

See-saw nystagmus, convergence-retraction nystagmus and contraversive ocular tilt reaction from a paramedian thalamomesencephalic infarct

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DESCRIPTION

A 49-year-old healthy woman presented with sudden onset of binocular diplopia and unsteady gait. Physical examination showed convergence-retraction nystagmus on up-gaze and see-saw nystagmus on left-gaze (video 1). She also had ocular tilt reaction (OTR) with skew deviation, excyclotorsion of the left eye and left head tilt (video 1). Her extraocular eye movements and vestibulo-ocular reflex were normal. Her limb power was full but left lateropulsion was evident during walking. She underwent a brain MRI that revealed a right thalamomesencephalic infarct (figure 1A, B). She made good recovery in 2 months after treatment with aspirin and rehabilitation training.

See-saw nystagmus is characterised by intorsion and elevation of one eye, with synchronous extorsion and depression of the other.¹ It involves the central otolith connections, especially in the interstitial nucleus of Cajal (INC).¹ Convergence-retraction nystagmus in patients with thalamomesencephalic lesion is rare.² This may be related to the damage of supranuclear fibres having an inhibitory effect on the convergence neurons or ischaemia of the divergence neurons in midbrain, which could result in a sustained discharge of medial rectus neurons.² The contraversive OTR is likely due to ischaemia of the INC.³



Video 1 Convergence-retraction nystagmus on up-gaze, see-saw nystagmus on left-gaze and contraversive ocular tilt reaction.

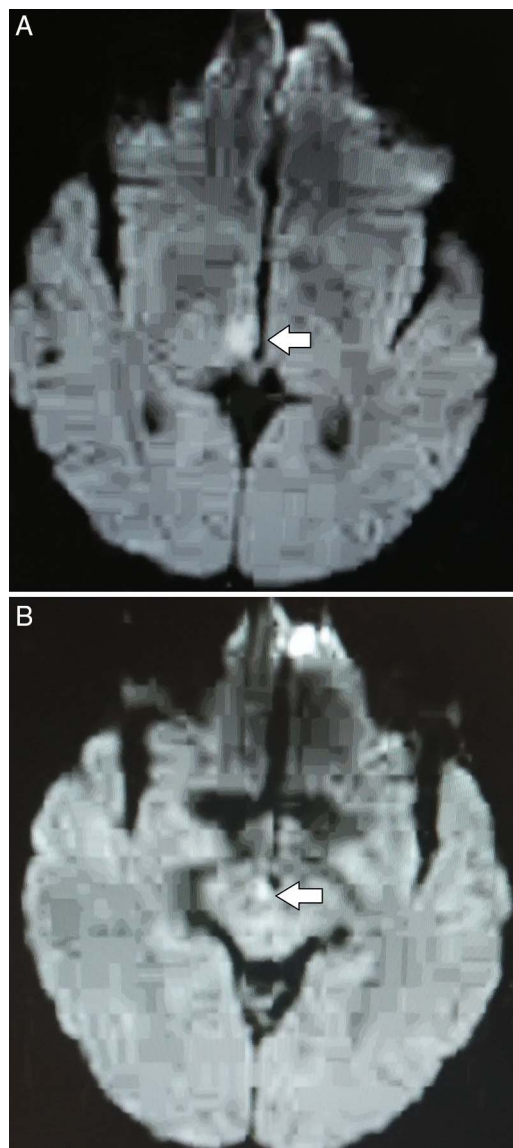


Figure 1 (A) Diffusion-weighted (DW) brain MRI showing a tiny infarct in right thalamus (arrow). (B) DW brain MRI shows a tiny infarct in the right midbrain (arrow).



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Learning points

- ▶ See-saw nystagmus is characterised by intorsion and elevation of one eye, with synchronous extorsion and depression of the other. It involves the central otolithic connections, especially in the interstitial nucleus of Cajal (INC).
- ▶ Convergence-retraction nystagmus in patients with thalamomesencephalic lesion is rare. This may be related to the damage of supranuclear fibres having an inhibitory effect on the convergence neurons or ischaemia of the divergence neurons in midbrain, which could result in a sustained discharge of medial rectus neurons.
- ▶ The contraversive ocular tilt reaction is likely due to ischaemia of the INC.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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