Teaching NeurolImage:

Wall-eyed bilateral internuclear ophthalmoplegia (WEBINO) from midbrain infarction

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A 78-year-old man with hypertension and diabetes was referred because of 3 days of diplopia and ophthalmoplegia. Neurologic examination disclosed exotropia of both eyes (wall-eyed) and bilateral internuclear ophthalmoplegia (WEBINO) with impaired convergence (figure, A).¹ Vertical saccades and smooth pursuit were also limited, but improved during the oculocephalic maneuver (video). Pupillary and levator function was normal. MRI demonstrated a circumscribed acute infarction in the midline of the mesencephalic tegmentum involving the bilateral medial longitudinal fasciculus (MLF) which are usually supplied

by the anteromedial perforators of the posterior cerebral artery (figure, B).²

WEBINO should be differentiated from the exotropia (paralytic pontine exotropia) of one-and-a-half syndrome which denotes unilateral horizontal gaze palsy and internuclear ophthalmoplegia and occurs in the pontine lesion involving the paramedian pontine reticular formation and MLF.³ The dissociated abducting nystagmus, impaired convergence, and supranuclear vertical gaze palsy (video) in our patient support a midbrain lesion damaging the bilateral medial longitudinal fasciculus and pretectum.⁴

Figure Photographs of eye motion and T2- and diffusion-weighted MRIs

(A) Photographs of eye motion demonstrate exotropia of the eyes and adduction deficit of either eye on attempted lateral gaze. Vertical eye motions were also impaired. The arrows indicate the directions of attempted gaze. (B) T2- and diffusion-weighted MRIs disclose an acute infarction in the midline of the midbrain tegmentum involving the bilateral medial longitudinal fasciculus.

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