Teaching Video NeuroImage: Impaired bilateral conjugate eye movements in a 48-year-old man

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A 48-year-old man developed lightheadedness and diplopia upon awakening 10 days prior. Since then, his double vision had been continuous and stable. Upon admission, neurologic examination revealed bilateral internuclear ophthalmoplegia, abducting nystagmus, and intact convergence reflex (video). His blood pressure was 155/100 mm Hg and HbA1c was 8.7%, suggesting a new diagnosis of diabetes mellitus type 2. CT angiography showed calcified plaques of bilateral cavernous internal carotid arteries. MRI showed a lesion with hyperintensity on T2 fluid-attenuated inversion recovery, contrast enhancement, and mild diffusion restriction ventral to the cerebral aqueduct in the pontomesencephalic junction (figure), which is supplied by interpeduncular perforating branches of posterior cerebral arteries. For this patient with hypertension and diabetes mellitus, the acute onset of symptoms and imaging findings suggest ischemic stroke due to arteriosclerosis of perforating arteries, which should be differentiated from demyelinating diseases such as multiple sclerosis. Involvement of bilateral medial longitudinal fasciculus rather than oculomotor nucleus is a rare consequence of stroke.

Figure Lesion ventral to the cerebral aqueduct in the pontomesencephalic junction

Increased signal on T2 fluid-attenuated inversion recovery (C) and postcontrast enhancement (A, B, and F) is seen. Mildly increased and decreased signals on diffusion-weighted imaging (D) and apparent diffusion coefficient (E), respectively, suggest weak diffusion restriction, supporting a diagnosis of ischemic stroke in the subacute phase.

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**Appendix** Authors

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<tr>
<td>Mao Liu, MD, Dr med</td>
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**References**
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