

## Dermatomal Sensory Manifestations in Opalski Syndrome

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A 31-year-old Japanese woman presented with sudden-onset unstable gait followed by nuchal pain. A neurological examination revealed right-sided limb weakness and decreased pain and thermal sensation on the left side below the level of the L1 dermatome. A lower lateral medullary infarction with ipsilateral hemiplegia, known as Opalski syndrome, caused by spontaneous vertebral artery dissection was diagnosed by magnetic resonance imaging. The spinothalamic tract in the medulla oblongata has a topographic arrangement of sensory fibers, and the dermatomal sensory deficit in this case can be explained in relation to that. This is the first reported case of Opalski syndrome with dermatomal sensory manifestations. Opalski syndrome could be a differential diagnosis for dermatomal sensory manifestations. **Key Words:** Dermatomal sensory manifestations—Opalski syndrome—sensory level—lateral medullary infarction—Wallenberg syndrome. © 2017 National Stroke Association. Published by Elsevier Inc. All rights reserved.

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### Case Report

A 31-year-old Japanese woman was admitted to our hospital presenting with sudden-onset gait instability followed by nuchal pain. The patient's past medical history included hypertension. The patient had no history of trauma or rotation movements to her neck. A neurological examination revealed mild right-sided limb weakness, and decreased pain and thermal sensation on the left side below the level of the L1 dermatome (Fig 1, A). Blood analyses were normal, except for a positive antinuclear antibody test without other collagen disease-related an-

tibodies. Diffusion-weighted magnetic resonance imaging revealed a right lower lateral medullary infarction (Fig 1, B,C). A focal stenosis revealed by magnetic resonance angiography (Fig 1, D) and a high signal on T1-weighted images at the right vertebral artery (Fig 1, E) suggested vertebral artery dissection. A diagnosis of lower lateral medullary infarction with ipsilateral hemiplegia, known as Opalski syndrome, caused by spontaneous vertebral artery dissection was made. The symptoms gradually resolved with antihypertensive therapy and rehabilitation. On day 15, the patient was walking without assistance and was discharged.

### Discussion

Opalski syndrome is a rare variant of Wallenberg syndrome, with ipsilateral hemiplegia.<sup>1</sup> Pathological and radiological studies have shown that ipsilateral hemiplegia is caused by a lesion in the corticospinal fibers caudal to the pyramidal decussation.<sup>1-3</sup> Unilateral sensory impairment below the sensory dermatome usually suggests involvement of the spinal cord. The present case was

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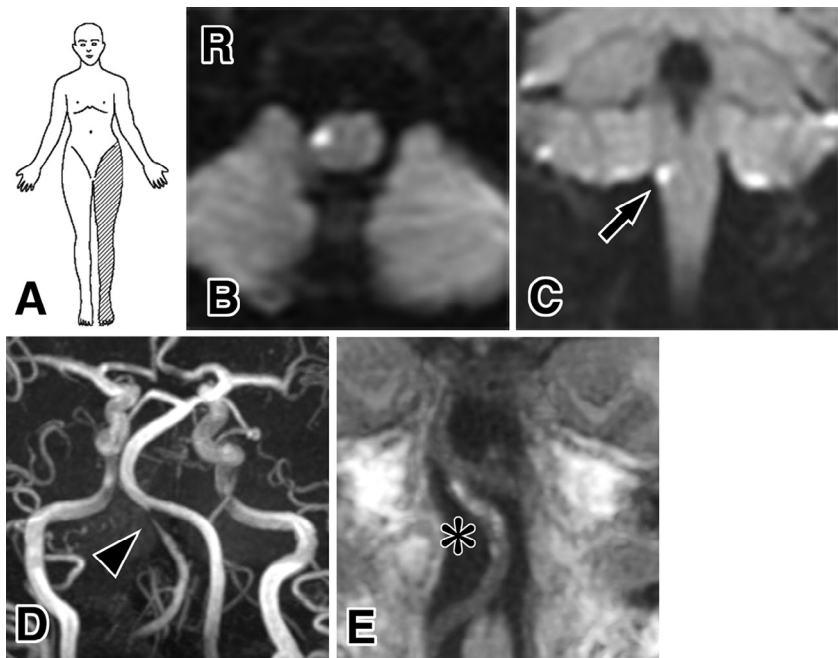
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**Figure 1.** (A) Schematic drawing of pain and thermal sensation deficit. (B-E) Brain magnetic resonance imaging. Diffusion-weighted image of the axial (B) and the sagittal (C) sections showing a small infarction in the lower right lateral medulla (arrow). A focal stenosis on magnetic resonance angiography (arrowhead) (D) and a high signal on a T1-weighted image of a sagittal section at the right vertebral artery (asterisk) (E) suggest vertebral artery dissection.

characterized by dermatomal sensory impairment below the L1 dermatome. However, the patient also had ipsilateral hemiplegia, so we suspected that the lesion was in the lower medulla oblongata or the upper cervical cord involving the spinothalamic tracts and corticospinal fibers caudal to the pyramidal decussation. The lateral spinothalamic tract conveys pain and thermal sensation in the contralateral body and is arranged topographically in the medulla oblongata.<sup>4</sup> Afferent fibers from the sacral, lumbar, thoracic, and cervical areas are arranged in order from the lateral to the medial portions of the tract.<sup>4</sup> The lesion in the present case was mostly restricted to the right lateral portion of the spinothalamic tract, involving sensory fibers from the sacral and lumbar dermatomes on the left side. Therefore, the sensory deficit was seen below the left L1 dermatome. Although patients presenting with such sensory deficits in a dermatomal distribution have been reported in Wallenberg syndrome,<sup>5,6</sup> this is the first reported case presenting such dermatomal sensory manifestations in Opalski syndrome. The present case demonstrates

that Opalski syndrome should be considered as a differential diagnosis in cases presenting with dermatomal sensory deficits.

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