PHOTO ESSAY

Ptosis and Elevation Paresis Due to Mesencephalic Infarction

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ABSTRACT

Lesions located in the anterior cavernous sinus or posterior orbit are known to cause divisional oculomotor palsy. We herein report a patient with fascicular infarction causing superior division paresis of the nerve.

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Oculomotor; divisional; mesencephalic

Introduction

The third cranial nerve anatomically divides into superior and inferior divisions within the anterior cavernous sinus or superior orbital fissure. However, the topographical arrangement of the fascicles occurs intra-axially. The fibres within the superior division innervate the levator palpebrae superioris and the superior rectus muscles whereas the inferior contains motor fibres innervating the medial rectus, inferior rectus, and inferior oblique muscles and parasympathetic fibres for pupillary constriction.

Case report

A 21-year-old woman was admitted to hospital because of sudden-onset partial eyelid drop on the left side associated with diplopia. She had been diagnosed as juvenile dermatomyositis at an age of twelve going with lung and heart involvement and had been treated with different immunosuppressive drugs including steroids, azathioprine, and methotrexate. She was on digoxin and silazapril because of hypertension and heart failure for the last two years. Her visual acuity was 20/20 in both eyes. She had partial ptosis on the left side associated with mild restriction of elevation. Other extraocular movements were normal (Figure 1). Her pupils were 4 mm in dim light and 2 mm in bright light with brisk reactivity to light. The remainder of the

physical and neurological examination was within normal limits. Cranial magnetic resonance imaging (MRI) performed on the second day of admission showed a left paramedian mesencephalic hyperintense lesion on T2-weighted (Figure 2a) and diffusion-weighted (Figure 2b) axial images consistent with an acute infarction in the territory of the left median mesencephalic branch of the posterior cerebral artery. Standard laboratory evaluation including complete blood count, comprehensive metabolic panel, coagulation studies, and fasting lipid panel was normal. Her ECG revealed left ventricular strain and chest X-ray showed cardiomegaly. Holter ECG monitoring for 24 hours did not reveal any rhythm disturbance and no thrombus was present on transesophageal echocardiography. Head and neck computed tomography angiography did not show any other vessel abnormality. As a cardioembolic source could not be identified, she was given aspirin 300 mg/day. However, strict control at follow-up both by a cardiologist and neurologist was advised. When she was seen a month later, the clinical findings were still present.

Discussion

Isolated paresis of either the superior^{1–6} or inferior^{7,8} division of the oculomotor nerve has rarely been reported and occasional case reports are present about fascicular lesions due to vascular or demyelinating diseases.^{1,6,8} Our case with brainstem infarction

Figure 1. Partial ptosis and elevation paresis of the left eye.

Figure 2. Magnetic resonance axial T 2- weighted (A) and diffusion-weighted (B) images showing a left paramedian mesencephalic hyperintense lesion consistent with an acute infarction in the territory of the left median mesencephalic branch of the posterior cerebral artery.

indicates the importance of neuroradiological studies including diffusion-weighted MRI in patients with fascicular involvement.

Conflict of interest

The authors report no conflict of interest

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