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Pontine Infarction with Pure Millard-Gubler Syndrome: Precise Localization with Magnetic Resonance Imaging

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Millard-Gubler syndrome [1] is characterized by ipsilateral facial palsy, probably owing to involvement of the root fibers, and contralateral hemiplegia resulting from involvement of the corticospinal fibers. Most patients with Millard-Gubler syndrome show some other associated neurological abnormalities because many nuclei or fibers exist near the root fibers of the facial nerve [2]. This is the first case report of pure Millard-Gubler syndrome whose responsible lesion was confirmed by magnetic resonance imaging (MRI).

A 60-year-old man developed a throbbing headache on 16 December 1991. Then the headache increased gradually, but nausea or vomiting was not seen. He showed paresthesia on the extremities of the left side 2 days later and vertigo 4 days later. He noticed left facial weakness on 27 December and was admitted to our hospital.

On admission, his blood pressure was 186/92 mm Hg. He was alert, and his intelligence was normal. He showed a peripheral facial nerve palsy on the right. Eye movement was normal (fig. 1). He showed left hemiparesis, and his tongue was deviated to the left. The deep tendon reflex was exaggerated, and Babinski's reflex was equivocal on the left. Objective sensory loss or cerebellar ataxia was not seen.

Routine blood and urine examinations were normal. An electroencephalogram, auditory brainstem response and somatosensory evoked response were normal. Computed tomography of the head was normal. T2-weighted MRI showed a high-signal area in the right ventral pons (fig. 2). A vertebral antiogram showed occlusion of both vertebral arteries.

The lesion responsible for Millard-Gubler syndrome [1] is probably located in the root fibers of the facial nerve and the corticospinal fibers. Therefore the lateral inferior and medial inferior pons must be involved together for the appearance of the syndrome. However, as near the root fibers of the facial nerve there are the medial longitudinal fasciculus, paramedian pontine reticular formation, abducens nucleus, superior cerebellar peduncle, dorsal spinothalamic tract, medial lemniscus and secondary ascending tract of the trigeminal nerve [2], Millard-Gubler syndrome often associates with one-and-a-half syndrome, abducens palsy, contralateral cerebellar ataxia, contralateral sensory deficits and so on. Millard-Gubler syndrome is usually seen in brainstem tumor or bleeding but rarely in infarction. Moreover, pontine infarction with pure Millard-Gubler syndrome like in our case is

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Fig. 1. Eye movement was normal.
very rare. As an infarct was restricted to the ventral pons and was not spread dorsally, our case showed pure Millard-Gubler syndrome. This is the first case report of pure Millard-Gubler syndrome whose responsible lesion was confirmed by MRI.

References

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Fig. 2. MRI (TR/TE = 2,000/120). A Axial. B Coronal. T₂-weighted MRI showed a high-intensity area (arrowhead) in the right ventral pons.