Atypical isolated nuclear oculomotor nerve syndrome: a diagnostic challenge

Bing Liao,¹ Carlos Kamiya-Matsuoka²

¹Department of Neurology, UTMB/MDACC, Galveston, Texas, USA

²Department of Neuro-oncology, MDACC, Houston, Texas, USA

Correspondence to

Dr Carlos Kamiya-Matsuoka, ckamiya@mdanderson.org

Accepted 5 February 2015

DESCRIPTION

A 44-year-old man with hyperlipidaemia and chronic hepatitis C infection presented with a 48 h history of diplopia and occipital headaches. On neurological examination, he was alert and afebrile. There was right oculomotor palsy consisting of right medial rectus, inferior rectus and inferior oblique weakness; without ptosis or superior rectus weakness and with intact pupillary and consensual reflexes; otherwise the rest of the examination was unremarkable. CT of the head and neck showed normal extracranial and intracranial vessels. Transthoracic echocardiogram was essentially a normal study. MRI of the brain showed a non-enhancing lesion and restricted diffusion-weighted imaging without apparent diffusion coefficient map correlation in the right periaqueductal white matter, suggesting a subacute stroke (figure 1). No enhancement, vasogenic oedema or other lesions to suggest demyelinating disease or underlying tumour were present.

The patient presented with isolated nuclear oculomotor nerve palsy. It usually consists of complete ipsilateral third nerve palsy in addition to contralateral ptosis and superior rectus dysfunction, furthermore, if the nuclear lesion is rostral, it may present with pupillary involvement and muscles may be spared. Isolated nuclear oculomotor nerve syndrome has been reported in patients with mesencephalic haematomas,¹ ischaemic strokes^{2 3} and metastases.

To the best of our knowledge, this is the first case of isolated nuclear oculomotor nerve palsy with atypical features that may mimic ischaemic oculomotor nerve palsy, usually associated with diabetes mellitus and hypertension.

Learning points

- ▶ Atypical manifestations of isolated nuclear nerve palsy include ophthalmoplegia without ptosis or pupillary involvement.
- ▶ Early recognition of the symptoms and physical manifestations of isolated nuclear nerve palsy is important as the process and neurological symptoms can be reversible.
- ▶ This condition is often overlooked because it may mimic ischaemic oculomotor nerve palsy associated with diabetes mellitus and hypertension.

Contributors BL took part in study concept and design, revision and approval. CK-M participated in study supervision, study concept and design, revision and approval.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Işıkay CT, Yücesan C, Yüçemen N, *et al*. Isolated nuclear oculomotor nerve syndrome due to mesencephalic hematoma. *Acta Neurol Belg* 2000;100:248–51.
- 2 Takamatsu K, Takizawa T, Miyamoto T, *et al*. Partial nuclear oculomotor nerve palsy, MLF syndrome, hallucinose pédonculaire due to midbrain infarction—a case report. *Rinsho Shinkeigaku* 1994;34:341–6.
- 3 Toyoda K, Oita J, Yamaguchi T, *et al*. Isolated nuclear oculomotor nerve palsy due to mesencephalic infarction. *Rinsho Shinkeigaku* 1991;31:197–201.

CrossMark

To cite: Liao B, Kamiya-Matsuoka C. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-207749

Figure 1 MRI of the brain after 48 h of symptoms onset (A-arrow). Diffusion-weighted imaging (DWI) axial MRI showing restriction in the right periaqueductal white matter affecting the right oculomotor nuclear complex and sparing the Edinger-Westphal nucleus. (B) Apparent diffusion coefficient map axial MRI shows no correlation with DWI sequences but the (C-arrow) T2/fluid-attenuated inversion recovery axial MRI shows hyperintensity in the mentioned area suggesting a subacute stroke.

Copyright 2015 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow