Comments on: Acute isolated medial rectus palsy due to infarction as a result of hypercoagulable state: A case report and literature review

We read with interest the article titled “acute isolated medial rectus palsy due to infarction as a result of hypercoagulable state: A case report and literature review” by Morya et al.[1] The authors are rather parsimonious while detailing the clinical picture, cryptic whether it is nuclear or fascicular medial rectus palsy, presumptive about hypercoagulable state and consequent medical treatment and its resolution. The likely diagnosis of internuclear ophthalmoplegia (INO) has been overlooked peremptorily while entertaining restrictive entities despite a negative forced duction test.

Presuming it was isolated ischemic palsy involving medial rectus subnucleus of the 3rd nerve, the 3rd nerve nucleus is supplied by paramedian branches from basilar and proximal branches from posterior cerebral arteries with no watershed zones between neighboring subnuclei, whereas medial longitudinal fasciculus (MLF) responsible for INO is supplied by end arteries from the basilar artery, the latter being more prone for ischemia, being end arteries. In the midbrain, the MLF is lying just ventrolateral to medial rectus subnucleus of the 3rd cranial nerve and can be affected anywhere till rostral interstitial nucleus of MLF. On neuroimaging is unable to localise the lesion to 3rd nerve nucleus or MLF in the midbrain. Since initial MRI did not reveal any lesion and second one revealed multiple lesions, a cause and effect relationship cannot be conflated unequivocally in the present report.

The MLF carries interneurons from the 6th nerve nucleus to medial rectus subnucleus of the opposite side for versions as well as otolithic projections from each vestibule. Any lesion may give rise to adduction limitation on the same side and an isolated/non-isolated ipsiversive/contraversive OTR depending upon site and extent of the lesion. The abducting nystagmus in INO is not true nystagmus but a saccadic pulse train and despite being common, it is not sine qua non for the diagnosis; it may not be apparent to the naked eye and may require oculography for detection. In the present report, the two frequently encountered aspects of INO, absent/weak convergence and accompanying ocular tilt reaction (OTR)/skew deviation due to involvement of otolithic pathways have been completely overlooked.[1,2] In OTR patient may neither report vertical diplopia nor conjugate torsion and head tilt adopted may be subtle and easily missed.[3] Therefore, an evaluation of ocular motility with PACT with primary/secondary deviation as well as in 9 cardinal gazes with 9 gaze montage along with subjective and objective evaluation of conjugate fundus torsion, head tilt test results in erect and supine position would have offered missing pieces to the jigsaw. The OTR may be complete/incomplete (only intorsion/extorsion present), comitant/incomitant or on occasions may even simulate superior/inferior oblique palsy even on 3 step test and thus create great diagnostic dilemmas.[3-6]

Risk factors for ischemia like hypertension, hyperlipidemia, smoking, etc. have not been entertained and a hypercoagulable state assumed on some corroborative laboratory parameters. Ischemic INOs may not be MRI positive and may resolve spontaneously over an average of 2.25 months.[5,6] Patient likely resolved spontaneously but was treated with systemic steroids with all attendant risks of such a therapy. An isolated fascicular medial rectus palsy shall be betraying additional baggage of fascicular involvement of a midbrain syndrome and be evident. It transpires that an isolated/non isolated unilateral INO is prone to be misdiagnosed as isolated nuclear medial rectus palsy and such a diagnosis should only be entertained after far more common INO has been ruled out by appropriate evaluation for convergence and OTR. As stated above, the casualty may be ascribed when none exists as many ischemic INOs may be MRI negative and cause and effect relationship may be elusive.

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Conflicts of interest
There are no conflicts of interest.
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