

HOARSE VOICE & FALLING TO THE RIGHT (Slide CC11-1)

CASE 11: Answers:

1. **dizziness** - not well characterized by the history, but if true vertigo, this could suggest a lesion of CN VIII, the vestibular nuclei, or the cerebellum.

unsteady gait, falling to the right, R sided dysmetria and poor R RAM - these all suggest right sided cerebellar dysfunction and could be produced by a lesion either of the right cerebellum itself or involving the afferent/efferent pathways of the right cerebellum.

decreased pain and temp. sensation in R face - could be produced by a lesion of the spinal trigeminal tract, or spinal trigeminal nucleus, or trigeminothalamic fibers.

decreased pain and temperature sensation in L arm and L leg - suggests a lesion of the right anterolateral system, either in the cervical spinal cord or brainstem.

R ptosis; R pupil small, minimally reactive to light - these are signs of Horner's syndrome caused by disruption of sympathetic innervation to the face. It could be produced either by a lesion in the lateral brainstem interrupting descending sympathetic pathways, by a lesion of the superior thoracic nerve roots or of the cervical sympathetic chain, or by a lesion interfering with postganglionic sympathetic fibers as they ascend along blood vessels toward the face.

hoarse voice, decreased gag reflex on R - the larynx is innervated by CN X and XI, and the pharynx is innervated by CN IX and X. Thus, hoarseness and unilateral decreased gag reflex could be produced by peripheral injury to these nerves or by a lesion involving the R nucleus ambiguus.

2. The above described symptoms and signs are typical of lateral medullary or Wallenberg's Syndrome which is caused by occlusion of the posterior inferior cerebellar artery (PICA) - (see NTA, p. 375, 397).

MRI: In these T2 weighted images (see slide) CSF appears bright and myelinated structures appear dark. In the left image the right lateral medulla appears white due to increased water content in the infarcted edematous tissue. In the right image, slightly more rostral, the normal appearance of the medulla is restored. Identify: inferior cerebellar peduncles, pyramidal tracts, fourth ventricle, cerebellum.

Try to imagine the following structures passing through the infarcted area on the left image: inferior cerebellar peduncle (spinocerebellar tracts), spinal tract and nucleus of CN V, anterolateral system, descending sympathetic pathway, nucleus ambiguus & fibers of CN IX and X, vestibular nuclei.

Clinical Course:

Doppler studies showed stenosis of the R vertebral artery, and an echocardiogram did not reveal any source of emboli. The patient was treated with anticoagulation and she then received extensive inpatient rehabilitation therapy. She was able to return home after two months fully independent except for use of a walker while preparing meals.