TONIC CONVERGENCE SPASM AS AN EARLY INDICATOR OF *PINEAL TUMOR*: A CASE REPORT

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BACKGROUND

Tonic convergence spasm is an uncommon neuro-ophthalmologic sign characterized by involuntary, sustained adduction of both eyes, often accompanied by miosis and accommodation, in the absence of a near stimulus. While frequently considered functional in origin, its presence may also indicate underlying structural lesions affecting supranuclear oculomotor pathways, particularly in the dorsal midbrain (1). Timely recognition is essential to distinguish benign from serious causes.

CASE PRESENTATION

We report the case of a 15-year-old female with no prior neurological history who presented with acute onset of horizontal binocular diplopia and severe left temporoparietal headache, initially intermittent but progressing to daily holocranial pain rated 10/10 on the Numeric Rating Scale. Associated symptoms included photophobia, phonophobia, and transient blurred vision.

Neurological examination revealed abnormal, sustained repetitive eye movements consistent with tonic convergence spasm, associated with mild upward gaze limitation and intermittent binocular diplopia in horizontal gaze. The remaining neurological examination was unremarkable.

Visual acuity and fundoscopic examination were normal. Orthoptic testing identified left lateral rectus hypofunction with homonymous horizontal diplopia and a Hess test confirmed ocular motility imbalance. Visual evoked potentials (VEPs) were within normal limits bilaterally. Brain MRI with contrast revealed an 8 mm multilobulated cystic lesion in the pineal region, hypointense on T1-weighted and hyperintense on T2/FLAIR sequences, with faint peripheral enhancement and susceptibility artifact—suggestive of a pineal tumor, likely a pineocytoma.

IMAGING

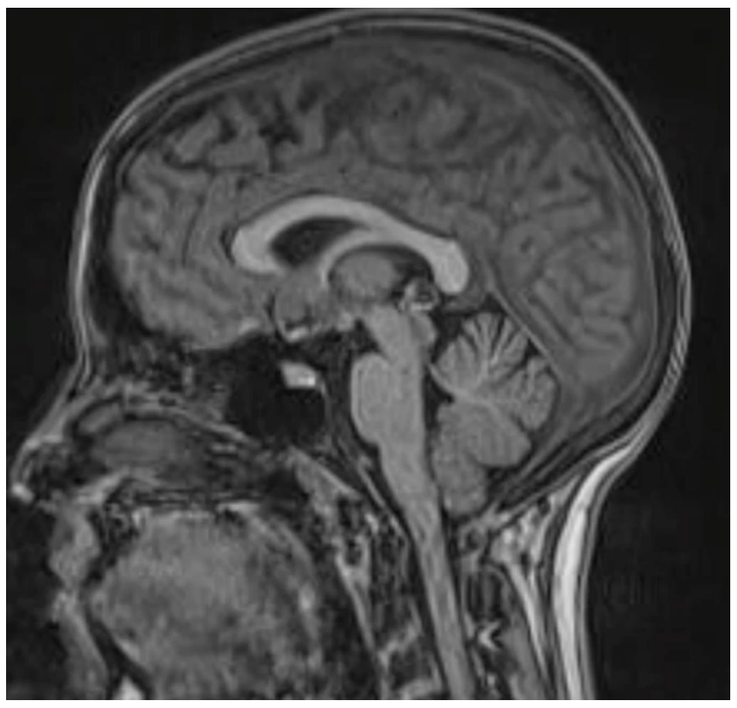

Figure 1:

T1 Sagittal

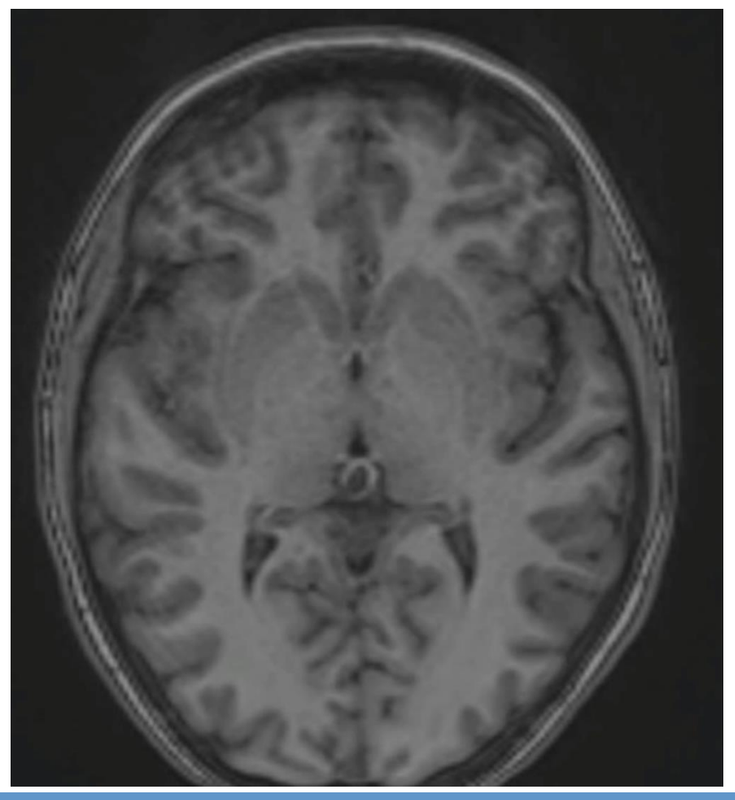

Figure 2:
T1 Axial

DISCUSSIONE AND CONCLUSION

Tonic convergence spasm may result from dysfunction of supranuclear gaze pathways in the dorsal midbrain, which coordinate vertical gaze and control the near reflex. Mechanical compression of these structures, as can occur in pineal region tumors, may disrupt inhibitory control over vergence mechanisms and produce tonic ocular convergence (2). While often attributed to functional etiologies, convergence spasm in this context revealed an underlying organic lesion. The neuroimaging and clinical findings in our case support the interpretation of an incomplete or evolving dorsal midbrain syndrome, also known as Parinaud's syndrome, of which convergence spasm may be an early manifestation. Pineocytoma and other pineal tumors are recognized causes of this syndrome, which classically includes upward gaze palsy, light-near dissociation, and convergence-retraction nystagmus. This case highlights the importance of not dismissing convergence spasm as merely psychogenic, and of considering neuroimaging in patients with atypical or persistent ocular motor findings.

REFERENCES

Rhatigan M, Byrne C, Logan P. Spasm of the near reflex: A case report. American Journal of Ophthalmology Case Reports, Volume 6, 2017, Pages 35-37,

S. J. R. De Monchy, Rhytmical Convergence spasm of the eyes in a case of tumour of the pineal gland, Brain, Volume 46, Issue 2, July 1923, Pages 179–188

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