Comments on "Bilateral medial rectus palsy due to midbrain infarction following concussion head injury"

Sir,

Thakkar *et al*. decribe bilateral adduction deficit without diplopia/abnormal head posture with ataxia and dysarthria as fellow travelers; and conflate a cause and effect relationship ascribing adduction deficit to bilateral medial rectus (MR) palsy due to bilateral midbrain lesions (infarcts) lateral to aqueduct of sylvius.[1] However, there seems to be irrefutable evidence begging for an alternate diagnosis of bilateral internuclear ophthalmoplegia (INO) with ataxia and dysarthria; a triad eponymously known as Charcot's triad.

Cerebellar ataxia, dysarthria, vertigo, facial nerve palsy, and pyramidal tract signs are well described with INO, both unilateral and bilateral and are harbingers of poor prognosis.[2] Abducting nystagmus and retained convergence are not *sine qua non* for INO though are characteristically present, the former may be subtle, missed clinically and may need laboratory evaluation.[3] The medial longitudinal fasciculus (MLF) carries otolithic pathways along with fibers controlling horizontal and vertical gazes. Abduction nystagmus with hypermetric abduction is due to increased phasic innervations adjusted to adduction paresis. Slowed abduction saccades are attributed to impaired inhibition of the MR muscle in the fellow eye.[3]

Further unilateral INOs are invariably associated with an ocular tilt reaction with conjugate torsion exhibiting intorsion of the hypertropic eye and extorsion of the hypotropic eye, bilateral INOs have as fellow travelers gaze evoked vertical nystagmus, impaired vertical pursuit and decreased vertical VOR gain, features that have not been evaluated by the authors.[1]

The multiple ischemic lesions described are on Flair sequences which are ill equipped to offer reliable insight into the nature of the lesion. There seem to be anatomical inconsistencies as well. There is periaqueductal gray matter around the aqueduct, the 3rd nuclear complex lies much below in the tegmentum, the MR subnuclei are abutted laterally and inferiorly by MLF, and the lesion seems to be too big to have affected MR subnuclei in isolation. Bilateral INOs have been described after minor head injury,[4] conditions like multiple sclerosis, Wernicke's Korsakoff psychosis also need to be entertained.

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Conflicts of interest

There are no conflicts of interest.

Pramod Kumar Pandey, Annu Joon, Divya Kishore, Mainak Bhattacharyya

Department of Ophthalmology, Guru Nanak Eye Center and Maulana Azad Medical College, New Delhi, India

Correspondence to: Dr. Pramod Kumar Pandey, Department of Ophthalmology, Guru Nanak Eye Centre, Maharaja Ranjit Singh Marg, New Delhi - 110 002, India.
E-mail: drpkpandey55@gmail.com

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