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Case Report

Infarction in middle cerebellar peduncle caused by ipsilateral vertebral artery hypoplasia

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ABSTRACT

AICA (anterior inferior cerebellar artery) is a ramification of the basilar artery. It originates in the lower or middle third of the basilar artery at the junction of the medulla oblongata and pons. A young 33-year-old male presented with an unsteady gait, left-sided facial hypoesthesia, and hearing impairment on the left side. On neurological evaluation, he was found to have left-sided sensorineural deafness and signs of incoordination. A brain magnetic resonance image (MRI) was suggestive of an acute infarct in the left middle cerebellar peduncle and a hypoplastic left vertebral artery recognized on MRA. We presented a case report wherein a patient presented with clinical features of a middle cerebellar peduncle infraction caused by hypoplasia of the left vertebral artery.

Keywords: AICA, Middle cerebellar peduncle infarct, Vertebral artery hypoplasia

INTRODUCTION

One of the lateral branches of the basilar artery, the AICA which supplies several structures of the posterior cranial fossa, most importantly the cerebellum, middle cerebellar peduncle, and pons. Terminal branches of AICA usually feature anastomoses with the posterior inferior cerebellar artery or superior cerebellar artery.[1-3]

AICA, which supplies the superior and inferior lateral pontine areas, seldom experiences infarction. We presented here a case of a patient with clinical features of middle cerebral peduncle infraction as a result of ipsilateral left vertebral artery hypoplasia.

CASE REPORT

A 33-year-old man presented with nausea and vomiting, acutely developing dizziness, unsteadiness of gait, decreased sensation on the left side of the face, and decreased hearing from the left ear. There was no medical history of hypertension, diabetes mellitus, sleep apnea, or coronary artery disease, and she was not an alcoholic or smoker.

His physical examination demonstrated that he was conscious and oriented. He had a blood pressure of 130/90 mmHg. His neurologic examination revealed decreased sensation on the left side of the face in V2 and V3 of the trigeminal nerve, left-sided sensorineural deafness, and signs of incoordination on the left side with horizontal nystagmus. Computerized tomography (CT) scan brain was normal. Cerebral MRI showed well defined T2/FLAIR hyper tense signal with restricted diffusion is seen in left middle cerebellar peduncle suggestive of acute infarct (Figure 1 and 2). On MRA left vertebral artery appears to be hypo plastic and left posterior cerebral artery is fetal in origin.

Patient was treated as an outpatient basis and was given dual antiplatelets (aspirin and clopidogrel) for 21 days followed by single antiplatelet (aspirin) and statins.

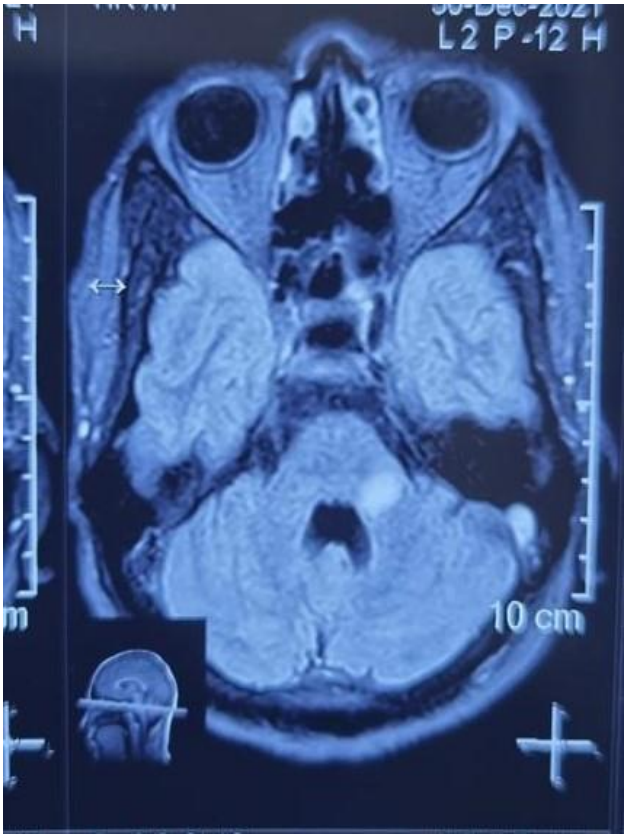

Figure 1:

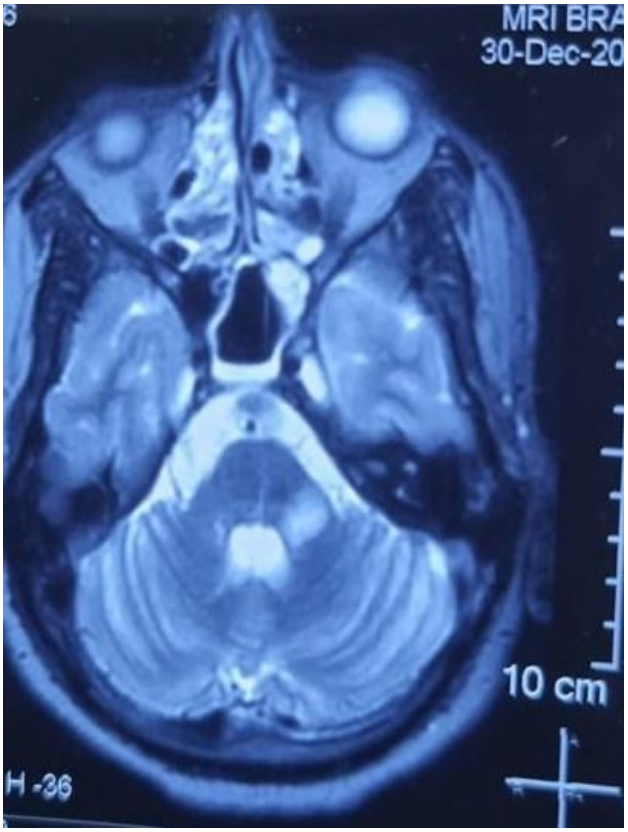

Figure 2:

DISCUSSION

The pons and cerebellum are linked by the middle cerebellar peduncle. Only fibers from the pons to the cerebellum are present in it. The fibers leave the pontine nucleus and move to the opposite hemisphere cerebellar cortex.

The superior cerebellar artery (SCA) and part of the AICA supply the middle cerebellar peduncle. The origin, size, course, and supply area of these arteries vary widely. The extent and location of the infarct vary, ranging from a tiny infarct that is localized to the cerebellar peduncle to a significant involvement of the cerebellar hemisphere. It is also possible that the pons, midbrain, thalamus, and occipital lobe are also involved.[4-6]

Isolated AICA infarction is a rare occurrence due to thromboembolic or related to severe atherosclerotic disease of the basilar artery and branches.

The literature revealed an incidence of vertebral artery hypoplasia that ranged from 10.8% to 43.5%.[7,8] The exact process through which vertebral artery hypoplasia results in ischemic stroke is yet unknown because stroke is a heterogeneous collection of disorders brought on by numerous complex factors.[9]

Rare (representing fewer than 0.15% of acute strokes), isolated MCP infarcts are probably caused by hypoperfusion in the watershed region between the AICA and the superior cerebellar artery or by infarction in the AICA's territory as a result of ipsilateral vertebral artery obstruction.[10]

CONCLUSION

Our case presented with a middle cerebellar peduncle infarct due to hypoplasia of the ipsilateral vertebral artery and showed a favorable outcome on conservative treatment.

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