

A case of bilateral stroke of the medulla oblongata

CASE REPORT

A 64-year-old woman with a history of hypertension and diabetes was admitted to the emergency room with tetraparesis which had slowly progressed over the previous week.

On examination the patient presented a right-sided dominant tetraparesis, no inferior limb deep tendon jerks and upper limb paraesthesia. No sensory loss, cranial nerve impairment, or weakness of the face or tongue was noted on admission. MRI of the medulla was performed with T1 and T2 weighted sequences because of the possibility of cervical compression myelopathy. This MRI showed no medullary abnormalities except for a narrow spinal canal.

Within the next 24 h the patient developed severe dysphagia. Tetraparesis progressed to a right-sided hemiplegia, and bilateral Babinsky signs appeared. MRI of the brain and medulla was then performed showing bilateral hyperintense signal of the medullary pyramids in the diffusion weighted imaging (figure 1) and T2 weighted (figure 2) sequences. The lesion was later confirmed by axial T1 weighted sequences which showed a Y shaped hypointense signal in favour of ischaemic sequelae (figure 3).

In our case no respiratory failure was noted and dysphagia rapidly disappeared in the following week. Tetraparesis progressively improved throughout the following months.

DISCUSSION

According to previous studies,¹⁻⁴ medial medullary infarction accounts for approximately 1% of vertebrobasilar strokes and less than 0.5% of all acute brain infarctions. Bilateral medial medullary infarction is a very rare event as it accounts for less than 1% of medial medullary infarctions, and less than 20 cases have been reported in the literature. Previous studies have

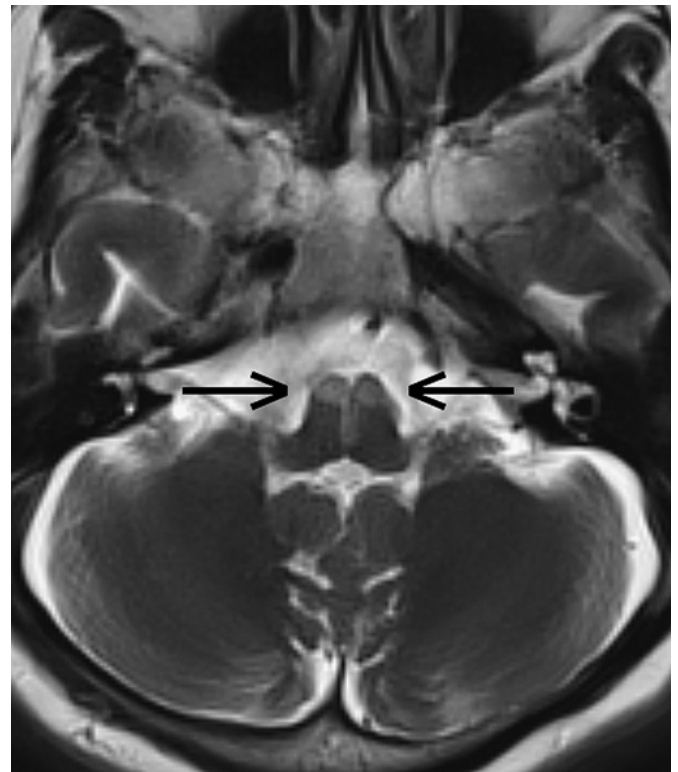


Figure 2 T2 weighted sequences in the acute stage showing bilateral medullary hyperintensity.

showed that the prognosis of this injury is linked with respiratory failure which did not occur in our case.⁵

It has been reported⁶ that an anatomical variant of the anterior spinal artery which originates from one vertebral artery

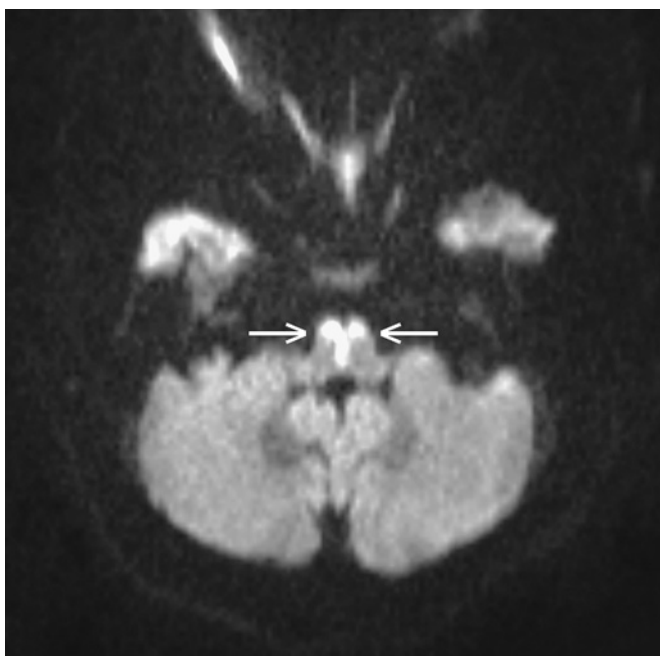


Figure 1 Diffusion weighted MRI showing bilateral hyperintense signal in the medullary pyramids in favour of an acute stroke.

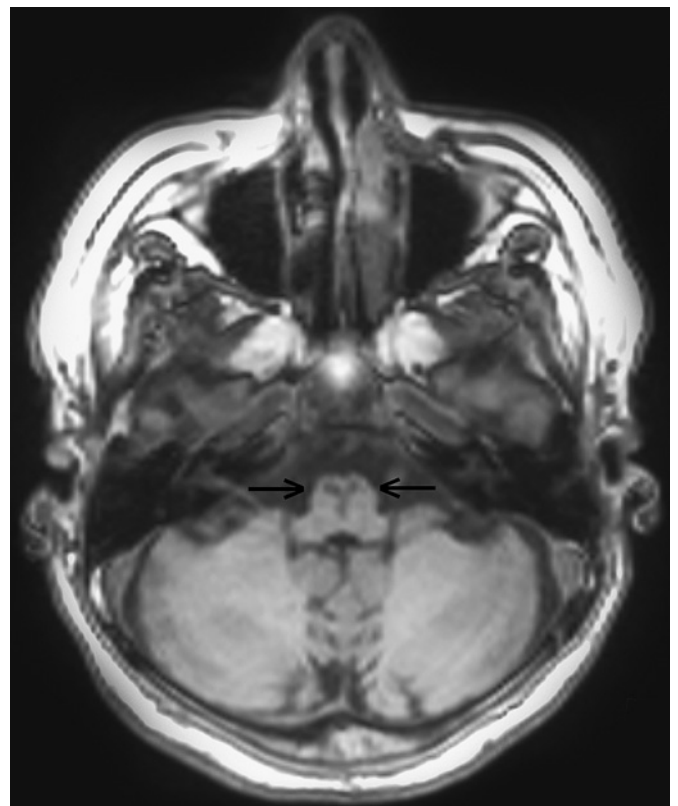


Figure 3 Axial T1 MRI showing the Y shaped stroke sequelae.



Figure 4 Occlusion of the V4 segment of the right vertebral artery in MR angiography.

occurs in approximately 10% of patients. In the presence of this anatomical variant, atherosclerosis and atheromatous disease of the vertebral artery, anterior spinal artery or branches of the anterior spinal artery are very likely to explain bilateral medullary pyramid infarction.

In our case, occlusion of the right vertebral artery, discovered on MR angiography (figure 4), along with a probable anatomical variant of the anterior spinal artery possibly accounted for the occurrence of this infarction.

Moreover, tractography images showed bilateral lesions of the main pyramidal tract, with a left dominant impairment, agreeing with the clinical presentation of right hemiplegia and left hemiparesis (figure 5).

The most frequent aetiologies for tetraparesis include myelitis, cervical compression myelopathy and neuropathy. Most of these causes can be diagnosed by either lumbar puncture or MRI. Our case illustrates a rare cause of tetraparesis which should not be forgotten when all previous aetiologies have been discarded. Moreover, diffusion weighted imaging should be part of all MRIs probing a tetraparesis as it is the most sensitive sequence in acute brain infarction.

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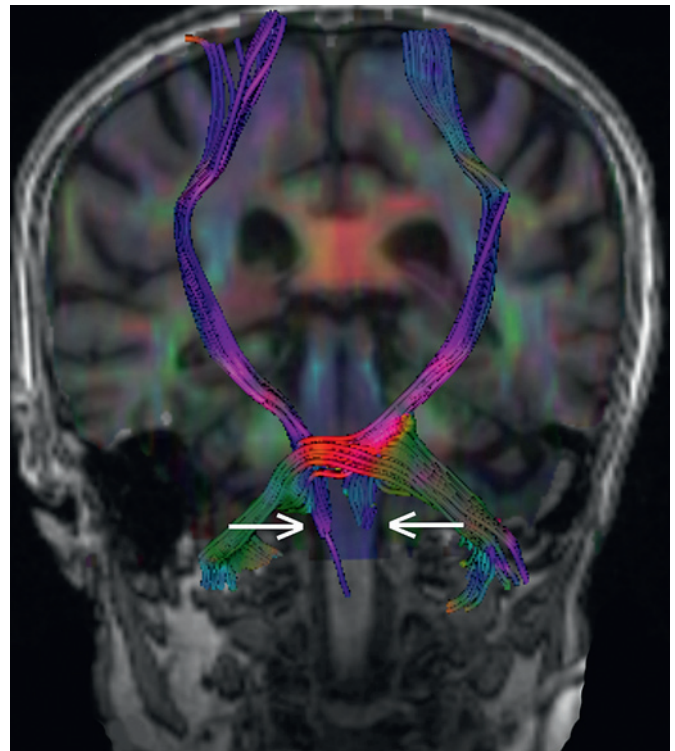


Figure 5 Diffusion tensor MR tractography showing left dominant impairment of the corticospinal tracts.

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