

# Abnormal brain MRI diffusion-weighted imaging in a case of Opalski syndrome

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## DESCRIPTION

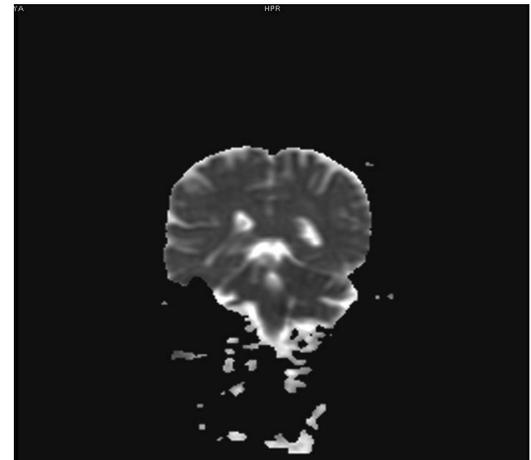
Opalski syndrome is the presence of ipsilateral hemiplegia which is associated with symptoms of a lateral medullary syndrome. Studies confirm that the infarction, in such cases, occur at lower level than that found in lateral medullary syndrome.

Thus far, most cases of this syndrome reported have been attributed to vertebral artery occlusion/stenosis, or vertebral artery dissection which compromises the medullary penetrating arteries.<sup>1-3</sup> Meanwhile, there are two reports concerning Opalski syndrome caused by vertebral vascular compression, which mentioned that Opalski syndrome can be provoked not only by infarction, but also by medulla oblongata dysfunction caudal to the pyramidal decussation caused by vascular compression.<sup>4 5</sup>

The pyramidal fibre involvement in Opalski is ipsilateral to the side of infarct as these fibres involved, are after their crossing from contralateral side at the level of lower medulla.<sup>6</sup>

Diffusion-weighted imaging (DWI) is a sensitive MRI sequence to detect acute infarct. However, as per the available literature, detection of this infarct so as to cause Opalski syndrome has been reported only twice before, and is extremely rare.<sup>7</sup>

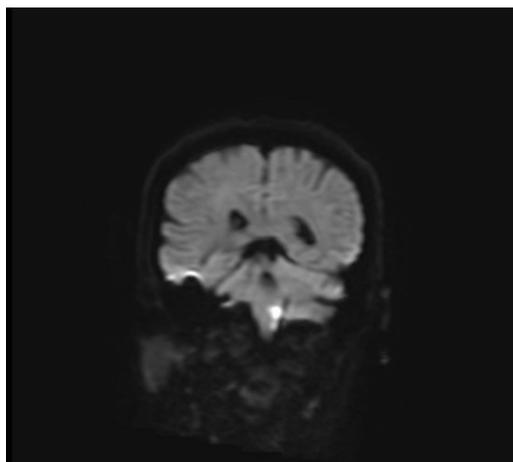
Our patient presented with abrupt onset of the left-sided hemiparesis, headache, gait disturbance and recurrent vomiting. Neurological examination revealed left-sided hemiparesis (MRC grade 3/5 power), Left Horner's syndrome, left upper limb incoordination, ipsilateral face decreased pin prick



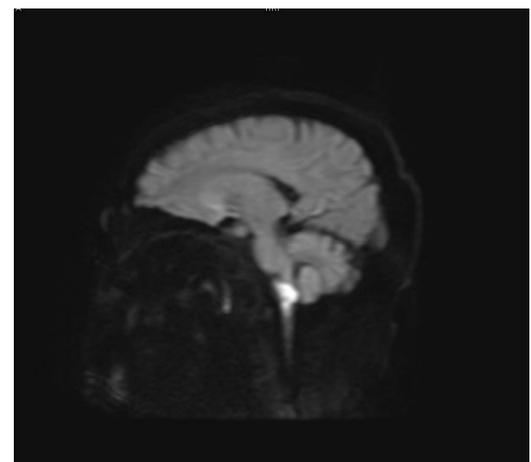
**Figure 2** Apparent diffusion coefficient sequence showing restriction (in sagittal view), suggestive of acute infarct in inferior medulla extending below foramen magnum probable involvement upto C1.

and contralateral body sensory affection. The patient's left plantar was extensor.

We did the bilateral carotid-vertebral Doppler, which did not show any obvious occlusion, but it did show increased pressure change in the affected vertebral suggestive of probable distal obstruction. The intracranial flow voids in the affected vertebral and basilar artery were however normal. Hence we feel vascular stenosis/occlusion is a possibility in our patient but could not be proven as MR



**Figure 1** Diffusion-weighted sequence showing restriction (in sagittal view), suggestive of acute infarct in inferior medulla extending below foramen magnum probable involvement upto C1.

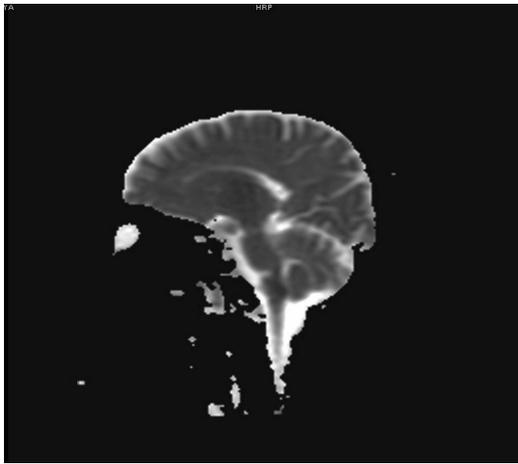


**Figure 3** Diffusion-weighted imaging sequence in coronal view showing restriction in inferior medulla extending below probably upto C1, suggestive of acute infarct.



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**To cite:** Deshpande A, Shetty A, Pai AR, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-201695



**Figure 4** Apparent diffusion coefficient sequence showing restriction (in coronal view), suggestive of acute infarct in inferior medulla extending below foramen magnum probable involvement upto C1.

### Learning points

- ▶ Opalski syndrome is a rare variant of lateral medullary syndrome and is set to involve pyramidal fibres in addition to the structures usually involved in lateral medullary syndrome.
- ▶ The patient has hemiparesis ipsilateral to the side of infarct in Opalski syndrome as the involved fibres have already crossed at lower level of medulla before getting affected.
- ▶ The infarct is usually picked up in fluid attenuated inversion recovery, T2-weighted MRI sequences and diffusion-weighted imaging showing restriction in a case of Opalski syndrome is rare.

angiography was not performed in our patient in view of patients financial constraints.

MRI of the brain (selected sequences—DWI/ADC) was performed, which showed corresponding left lower medullary restriction, corroborative to the clinical diagnosis of Opalski syndrome.

Figures 1 and 2, respectively, show diffusion-weighted and apparent diffusion coefficient sequence restriction in lower medulla and upper cervical cord in sagittal view. Figure 3 and 4 respectively depict the before mentioned, in coronal view.

**Acknowledgements** The authors would like to thank Dr Rajagopal K, Professor and Head, Department of Radiology, Kasturba Medical College, Manipal 576102, Karnataka, India.

**Contributors** AJD involved in the conception, design, and analysis and interpretation of data. AS involved in drafting of the article and revising it critically for important intellectual content. ARP, SR were involved in the content and final approval of the version to be published.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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