# The lateral medullary syndrome

Jane Luker, BDS, FDS, PhD, and Crispian Scully, BSc, BDS, MD, FDS, PhD, MRCPath, Bristol, England

CENTRE FOR THE STUDY OF ORAL DISEASE, UNIVERSITY DEPARTMENT OF ORAL MEDICINE, SURGERY, AND PATHOLOGY, BRISTOL DENTAL HOSPITAL AND SCHOOL

The lateral medullary syndrome is a rare syndrome resulting from a cerebrovascular accident involving part of the medulla oblongata with consequent loss of pain and temperature sensation in the orofacial region, loss of taste, and palatal palsy and loss of gag reflex, together with Horner's syndrome and ataxia. A case is presented and the literature reviewed.

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Cerebrovascular accidents (CVAs) are a common cause of upper motor neuron lesions, particularly in later life. The common pattern is hemiplegia consequent on a CVA in the internal capsule.

An example of a less common lesion is produced by infarction in the lateral medulla (Fig. 1) lying posteriorly to the inferior olivary nucleus, which produces a clinical syndrome referred to variously as the lateral medullary syndrome, posterior inferior cerebellar artery (PICA) syndrome, or Wallenberg's syndrome.<sup>2, 3</sup> The infarction may be caused by occlusion of the vertebral artery or posterior cerebellar artery supplying the medulla and the inferior cerebellum, 1, 4 and may affect structures as in Table I. Though the signs and symptoms of the lateral medullary syndrome are some of the most striking in neurology and of particular interest to the dental surgeon because of the involvement of the V, IX, and X cranial nerves, the syndrome appears not to have been recorded in the dental literature.

## CASE REPORT

A 63-year-old, previously fit retired laborer was admitted to the hospital with complaints of the sudden onset of dysphagia, hoarseness, ataxia, and hiccups. On examination, a left-sided Horner's syndrome was present together with nystagmus of both eyes to lateral gaze and diplopia to the right. The left side of the face exhibited loss of sensation to pain and temperature, as did the right arm and leg. The coordination of the left leg and trunk was poor, and the right arm exhibited an increase in muscle tone and weakness. On standing, the patient tended to fall to the left side.

<sup>a</sup>Senior Dental Officer. <sup>b</sup>Professor. 7/13/11378

**Table I.** Structures within the medulla affected in lateral medullary syndrome

Structure affected	Symptoms/sign
Dorsal nuclei of cranial nerves IX and X	Hoarseness. Dysphagia. Dysarthria. Ipsilateral palatal and vocal chord paralysis. Diminished gag reflex.
Spinothalamic and quintothalamic tracts	Loss of pain/thermal sensation in contralateral limbs and trunk +/- face.
Sympathetic fibers	Ipsilateral Horner's syndrome (constricted pupil, ptosis, decreased sweating).
Inferior cerebellar peduncle	Ataxia—falling to affected side.
Nucleus ambiguus	Vomiting.
Nucleus and tract of cranial nerve V	Impaired sensation of ipsilateral side of face.
Tractus solitarius	Loss of taste.
Inferior vestibular nucleus	Nystagmus. Oscillopsia. Diplopia. Vertigo. Nausea.
Reticular formation	Hiccup.

#### **Oral features**

Intraorally, there was loss of pain and temperature sensation in the distribution of the left maxillary and mandibular branches of the trigeminal nerve, the gag reflex was absent and the left side of the palate paralyzed, as evident by deviation of the uvula to the right (Fig. 2), and there was loss of taste sensation on the left. From these signs and symptoms, it was clear that a lesion affected cranial nerves V, IX, and X, the sympathetic, vestibular nucleus, and cerebellum, and a diagnosis of left-sided lateral medullary syndrome was made and confirmed by nuclear magnetic resonance imaging (Fig. 3), which showed a degree of cerebral atrophy together with asymmetry of the brain stem, most likely due to an infarct.

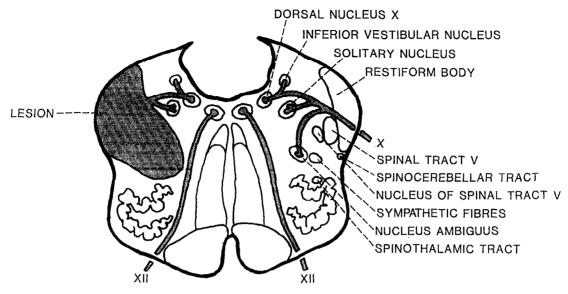


Fig. 1. Diagram of medulla oblongata showing site of lesion producing lateral medullary syndrome.



Fig. 2. Intraoral view showing deviation of soft palate to right as result of left-sided palatal paralysis.

### Management

A nasogastric tube was inserted to permit adequate nutrition. After 3 weeks, the palatal paralysis improved and the gag reflex had returned, and there was also a marked improvement in coordination. After 4 months, the patient had made an almost complete recovery, apart from mild loss of coordination requiring the patient to walk with a stick, and loss of sensation of the left side of the face, right leg, and arm.

## DISCUSSION

Lateral medullary syndrome, although uncommon, is of particular interest, because it is a cause of unilateral palatal paralysis, impaired facial and oral sensation, and loss of sense of taste. The dental surgeon can aid the restoration of speech and swallowing by the provision of intraoral appliances.5

## REFERENCES

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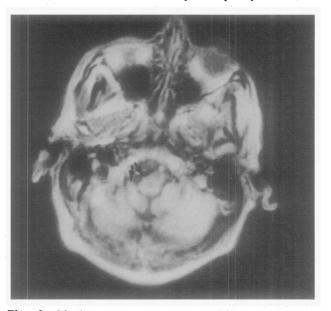


Fig. 3. Nuclear magnetic resonance (MRI) scan showing assymetry of brain stem (as shown by arrows).

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Reprint requests to:
Dr. J. Luker
Centre for the Study of Oral Disease
University Department of Oral Medicine, Surgery, and
Pathology
Bristol Dental Hospital and School
Lower Maudlin Street
Bristol
BS1 2LY
England