MRI in progressive supranuclear palsy

Eight-and-a-half syndrome

A 52 year old man with hypertension and diabetes mellitus presented with sudden onset of binocular diplopia on looking to the left side, right facial weakness, and epiphora in the right eye. Ocular motor examination revealed combination of right gaze paresis and right internuclear ophthalmoplegia suggestive of horizontal one-and-a-half syndrome (fig 1A–C). Vertical ocular movements from the primary position were normal (fig 1D, E). In addition, he also had right lower motor neurone facial weakness (fig 1F, G). Cranial MRI showed right paramedian pontine lesion (fig 2A, B). The lesion was hyperintense on diffusion weighted MRI image (b = 1000 s/mm²) and hypointense on apparent diffusion coefficient hyperintense on diffusion weighted MRI image (b = 1000 s/mm²). The lesion was located in the right paramedian pontine tegmentum (fig 2A). During evaluation in the third week, adduction lag in the right eye had slightly improved. Our patient presented with the unique combination of right sided horizontal one-and-a-half syndrome and lower motor neurone seventh cranial nerve palsy. Such a combination of signs (seven plus one-and-a-half) is known as eight-and-a-half syndrome. Involvement of right abducens nucleus, right medial longitudinal fasciculus, and right facial nucleus/fascicles in the lower pontine tegmentum contributed to the observed clinical signs. Thus recognition of this syndrome allows precise localisation of the lesion to lower pontine tegmentum ipsilaterally.

R Nandhagopal, S G Krishnamoorthy
Department of Neurology, Sri Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh, India

Correspondence to: Dr R Nandhagopal, Department of Neurology, Sri Venkateswara Institute of Medical Sciences, Tirupati-517 507, Andhra Pradesh, India; rmandagopal@yahoo.com

Competing interests: none declared
Consent was obtained for publication of figure 1

Reference

Figure 1  (A–C) Combination of right gaze paresis along with adduction lag in right eye and unimpaired abduction in the left eye (with nystagmus) suggestive of right horizontal one-and-half syndrome. Note the normal vertical eye movements from the primary position of gaze (D, E). (P: Primary position of gaze, arrows point towards the direction of gaze shifts). (F) Right facial weakness evident on clinical examination. (G) Note the right orbicularis oculi weakness on closure of both eyelids. Consent has been obtained for publication of this figure.

Figure 2 (A) Right paramedian pontine infarct seen on the T2 weighted sagittal magnetic resonance imaging (arrow). (B) The same lesion in transaxial T2 weighted sequence (arrow).
Eight-and-a-half syndrome

R Nandhagopal and S G Krishnamoorthy

*J Neurol Neurosurg Psychiatry* 2006 77: 463
doi: 10.1136/jnnp.2005.078915

Updated information and services can be found at:
http://jnnp.bmj.com/content/77/4/463

These include:

**References**
This article cites 1 articles, 0 of which you can access for free at:
http://jnnp.bmj.com/content/77/4/463#BIBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

Radiology (1688)
Radiology (diagnostics) (1272)
Ophthalmology (806)
Cranial nerves (503)
Hypertension (364)
Drugs: CNS (not psychiatric) (1878)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/