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Isolated Facial Sensory Loss in Stroke Restricted to the Ventroposteromedial Nucleus

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Isolated facial sensory loss may be the result of ischemic stroke of the ventroposteromedial nucleus. Diffusion-weighted imaging (DWI) may depict this exceedingly unusual pure sensory stroke presentation.

REPORT OF A CASE

A 73-year-old woman with hypercholesterolemia presented with acute onset of left lower facial tingling numbness without weakness. She delineated a discrete region of mild numbness around the left corner of her lips (Figure 1). On admission, DWI revealed a single punctate (5 mm) focus of restricted diffusion within the midportion of the right thalamus consistent with a small subacute lacunar infarct (Figure 2). There were also chronic scattered areas of abnormal T2 hyperintensity involving the subcortical and deep white matter of the cerebral hemispheres and pons. Magnetic resonance angiography was normal. After 1 day of antiplatelet therapy and hydration, her symptoms subsided.

COMMENT

Pure sensory stroke has been extensively characterized as an infrequent cerebrovascular syndrome accounting for 5.4% of acute ischemic stroke and 17.4% of lacunar syndromes in 2500 stroke patients.¹ The clinical presentation with isolated involvement of the left lower face as a result of infarction in solely the ventroposteromedial nucleus has not been previously described.

Prior descriptions of pure sensory stroke have emphasized cortical lesions or subcortical infarcts that manifest as patchy numbness of the extremities, with some facial or oral involvement. Thalamic lesions have often extended into the adjacent ventroposterolateral nucleus. Although pathological verification of these thalamic lesions has classically described lacunar infarction due to microvascular arteriosclerosis, more recent descriptions have considered microembolic disease as a potential mechanism.²⁻⁴

Routine evaluation of patients with acute stroke symptoms with DWI may expand current clinical-radiographic correlations and discern critical mechanistic features that may be used to tailor treatment and future preventive strategies.⁵

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Unusual stroke manifestations, such as isolated lower facial numbness resulting from ventroposteromedial nuclear infarction may be readily apparent on DWI, leading the clinician to emphasize secondary stroke preventive measures. Increasingly routine use of DWI for stroke will likely reveal various infarct patterns that may invoke an underlying stroke etiology or vascular mechanism. These imaging clues may help revise classic descriptions of the lacunar hypothesis.

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Figure 1.
Schematic illustration of facial sensory loss in a partial region of the left trigeminal distribution.

Figure 2. Infarction of the ventroposteromedial nucleus of the right thalamus depicted on diffusion-weighted image (A) and T2-weighted magnetic resonance image (B).