Eight-and-a-half syndrome

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Video

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A 62-year-old left-handed man with a history of hypertension, hyperlipidemia, and diabetes mellitus awoke with double vision. On examination, the patient had right eye exotropia with left eye midline at rest and conjugate gaze while focusing on an object. He had conjugate horizontal gaze palsy to the left (figure, A). On right lateral horizontal gaze, the patient had impaired left eye adduction with retained ability to abduct the right eye, which evoked a right lateral nystagmus (figure, B). Convergence with near fixation was spared. Additionally, the patient had impaired left eye closure and ipsilateral flattened nasolabial fold (figure, C) (video at Neurology.org/cp).

The clinical findings of eight-and-a-half syndrome, also known as one-and-a-half syndrome plus cranial nerve VII palsy and Fisher one-and-a-half syndrome, provide precise localization of the dorsal tegmentum of the caudal pons in the region of the facial colliculus.¹ The lesion responsible for this syndrome is unilateral at the midpontine level with damage to both the paramedian pontine reticular formation and medial longitudinal fasciculus.² These structures are intimately related to the facial nucleus and intraaxial fasciculus of the facial nerve.¹ A transient unilateral exotropia has also been associated with this syndrome, as seen in our patient.² Our patient was diagnosed with eight-and-a-half syndrome in the setting of an acute ischemic event due to small-vessel vascular disease, shown on diffusion-weighted MRI (figure, D).

Figure MRI and clinical findings

(A) Conjugate left horizontal gaze palsy. (B) On right horizontal gaze, the patient had impaired left adduction and retained right abduction, which evoked a right lateral nystagmus. (C) Left facial palsy. (D) Diffusion-weighted image demonstrates an acute infarct within the left dorsal pons near the facial colliculus (red arrowhead).

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