31st ANNUAL CONFERENCE OF ANDHRA PRADESH NEURO SCIENTISTS ASSOCIATION
APNEUROCON 2024 GUNTUR

VERTICAL GAZE PALSY IN RIGHT MEDIAL THALAMIC INFARCT WITHOUT MIDBRAIN INVOLVEMENT

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INTRODUCTION

- The vertical gaze is mediated through the riMLF which has a mix of both excitatory and inhibitory burst neurons. This innervation is regulated through the step cells of interstitial nucleus of Cajal. The neurons of the posterior commissure also play some role in this network. These are structures placed very closely to the midline and at the diencephalon-mesencephalic junction. Any lesion involving one of the above areas is likely to produce vertical gaze palsy in general.

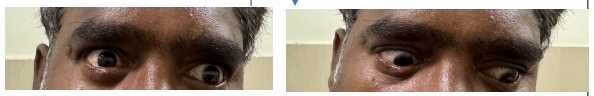
CASE REPORT

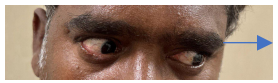
A 46 Year old male who is a chronic smoker, alcoholic and known hypertensive and diabetic presented with acute onset binocular diplopia. Examination revealed vertical gaze restriction and upward torsional nystagmus on attempted upgaze without weakness of limbs or sensory loss.

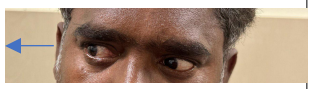
INVESTIGATIONS

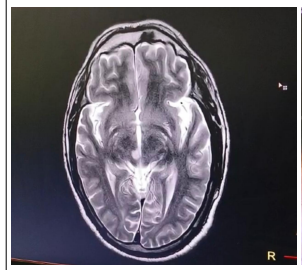
MRI BRAIN revealed acute infarct in the right medial thalamus without involving the midbrain.

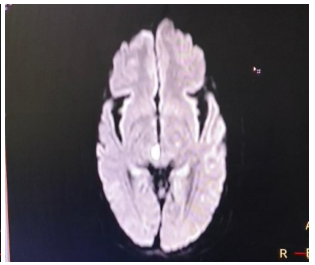
- Routine investigations with lipid profile, 2D Echo carotid doppler were done as part of the stroke workup.
- MRI Brain – 0.5 TESLA revealed T2/FLAIR hyperintense focus at right thalamus with diffusion restriction. MRA was normal











RESULTS & DISCUSSION

An infarct of the thalamus causing vertical gaze palsy is a unique presentation as the thalamus is not known to be a part of supranuclear gaze control. The proximity of the thalamus to the less studied vertical gaze centre – riMLF and its associated areas like INC and posterior commissure can make it a likely part of the supranuclear input route. The common vascular supply to paramedian thalamus and upper midbrain may be another likely explanation for vertical gaze palsy in thalamic infarcts.

CONCLUSION

The supranuclear pathways for vertical gaze are not clearly defines as for horizontal gaze. The usual culprit attributing to vertical gaze palsy is the rostral interstitial MLF. Though there is frequent co-existence of medial thalamic and midbrain-thalamus junction ischemia, there have been few cases with isolated medial thalamic infarct causing vertical gaze palsy. This case is unique as there is no upper midbrain or midbrain- thalamus infarct as evidenced by the MRI. This suggests that the thalamus may be interrupting the supranuclear inputs to the mesencephalic region.