Neurology Asia 2020; 25(2) : 225 – 229

IMAGING HIGHLIGHT

Vertebral artery occlusion with lateral medullary syndrome and cervical cord infarct

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Keywords: Posterior circulation stroke, vertebral artery occlusion, cervical cord infarction

Wallenberg syndrome (lateral medullary syndrome) is a type of posterior circulation stroke resulting in brainstem infarction which is most often caused by occlusion of vertebral artery or posterior inferior cerebellar artery or both.[1] Here we report a case of right lateral medullary syndrome secondary to vertebral artery occlusion with associated left cerebellar and cervical cord infarct resulting in quadriparesis.

CASE REPORT

A 53-year-old Indian women presented with sudden onset weakness of all four limbs. Two days later, she had sudden numbness of right side of the face and all four limbs. She developed headache, nausea, vomiting along with binocular double vision, dysarthria, dysphagia for liquids with nasal regurgitation, retention of urine. Clinical examination revealed partial ptosis on the right side with small pupils reacting to light. There was skew deviation of eyes with right eye lower and horizontal jerky nystagmus with a rotatory component, coarse and slow on right gaze, fine and fast on left gaze. Corneal reflex was absent on the right side with decreased pain and temperature on right half of the face. She had dysarthria with right sided palatal palsy with absent gag reflex. Motor system examination revealed asymmetric flaccid quadriparesis. Plantar reflex was extensor bilaterally. There was sensory impairment on the left side with reduced pain and temperature sensations and sparing of vibration sense.

Initial MRI T2/STIR sequence revealed hyperintensity in the cervical cord. (Figure 1). MRI brain revealed diffusion restriction in right medulla, left cerebellum suggestive of acute infarct. (Figure 2) Repeat imaging of spine and brain screening revealed intramedullary cord hyperintensity from C2-C6 with an owl eye pattern with patchy areas of diffusion restriction without contrast enhancement. There was absence of flow void in T2 weighted images in right vertebral artery without contrast opacification. On contrast MR angiography, crescentic intramural hematoma was noted in V3 segment with severely attenuated flow in right vertebral artery from its origin. (Figure 3-6) Digital subtraction angiography (DSA) was done which revealed right vertebral artery occlusion with thin caliber and slow flow up to V4 segment. (Figure 7)

Figure 1. MRI brain showing hyperintensity in the cervical cord.

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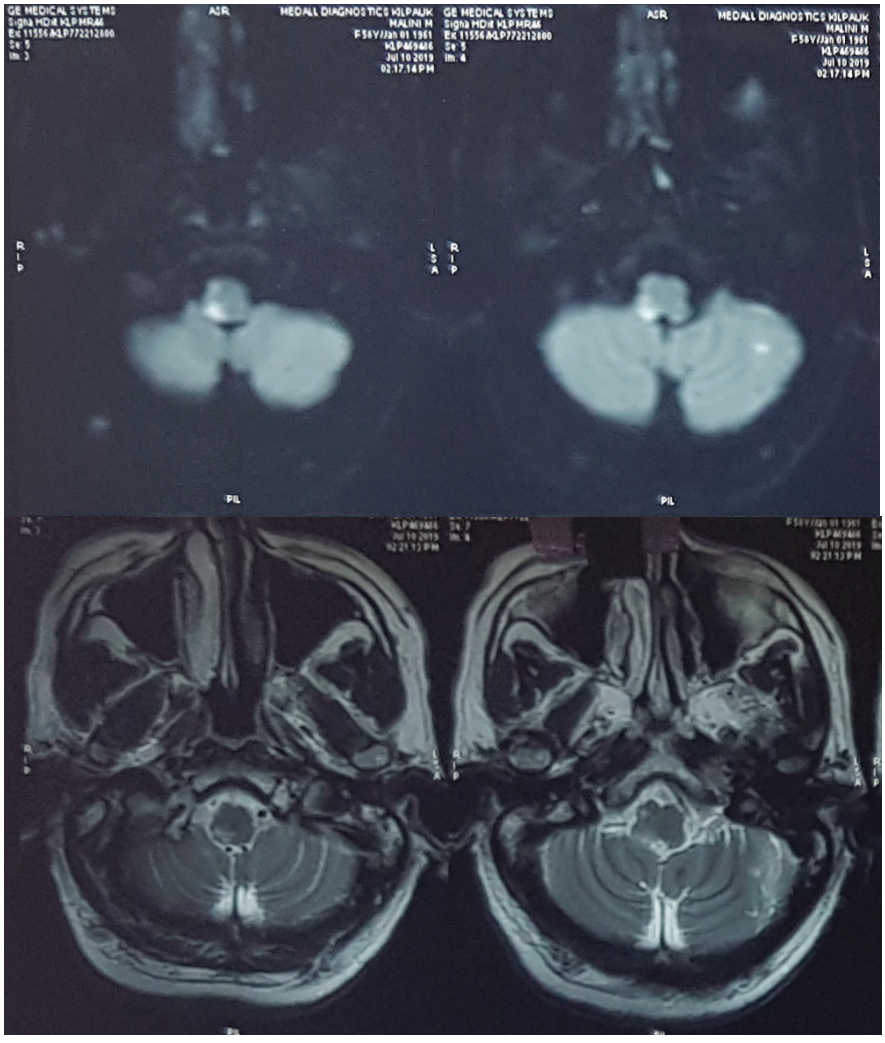

Figure 2. MRI brain showing diffusion restriction in right dorsolateral part of medulla.

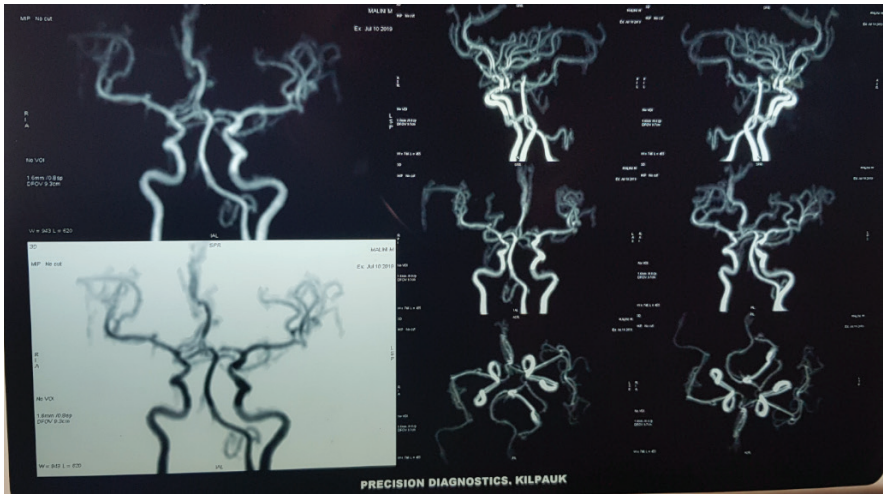

Figure 3. MR angiography showing absent flow in the right vertebral artery.

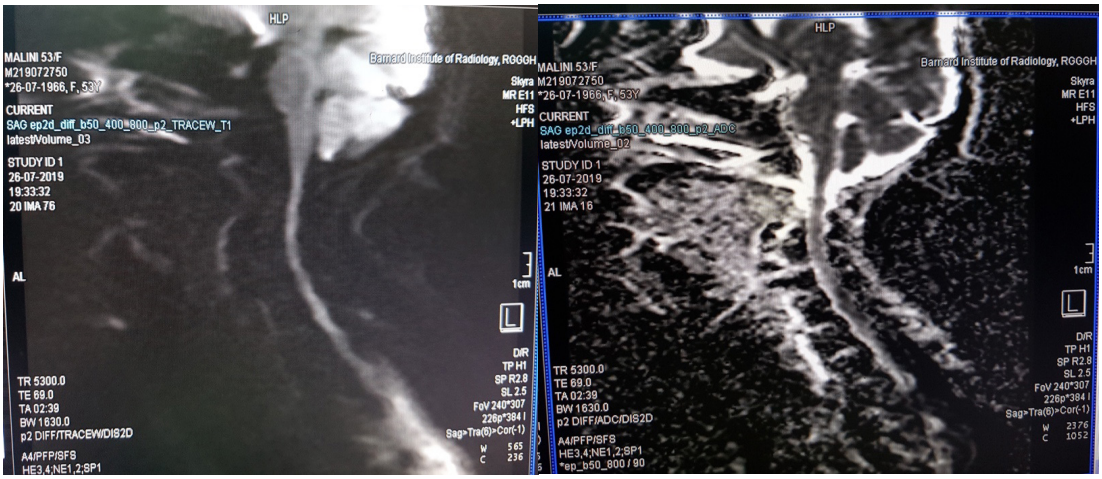

Figure 4. Diffusion weighted images of the MRI cervical spine showing patchy areas of diffusion restriction.

Figure 5. MRI cervical spine showing owl-eye appearance in the axial cuts.

Figure 6. MR angiography showing attenuated flow in the right vertebral artery.

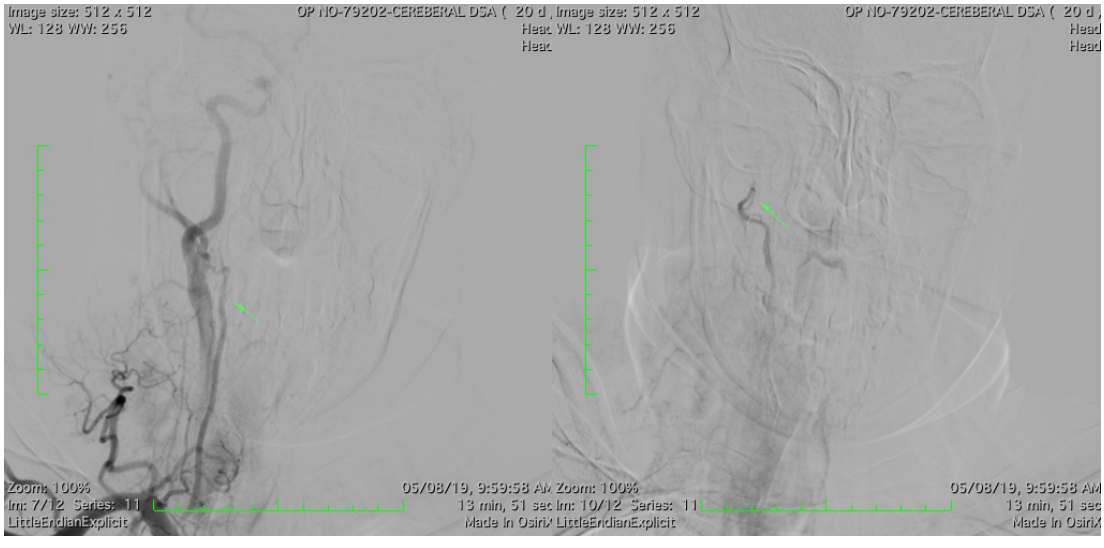

Figure 7. DSA showing right vertebral artery with slow flow up to V4 segment, possibility of occlusion.

DISCUSSION

Wallenberg syndrome is a type of posterior circulation stroke resulting in brainstem infarction which is most often caused by occlusion of vertebral artery or posterior inferior cerebellar artery or both.[1] Hemiparesis is not a feature of pure lateral medullary syndrome, however there are variations in the extent of ischemia in the vascular territory of the posterior circulation. Quadriparesis in a patient with lateral medullary syndrome may result from associated occlusion of the anterior spinal artery.

In our patient, lateral medullary infarct and cervical cord infarct resulted from occlusion of vertebral artery. Only one similar case has been reported in the literature previously.[1]

The likely explanation for right vertebral artery occlusion resulting in infarct of the right lateral medulla as well as upper cord and left cerebellum is that the vertebral artery occlusion have resulted in an emboli into the dominant anterior spinal artery as well as to left posterior inferior cerebellar artery (PICA) leading to an infarct in the left cerebellum. By DSA the left vertebral artery and the left PICA were normal. However the anterior spinal artery could not be visualized, probably as a result of occlusion of the V3 and V4 segments of the right vertebral artery.

The reported case is a unique combination of lateral medullary syndrome and cervical cord infarct due to occlusion of vertebral artery. This combination is rarely reported in the literature so far.

REFERENCE

1. Tharaknath VR, Chowdary AH, Kumar KS, Navya L. An unusual case of posterior circulation stroke. *Journal of Dr. NTR University of Health Sciences* 2017; 6(4): 259-61.