Clinical picture

Wall-eyed bilateral inter nuclear ophthalmoplegia with vertical gaze palsy

A 64-year-old woman, diabetic and hypertensive, presented with sudden onset painless diplopia and alteration of consciousness. She was drowsy with neurological examination revealing exotropia of both eyes in primary position with bilateral internuclear ophthalmoplegia on attempted horizontal gaze (Figure 1a). Pupils were normal bilaterally. Convergence, vertical saccades, pursuits and vestibular ocular reflexes were impaired. Cranial magnetic resonance imaging (MRI) showed an acute infarct in the midline of mesencephalic tegmentum involving the bilateral medial longitudinal fasciculus (Figure 1b).

Wall-eyed bilateral inter nuclear ophthalmoplegia (WEBINO) is a rare disorder characterized by bilateral exotropia on primary gaze, bilateral inter nuclear ophthalmoplegia (INO) and impaired convergence. It may also be associated with vertical gaze palsy, up-beat nystagmus and skew deviation. Common etiology includes inflammatory, toxic, infectious, degenerative, traumatic, postsurgical, demyelinating and neoplastic conditions, but midbrain infarction is the most common reported etiology.1

While the pathophysiology of the WEBINO syndrome remains controversial, the clinical constellation of findings are thought to be due to bilateral medial longitudinal fasciculus (MLF) damage producing bilateral INO, likely in conjunction with abnormalities of the medial rectus sub nuclei (MRSN) of the ventral oculomotor nuclear complex culminating in bilateral exotropia and signifying bilateral convergence failure.2 As MRSN neurons are scattered within the MLF at the level of the pontomesencephalic junction, a lesion at this level could affect both structures, resulting in the WEBINO syndrome.1,2 Variable degree of vertical gaze abnormalities in WEBINO is explained by the frequent concomitant involvement of rostral interstitial nucleus of MLF or the interstitial nucleus of Cajal in the midbrain-thalamic region.2

Photographs and text from: S. Chakravarthi, P. Kesav and D. Khurana, Department of Neurology, Post Graduate Institute of Medical Education and Research, Chandigarh, India.
email: dherajk@yahoo.com

Conflict of interest: None declared.

References