Clinicoradiological Analysis of the Oculomotor Fasciculus

Key words: oculomotor fascicular paresis, inferior rectus muscle, pupillary sphincter muscle, ophthalmologic findings, MRI, clinicoradiological diagnosis


The Authors Reply We appreciate the clinical and radiological comments by Tsuda, concerning partial oculomotor fascicular paresis in our patient (1). He proposed the possibility that the left medial longitudinal fasciculus (MLF) syndrome and palsy of the right inferior rectus muscle were present in our patient. The red glass test and Hess chart were performed in our patient. These results revealed no palsy of the inferior rectus muscle on both sides. Our patient had no MLF syndrome or ophthalmoplegia on the left side throughout the entire course. The ophthalmologic profile of our patient did not support the ophthalmologic comment by Tsuda.

With respect to the radiological comment regarding our patient, Tsuda suspected T2-hyperintense lesions in the right oculomotor nucleus and bilateral MLF. In general, damage to the oculomotor nucleus does not cause sparing of the inferior rectus muscle and the pupillary sphincter muscle. Moreover, our patient had no contralateral palsy of the superior rectus muscle. Magnetic resonance imaging (MRI) is commonly used to detect the brainstem lesion in ophthalmoplegic patients. However, there is diagnostic limitation in distinguishing the topographic lesion in the oculomotor nucleus, oculomotor fascicle and MLF on MRI. Neurological and ophthalmologic examinations play a crucial key in the anatomical diagnosis of the oculomotor nerve palsy, in addition to the midbrain lesion on MRI. Thus, a comprehensive evaluation of the clinicoradiological findings is needed to make the correct diagnosis in patients with ophthalmoplegia.

The authors state that they have no Conflict of Interest (COI).

Ken Ikeda and Yasuo Iwasaki

Reference