Isolated Unilateral Ptosis due to Mesencephalic Stroke

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Introduction:
Since the work of Warwick in 1953, the anatomy of the oculomotor nucleus, its sub nuclei arrangement and the fascicles within the midbrain has been a source of extensive investigation and debate.

The location of the oculomotor fascicles has been derived from correlation of individual deficits and the midbrain lesions identified by neuroimaging.

To the best of our knowledge, there is no earlier documentation in the literature of isolated unilateral ptosis due to midbrain infarct.

Methods:
Clinical-radiologic correlation.

Results:
A 69y/o man with hypertension, diabetes type II, dyslipidemia, and coronary artery disease, who had a partial occlusive thrombus within the distal left vertebral artery that produced acute infarcts in the left cerebellar hemisphere, right dorsal midbrain tegmentum and right thalamus.

Neurological examination revealed partial third nerve palsy with isolated complete ptosis of the right eye, Extra ocular movements including adduction, supraduction, infraduction and inferior oblique function were all intact. The left eye was not ptotic. The pupils were symmetric in size and pupillary reflex intact bilaterally.

Conclusion:
This is a unique case and we concluded that the isolated unilateral right lid ptosis was due to an ipsilateral fascicular lesion located in the levator palpebrae fascicle after the axons exited from its sub nucleus in the midline.

The location of the Magnetic Resonance imaging (MRI) lesion and the isolated unilateral ptosis supports Warwick’s model that proposes the levator palpebrae nucleus is located on the central caudal aspect of the mesencephalon. Additionally, the unilateral deficit is also consistent with the topographical fascicular model proposed by Ksiazek and colleagues.

References:

Key Words: Midbrain stroke, Partial third nerve palsy, Unilateral ptosis

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