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Vertical Diplopia from Skew Deviation in a Patient with Thalamic Infarct

Padmaja Sudhakar¹, Edward Escott¹, Deepta Ghat², Kara Fister¹, Sachin Kedar¹ ²

¹University Of Kentucky, Neurology, Lexington, KY, USA, ²University of Kentucky, Ophthalmology, Lexington, KY, USA

Introduction:
Skew deviation has been reported in thalamic infarcts but is not as common as vertical gaze paresis. We describe a patient with chronic thalamic and pontine infarcts who presented with a transient new onset vertical diplopia due to skew deviation.

Methods:
Single case report and review of literature

Results:
A 55 year old female with uncontrolled diabetes mellitus, hypertension, hyperlipidemia and a past history of stroke presented with a 12 hour history of sudden onset vertical diplopia. Initial neurologic examination showed left hypertropia and chronic left spastic hemiparesis. Neuro-ophthalmic exam showed skew deviation. She had 2 prism diopter left hypertropia in primary gaze, excyclotorsion of right eye and normal ocular movements. Diplopia and vertical deviation resolved within 24 hours. MRI head showed an acute infarct in the right frontal periventricular white matter and a chronic right paramedian thalamic infarct. Ischemic gliotic changes were seen in the right caudal pons. She was also noted to have atherosclerotic lesions of both internal carotid arteries which suggested an atheroembolic process.

Conclusions:
We believe our patient developed a skew deviation due to transient ischemia of the right paramedian thalamus adjacent to the prior thalamic infarct from a new thromboembolic process. Thalamic lesions rarely present with vertical skew deviation. In patients with thalamic stroke, the skew is believed to be secondary to an extension of peri-infarct edema into the territory of the medial longitudinal fasciculus and interstitial nucleus of Cajal in the brainstem. An acute onset of skew deviation prompted neuro-imaging, which revealed additional right frontal infarcts from an atheroembolic process that resulted in aggressive risk factor management.

References:

Keywords: Skew deviation, Thalamic infarct, Vertical diplopia

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