Teaching NeuroImages: Onion-skin pattern facial sensory loss

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Figure 1 Photograph of patient showing gradation of loss, sagittal T2 MRI, and axial T2 MRI

(A) Different patterns showing gradation of loss. White arrow, maximal loss peripherally; black arrow, spared central part of face. (B) Sagittal T2 MRI shows a hyperintense lesion in the brainstem and spinal cord extending from the lower medulla to C2 level. (C) Axial T2 MRI at the level of the upper cervical cord shows a hyperintense lesion in the left posterior-lateral cervical cord.

A 42-year-old woman presented with acute-onset facial numbness. Physical examination revealed graded loss of pain and temperature over the left half of her face with central sparing (figure 1A)—an onion-skin distribution. Corneal reflex was sluggish on the left, but results for the rest of the clinical examination, CSF studies, and visual evoked potential were normal. MRI was suggestive of acute demyelination (figure 1, B and C), and the patient's condition improved with steroids. This segmental pattern of trigeminal sensory loss, in contrast to the divisional

pattern (figure 2, A and B), reflects the rostral-caudal somatotopic arrangement in the spinal tract nucleus of the trigeminal nerve with the perioral area represented rostrally and the lateral face caudally (figure 2C)^{1,2} and helps in anatomic localization.

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Figure 2 Divisional pattern of sensory loss (A), segmental pattern of sensory loss (B), and schematic diagram of the trigeminal system in the brainstem (C)

CN = cranial nerve. (A, B) Reprinted from Blumenfeld,¹ with permission. (C) Reprinted from Brazis et al.,² with permission.

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