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BASILAR ARTERY OCCLUSION

Neurology

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ABSTRACT

Basilar artery occlusion is rare, accounting for approximately 1% of ischemic strokes characterized by pons and cerebellum infarction. Symptoms range from paresthesia and oculomotor symptoms to locked-in syndrome. Here we report a rare case of basilar artery infarction in 79 years old female patient presented with Right sided LMN type facial nerve palsy. This case is being reported to highlight the neuroimaging and clinical features of this condition.

KEYWORDS

basilar artery ,infarction ,pons, cerebellum, LMN Palsy

INTRODUCTION

The basilar artery is a major component of the posterior circulation, contributing to the circle of Willis and supplying the structures of the posterior cranial fossa including the pons and cerebellum. It runs anterior to the brainstem and is formed by the union of the vertebral arteries.

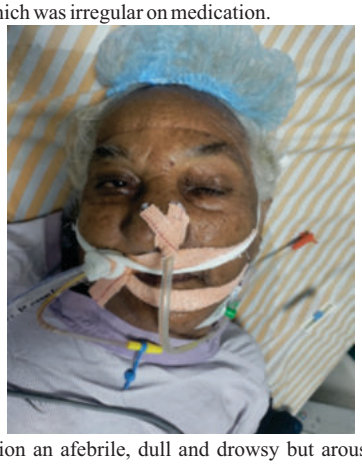
Occlusion of the basilar artery can have a variety of clinical manifestations ranging from transient weakness or paresthesia to near-complete paralysis. The characteristic symptoms of BA disease include motor and bulbar symptoms: decrease or loss of consciousness, paraesthesia, motor weakness, pupillary and oculomotor symptoms, dysarthria, and dysphagia.

Complete occlusion of the proximal or middle basilar artery leads to ischemia of the Para median base of the pons but spares the tegmentum. The result is locked-in syndrome, in which consciousness and oculomotor function are preserved, but all other voluntary muscle movement is lost. A complete distal basilar artery occlusion (the "top of the basilar" syndrome) can cause ischemia to the midbrain and thalamus, most often resulting in oculomotor abnormalities and alterations in alertness and behaviour.

CASE STUDY:

A 79 year old female known hypertensive, developed sudden onset giddiness associated with nausea and not being able to balance herself while standing and was brought to a local hospital. There were found to her systolic blood pressure above 200mmhg ,for which oral and intravenous anti-hypertensive were administered. Patient was symptomatically better after the treatment and was discharged.

After 2 days Patient presented to our emergency department with left sided weakness since last 8 hours and deviation of angle of mouth on the left side and slurring of speech since last 6 hours. she was unable to close her right eye properly (figure 1-1). There was no history of fever, headache, seizure, trauma. She had past history of hypertension since last 1 year, which was irregular on medication.



On examination an afebrile, dull and drowsy but arousable, slurred speech, (Glasgow coma scale: 10/15) with regular heart rate of 66/min, Blood pressure of 130/80 mm hg and respiratory rate 18/min. she had mouth deviation on left side, unable to close her right eye. Bilateral Pupils were 3mm reactive to light, and there was left sided hemiparesis (power: left U/L: Proximal-2/5, distal-2/5 Left L/L :- proximal -2/5,distal:- 2/5).Plantar response were extensor on left side and flexor on right side. Fundus examination reveals dot and blot haemorrhages. Fasting lipid profile s/o dyslipidemia, other biochemistry reports were normal and blood counts were normal. Electrocardiogram was suggestive of sinus rhythm with left ventricular hypertrophy.

MRI of brain done which revealed -focal acute infarcts are seen in bilateral cerebellar hemisphere (R>L) and pons. There is lack of normal flow void in the visualized intracranial part of bilateral vertebral arteries and proximal part of basilar artery. MR angiography of brain and neck vessels done later which revealed lack of significant flow seen within the basilar artery and intracranial part of left vertebral artery likely occluded/thrombosed.

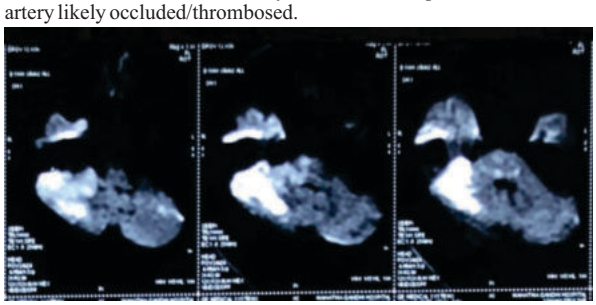


Fig.2: DWI section of noncontrast MRI

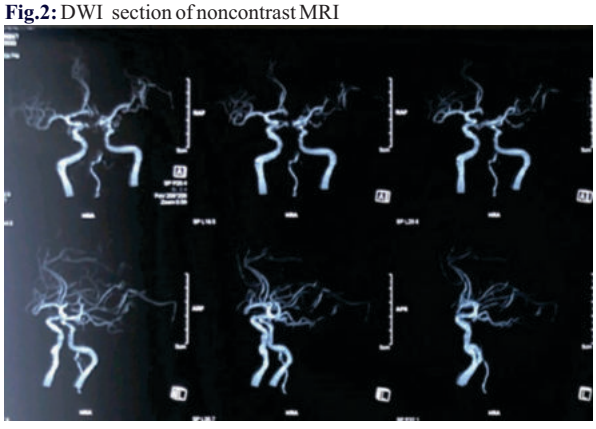


Fig.3: MR Angiography Of Brain Vessels

A diagnosis of basilar artery infarction was made based on the typical imaging findings and clinical features such as left sided hemiparesis, angle of mouth deviation on left side, unable to closed her right eye. Echocardiographic evaluation of the heart revealed normal LV function, LVEF-55%, left ventricular hypertrophy, grade 1 LV Diastolic dysfunction.

She was started on anticoagulant & anti-platelets and statins for therapeutic and preventive measure. She showed gradual improvement in power, wean off from ventilator, she able to close her right eye during hospital stay.

DISCUSSION

Acute basilar artery occlusion is a rare devastating type of stroke that represents only 1-4% of all strokes. It results in severe disability and significant morbidity [1]. Early diagnosis within the window of intervention allows the use of intravenous thrombolysis, intra-arterial thrombolysis, and mechanical endovascular procedures (thrombectomy). Such procedures allow for recanalization and subsequent improvement in the functional outcome. In basilar artery occlusion, the time window for intervention has often been longer than the typical window used in the anterior circulation [2]. Up to two-thirds of patients with basilar artery strokes have prodromal events including transient ischemic attack, minor strokes, and other symptoms such as headache, dizziness, vertigo, altered level of consciousness, and motor and sensory symptoms. In a study done by Organek et al [3]. Recently, intravenous or intra-arterial use of thrombolytic agents has been introduced with successful recanalization rates ranging from 44-88%. Although better, the mortality rate has remained high because of recurrent thrombosis, haemorrhagic complications, and irreversibility of the stroke itself. The overall good outcome with no or mild deficit is 20-25% [4]. In patients with clinical neurological findings suggestive of posterior circulation ischemia, further evaluation with CT angiography, magnetic resonance angiography, or conventional four vessels cerebral angiography is required. These imaging techniques will precisely visualize the basilar artery and rule out filling defects due to occlusion[5]. We recommend obtaining intracranial vessel imaging on all patients who are at high risk for intracranial strokes and presenting with unexplained acute delirium to rule out basilar artery occlusion.

CONCLUSION

We describe a case of 79 year old female with known hypertensive ,obese who suffered a thrombotic basilar artery occlusion with significant risk factor. Patient with basilar artery occlusion can experience significant recovery following reperfusion therapy, but delay in presentation to the hospital and diagnosis of basilar artery occlusion is a barrier to care. The symptoms of basilar artery occlusion are varied in both severity and character. Possibly contributing to the delay in diagnosis and treatment.

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