya
Mail ID: sadhityasurya@gmail.com

Keywords
TIA, CVA, Circle of willis

Abstract
Internal carotid artery (ICA) stenosis is a clinical condition that can present itself with a clinical profile that can be very diverse in nature. Here we present a case in which patient developed senation of weakness and loss of sensation in right side of the body as multiple episodes. Magnetic resonance angiography (MRA) showed a total obstruction in supply of the left ICA and the patient was treated with anti platelets. We reported this case to show the value of collateral supply of the brain

1. Introduction

A 100 percent occlusion involving the ICA is one of the prominent causes of cerebrovascular disease. An ICA occlusion that has no symptoms usually has a course that is relatively benign, when symptomatic , there is more risk of recurrent CVA[1].The clinical presentation may be completely asymptomatic presentation to a devastating stroke or death. In patients who have adequate collateral blood flow, patient may remain asymptomatic [2].

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

2. Case Presentation

Patient was brought to the opd with complains of slurring of speech. He gave history of headache 2 weeks back following which patient started developing weakness of right sided upper and lower limb which was sudden in onset lasting for about half an hour and recovered spontaneously. Patient developed 2 such episodes involving the same area, each episode lasting about half an hour. Following this he was shifted to the casualty and on examination, vitals were found to be normal. There was no evidence of anotmy neurological deficit. An MRI brain with MRA, MRV was done which showed acute infarct in left centrum semi ovale, left basifrontal lobe, left Globus pallidus, posterior limb of left internal capsule, left hippocampus left occipital lobe secondary to left Internal carotid artery thrombus. Following this, a 2D echo and carotid Doppler was done. The 2D echo was found to be normal and CV Doppler revealed totally occlusive thrombus of left internal carotid artery. A neurology opinion was obtained and advised young stroke evaluation workup which revealed the patient to have elevated homocysteine levels. The patient was then started on supplements and discharged with advise of dual anti platelets. Patient is on regular follow up and has not had any further episodes of weakness since.

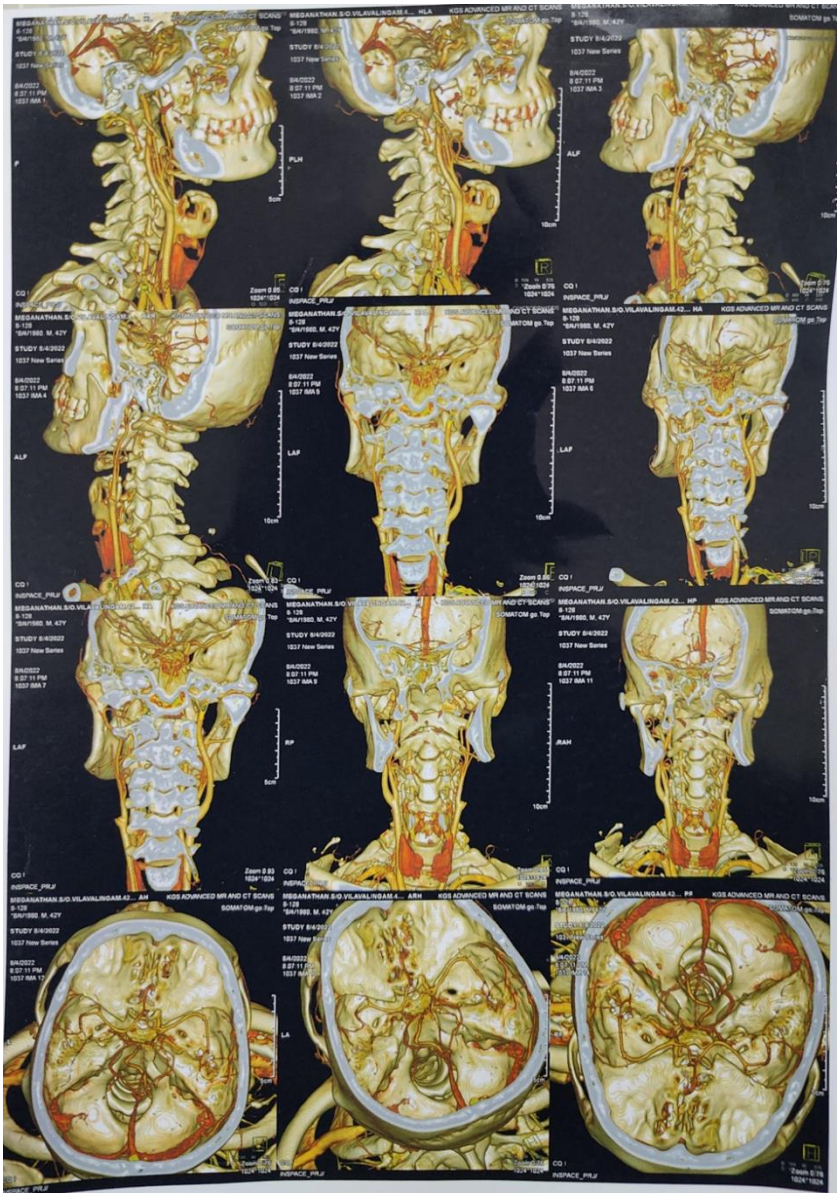

Figure 1: MRI Brain with MRA 3D Reconstruction

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

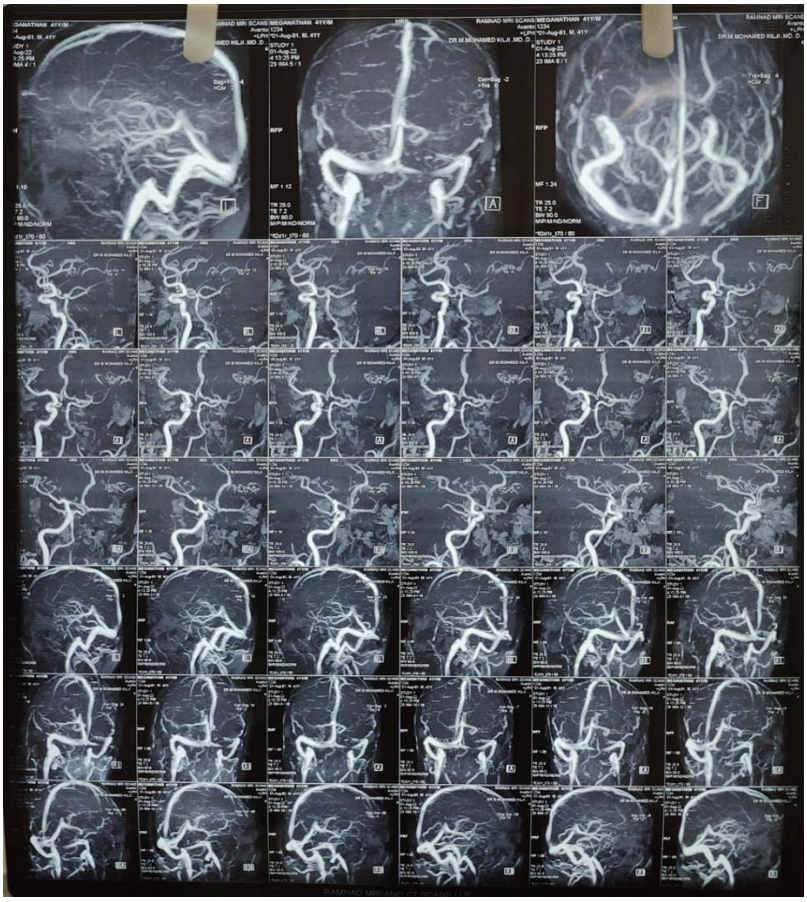

Figure 2: MRI Brain With MRA

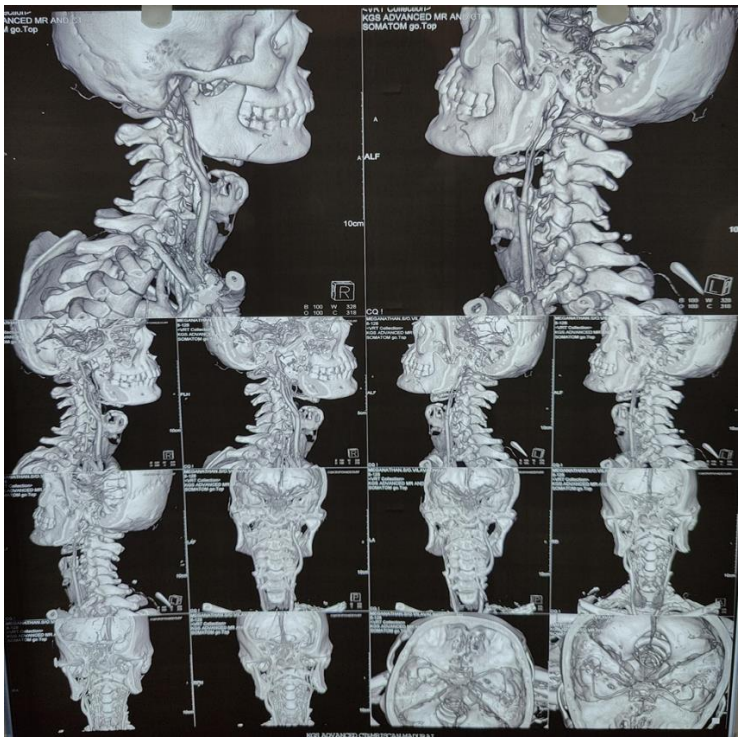

Figure 3: CT Angio Neck 3D Reconstruction

ISSN: 2309-5288 (Print)
ISSN: 2309-6152 (Online)
CODEN: JCLMC4
Journal of Coastal Life Medicine

3. Discussion

Compensatory mechanisms are present that prevent symptomatic ICA occlusion. Collateral circulation is an important one of them. The most prominent source of collateral blood flow is by means of the opposite side ICA through the circle of Willis which forms the anatomical main supply of the brain. The flow of blood from the contralateral ICA across the circle of Willis reaching the anterior communicating artery [(3)]. From here, it travels through the cortical branches of the anterior cerebral artery and in a reverse direction along the anterior cerebral artery to reach the middle cerebral artery (MCA). Another source of collateral flow is through the orbital branches of the ipsilateral ECA. Less common sources include collateral circulation from the vertebrobasilar systems or the cortical surface branches [(4)].

If this collateral system fails, blood flow to brain is maintained by dilation of cerebral vessels (cerebral autoregulation). In this mechanism, in response to hypercapnia or acetazolamide or other insults, there is vasodilation done by an autoregulatory mechanism—cerebrovascular reactivity. Another compensatory mechanism is oxygen extraction fraction (OEF) of the hypoxic brain tissue which increases in order to allow proper metabolism of the cerebral tissue [(5)].

4. Conclusion

This case shows the value of the collateral system in place to counter any reduction in blood supply to the brain to help maintain normal cerebral blood flow.

References

[1] Flaherty M L, Flemming K D, McClelland R.et al Population-based study of symptomatic internal carotid artery occlusion. Incidence and long-term follow-up. Stroke 200435e349

[2] Mead G E, Shingler H, Farrell A.et al Carotid disease in acute stroke. Age Ageing 199827677–682.

[3] Thiele B L, Young J V, Chikos P M.et al Correlation of arteriographic findings and symptoms in cerebrovascular disease. Neurology 1980301041–1046.

[4] Weimar C, Mieck T, Buchthal J.et al Neurologic worsening during the acute phase of ischemic stroke. Arch Neurol 200562393–397.

[5] Yanagihara T, Piepgras D G, Klass D W. Repetitive involuntary movement associated with episodic cerebral ischemia. Ann Neurol 198518244–250.