

Ipsilateral Hemiplegia in a Lateral Medullary Infarct—Opalski's Syndrome

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ABSTRACT

A 42-year-old man was admitted complaining of the sudden onset of headache, vomiting, vertigo, and gait disturbance. The authors found hemiparesis of his right limbs, right Horner's syndrome, and decreased pain and temperature sensation of his right face and left limbs. Diffusion-weighted imaging (DWI) showed an acute small infarct located on the right side of the lateral lower medulla. This is the first report of Opalski's syndrome with lower medullary infarction detected by DWI.

Key words: Opalski's syndrome, ipsilateral hemiplegia, lateral medullary syndrome, diffusion-weighted imaging.

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Opalski's syndrome is a variant of lateral medullary syndrome with ipsilateral hemiplegia that was first described by Opalski in 1946.¹ Some pathological studies and neuroradiological findings obtained by conventional magnetic resonance imaging (MRI) have shown that the lesion causing this syndrome is located lower than in Wallenberg's syndrome and involves the corticospinal fibers caudal to the pyramidal decussation.^{2,3} To confirm that lower medullary infarction is responsible for this syndrome, we performed diffusion-weighted imaging (DWI), which has become available to demonstrate temporal association between clinical signs and infarction.

A 42-year-old man with hypertension was admitted to our hospital complaining of the sudden onset of headache, vomiting, vertigo, and gait disturbance. He had no recent history of head and/or neck trauma. On arrival, his consciousness was clear. The blood pressure was 140/90 mm Hg, and the pulse rate was 66/min with a regular rhythm. Neither vascular bruits nor

heart murmurs were found. Ocular movements were normal without nystagmus, and his pupils were equal in size and were reactive to light and accommodation. The other cranial nerves were also intact. Slight truncal ataxia was detected, but motor function, sensation, and reflexes were normal. A few hours later, he began to complain of right facial pain and difficulty in using his right arm. Then we found hemiparesis of his right limbs, as well as right Horner's syndrome and decreased pain and temperature sensation of his right face and left limbs.

Laboratory tests all gave normal findings, including coagulation and immunological tests. The chest X-ray and the electrocardiogram were also normal.

On the second hospital day, DWI (the average of 3 directions) showed an acute small infarct located on the right side of the lateral lower medulla (Fig 1A). The apparent diffusion coefficient ratio ($ADCr = ADC \text{ stroke} / ADC \text{ contralateral}$) was 0.47. Conventional MRI (T2-weighted, T2WI) also showed an infarct at the same place (Fig 1B). MR angiography of the intracranial and cervical arteries was normal. Ultrasonography of the extracranial carotid and vertebral arteries was also normal. Transesophageal echocardiography showed neither thrombus in the left atrium and left ventricle nor a patent foramen ovale.

In this patient, we demonstrated acute lower medullary infarction associated with Opalski's syndrome by using DWI.

In 1946, Opalski reported 2 patients with ipsilateral facial loss of pain and temperature sensation, Horner's syndrome, hemiplegia, ataxia, and contralateral loss of pain and temperature sensation in the limbs.¹ He suggested that these signs were

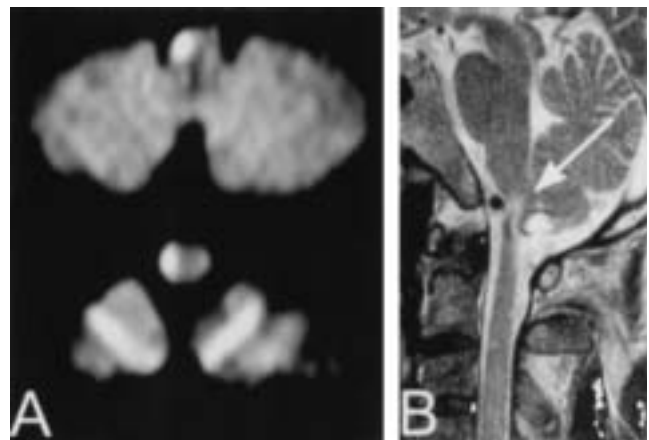


Fig 1. Axial diffusion-weighted imaging demonstrates hyperintensity, indicating an acute brain infarct, in the lateral lower medulla (A). Sagittal T2-weighted imaging visualizes the extent of the ischemic lesion (B).

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related to occlusion of the posterior spinal artery, while Dhamon et al³ and Hommel et al⁴ reported that the syndrome was due to occlusion of the vertebral artery. In the current case, MR angiography showed no stenosis or irregularity of the right vertebral artery and no significant cardiac disorders were documented. Therefore, we could not find any causative cardiovascular abnormalities contributing to the infarct.

Although there have been some reports on the lesion responsible for Opalski's syndrome as demonstrated by T2WI, conventional MRI is handicapped by difficulty in differentiating between new lesions and old asymptomatic infarcts.²⁻⁶ In the current patient, DWI detected an acute infarct located on the right side of the lateral lower medulla. To the best of our knowledge, this is the first report of Opalski's syndrome with lower medullary infarction detected by DWI.

References

1. Opalski A. Un nouveau syndrome sous-bulbaire: syndrome partiel d'artère vertébro-spinale postérieure. *Paris Med* 1946;1:214-220.
2. Osetowska E, Krasnicka Z. Sur le syndrome sous-bulbaire d'Opalski avec une étude anatomique (contribution aux aspects paradoxaux du syndrome de Wallenberg). *Rev Neurol (Paris)* 1961;104:314-320.
3. Dhamon SK, Iqbal J, Collins GH. Ipsilateral hemiplegia and the Wallenberg syndrome. *Arch Neurol* 1984;41:179-180.
4. Hommel M, Pollak P, Gaio JM, et al. Imagerie par résonance magnétique et infarctus latérobulbaire. *Rev Neurol (Paris)* 1988;144:272-278.
5. Milandre L, Lucchini P, Khalil R. Lateral bulbar infarctions. Distribution, etiology and prognosis in 40 cases diagnosed by MRI. *Rev Neurol (Paris)* 1995;151:714-721.
6. Montaner J, Alvarez-Sabin J. Opalski's syndrome. *J Neurol Neurosurg Psychiatry* 1999 Nov;67(5):688-689.