The Five-Minute Neurological Examination

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Mental Status

- Cognition
- Language
  - Naming

Cranial Nerves

- Visual fields
- Pupils
- Eye movements
  - Pursuits and saccades
- Facial symmetry
  - Eye blinks
- Lower cranial nerves

Motor Examination

- Adventitial movements
- Pronator drift
- External rotation of leg
- Muscle tone
- Functional strength testing

Sensory Examination

- Focus on patient's symptoms
- Don't over-interpret
- Thoracic sensory level
- Touching nose with eyes closed
- Romberg test

Coordination

- Ataxia
  - Cerebellar
  - Sensory disorders
  - Upper motor neuron lesion
- Truncal stability

Reflexes

- Purely objective
- Asymmetry
- Ankle clonus
- Babinski sign – don’t over-interpret

Gait

- Base
- Stride
- Arm swing
- Turns
- Symmetry

Examination Order 1

- History
  - Mental status
  - Adventitial movements
  - Facial symmetry
- Gait
  - Casual
  - Heel
  - Toe
  - Tandem

Examination Order 2

- Truncal stability and Romberg test
- Functional motor testing
  - Upper limbs
  - Lower limbs
- Visual fields, pupils, eye movements

Examination Order 3

- Motor examination
  - Pronator drift
  - Finger-to-nose testing with eyes closed
  - Motor tone
  - Hand grips
- Reflexes
  - Muscle stretch reflexes
  - Babinski sign

Cases

Case 1

A 68-year-old woman with hypertension was brought to the emergency department by her friend because of dizziness, vertigo and difficulty walking, which she first noted when she awoke from a nap that evening.

BP=200/130 mm Hg and P=76/min. She is examined lying on a gurney in the emergency department. There is minimal nystagmus with right gaze. Facial strength and sensation are normal. Motor and sensory examinations are entirely normal. Finger-to-nose testing is normal bilaterally. Muscle stretch reflexes are normal throughout.

Questions

- Where would you best localize the lesion?
- What is the most likely diagnosis?
- What is the most appropriate next step in diagnosis?

Next Step

- Walk the patient!
  - Significant truncal ataxia

Cerebellar Hemorrhage

Case 2

A 55-year-old man with hypertension and diabetes mellitus is admitted for cardiac catheterization because of worsening angina and an abnormal exercise tolerance test. Following the procedure, which demonstrates severe LAD disease, he is noted to be confused, and a neurological consultation is obtained.

BP=150/90 mm Hg, and P=80/min and regular. He is awake, alert and fully oriented. He appears confused when asked to describe what happened to him that day. His face is symmetrical. He has full power in all four limbs. Sensory examination is entirely normal. Muscle stretch reflexes are symmetrical.

Questions

- Where would you best localize the lesion?
- What is the most likely diagnosis?
- What is the most appropriate next step in diagnosis?

Next Step

- Test naming
  - Significant anomia
- Test visual fields
  - Right homonymous hemianopia

Diagnosis

- Left MCA embolic stroke

Case 3

A 25-year-old man with Type 1 diabetes mellitus on insulin sees his physician because of right arm weakness that he noted while working on his car last week. Several days before that, he fell while taking out the garbage, and landed on his right shoulder.

BP=120/80 mm Hg and P=84/min. He is fully awake and alert. He has difficulty raising his right arm above his head, and has a slightly weaker handgrip on the right. He has some trouble manipulating fine objects with his right hand. Muscle power in the remaining three limbs is full. There is slight vibratory loss at his toes bilaterally. Muscle stretch reflexes are reported as normal in the upper limbs and at the knees, and absent at the ankles.

Questions

- Where would you best localize the lesion?
- What is the most likely diagnosis?
- What is the most appropriate next step in diagnosis?

Next Step

- Look for upper motor neuron signs
  - Right pronator drift
  - Right upper limb spastic catch
  - Right Babinski sign
- Listen for bruits
  - Left carotid bruit

Diagnosis

- Left hemispheric stroke

Case 4

A 70-year-old woman with hypertension, diabetes mellitus and coronary artery disease, is admitted to the CCU because of the acute onset of nausea, vomiting and a cardiac arrhythmia characterized by frequent PVC's. Acute myocardial infarction is ruled out, and she is transferred to a regular medical floor the following day. Examination there reveals dysarthria and dysphagia, and a neurological consultation is obtained.

BP=130/90 mm Hg and P=80/min with frequent premature beats. She is fully awake and alert. Her face is symmetric. Her voice is somewhat hoarse and she is unable to swallow without coughing. Muscle power is full in all four limbs, and muscle stretch reflexes are symmetrical. Plantar responses are flexor bilaterally.

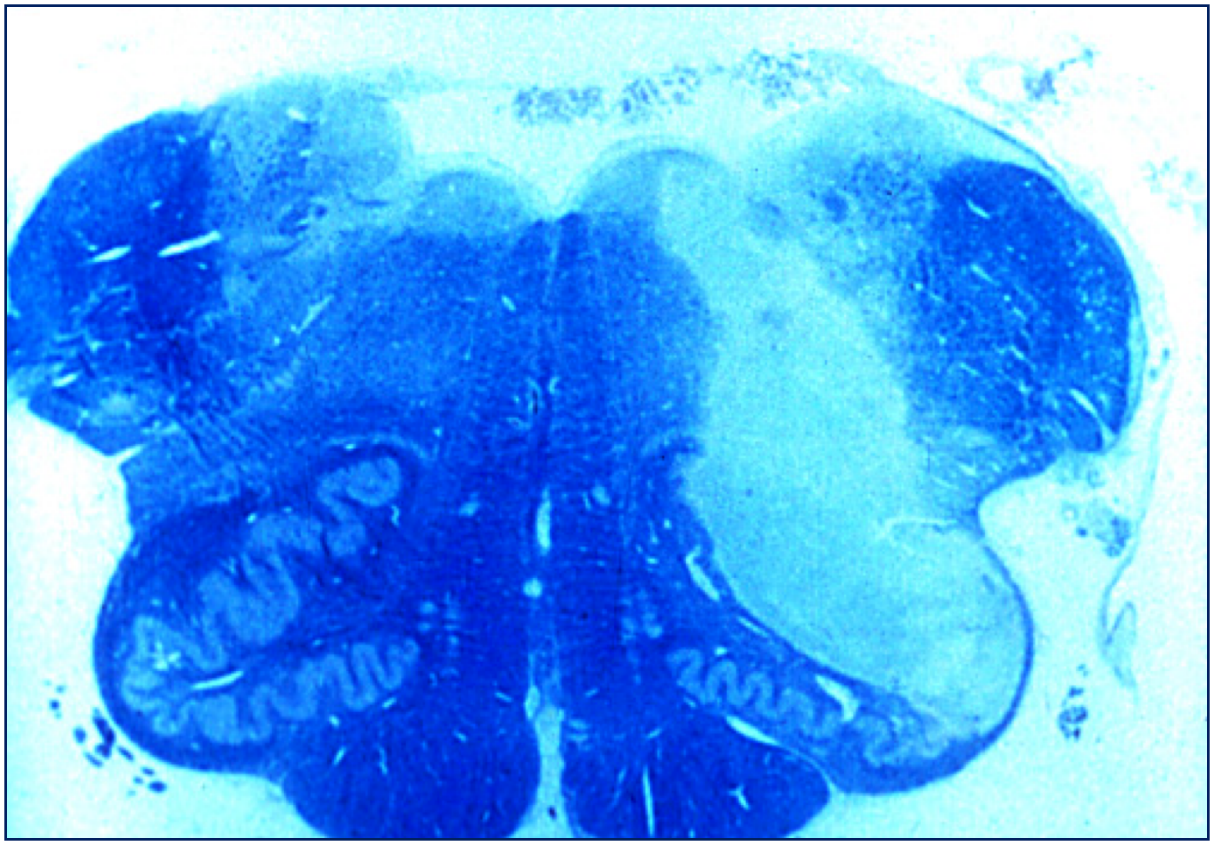
Questions

- Where would you best localize the lesion?
- What is the most likely diagnosis?
- What is the most appropriate next step in diagnosis?

Next Steps

- Look for brain stem signs
  - Right facial numbness to pin
  - Left limb numbness to pin
  - Right palatal weakness
  - Right-sided ataxia
  - Right Horner's syndrome

Lateral Medullary Stroke



Case 5

A 60-year-old college professor is referred for evaluation of muscle stiffness and a weak voice that has been present for the past six months. In fact, some of his students have complained that it is getting more difficult to understand him when he lectures. They also have had trouble reading his handwriting on the blackboard.

BP=160/80 mm Hg and P=68/min. Mental status is normal. His voice is soft, but cranial nerves are otherwise normal. Muscle power is full and sensation is normal in all four limbs. Muscle stretch reflexes are 2+ throughout and plantar responses are flexor bilaterally. His gait is somewhat slow but is otherwise normal.

Questions

- Where would you best localize the lesion?
- What is the most likely diagnosis?
- What is the most appropriate next step in diagnosis?

Next Steps

- Look for extra-pyramidal signs
  - Cogwheel rigidity at the wrists, R>L
  - Bradykinesia – slowed finger taps, R>L
  - Intermittent resting tremor at his right wrist
  - Postural instability

Diagnosis

- Parkinson disease

UR MEDICINE

MEDICINE *of* THE HIGHEST ORDER