

# Approach to a Neurologic Diagnosis

## Neurologic Diagnosis

- History
- Physical & Neurological Examination
- Ancillary Procedures
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### 3 Questions Asked

- Is there a neurologic problem?
- Where is the neurologic problem?
- What is the neurologic problem?

### Is there a neurologic problem?

- Focal neurologic deficits
- Increased intracranial pressure
- Signs of meningeal irritation

### Is there a neurologic problem?

- Meningeal irritation

Headache / Vomiting with

- a. Nuchal rigidity
- b. (+) Brudzinski
- c. (+) Kernig

### Is there a neurologic problem?

- Increased ICP

Headache / Vomiting with

- a. Papilledema
- b. Diplopia with internal squint (lateral rectus palsy 2° to Abducens nerve lesion)
- c. Deterioration in the level of consciousness
- d. Bulging fontanel, separation of sutures, rapid enlarging head size.

## **Papilledema**

### **Is there a neurologic problem?**

- Focal neurologic deficits
  - a. Disturbance in higher intellectual functions
    - eg : Memory impairment
    - Emotional and behavioral changes (organic)
    - Language disturbance
    - Seizure
  - b. Cranial nerve deficits
    - eg : diplopia, dysphagia, dysarthria
    - facial numbness & sensory impairment
  - c. Weakness or paralysis of extremities
  - d. Incoordination, poor equilibrium
  - e. Reflex asymmetry, pathological reflexes ( + Babinski)
  - f. Sensory impairment in trunk and extremities

### **Neurologic Examination**

- Mental status
- Cranial nerves
- Motor
- Cerebellar
- Reflexes
- Sensory

### **Where is the neurologic problem?**

- Levelize
  
- Lateralize
  
- Localize

### **What is the neurologic problem?**

- Congenital / developmental
- Trauma
- Infection
- Metabolic/Endocrine
- Intoxication
- Nutritional deficiency
- Degenerative
- Neoplasm
- Vascular
- Demyelinating

- Immunologic

### **What is the neurologic problem?**

- Congenital / developmental

- Trauma

- Infection

- Metabolic/Endocrine

- Intoxication

- Nutritional deficiency

### **What is the neurologic problem?**

- Degenerative

- Neoplasm

- Vascular

- Demyelinating

- Immunologic

### **History**

- Age of onset

- Onset and course

- Other medical data

- Family history

- Social history

### **What is the neurologic problem?**

Days

### **What is the neurologic problem?**

Type of lesion

1. **Focal** → *mass lesion (neoplasm, abscess)*  
*Infarction, hematoma*
2. **Multifocal** → *multiple tumors, abscesses*  
*Multiple Sclerosis*
3. **Diffuse** → *Toxic - Metabolic Encephalopathy*  
*Peripheral neuropathy*  
*Myopathy*

### **Case # 1**

20-year-old- sales lady

Midback pain for 6 months

Progressive numbness and weakness of both lower extremities for 2 months

Difficulty of urination on day of admission

NE : Weakness of both lower extremities

KJ +++++, AJ +++, (+) Babinski bilateral

Can not feel pin prick from soles to umbilicus

### **Is there a neurologic problem?**

- Focal neurologic deficits

- Increased intracranial pressure

- Signs of meningeal irritation

### **Where is the neurologic problem?**

- Levelize

- Lateralize

- Localize

### **Neurologic Examination**

- Mental status

- Cranial nerves

- Motor

- Cerebellar

- Reflexes

- Sensory

### **Where is the neurologic problem?**

—Upper motor neuron

- Cerebrum

- Brainstem

- Spinal cord (lateral corticospinal tract)

- Lower motor neuron
- Anterior horn cell (spinal cord)
- Peripheral nerve
- Neuromuscular junction
- Muscle

**Where is the neurologic problem?**

- Seizure
- Language disorder – aphasia
- Organic mental, behavioral & personality changes
- Contralateral
- Hemiparesis with Babinski & cranial nerve deficits
- Hemisensory deficits
- Homonymous hemianopsia/quadrantanopsia

**Where is the neurologic problem?**

- “Crossed motor/sensory syndrome”
- Ipsilateral cranial nerve deficits
- Contralateral hemiparesis with Babinski
- Ipsilateral limb ataxia
- Internuclear ophthalmoplegia – median longitudinal fasciculus syndrome

**Where is the neurologic problem?**

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- Hemisphere lesion
- Ipsilateral limb ataxia
- intention tremor
- dysmetria
- dysdiadochokinesia
- Vermis lesion
- truncal ataxia
- no limb ataxia

**Where is the neurologic problem?**

- Rigidity
- Dyskinesias
- Rest tremors
- Chorea
- Athetosis
- Dystonia
- Ballismus

**What is the neurologic problem?**

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- Vascular

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- Immunologic

**Case # 2**

15-year-old male

Diarrhea for 3 days 2 weeks PTC

Weakness and numbness both lower extremities

3 days PTC

Day of admission – weakness both LE

NE : Weakness of both LE and both UE

( > feet and hands)

Generalized areflexia

Normal sensation

**Where is the neurologic problem?**

**What is the neurologic problem?**

- Congenital / developmental

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- Intoxication

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- Degenerative

- Neoplasm

- Vascular

- Demyelinating

- Immunologic

**Case # 3**

50-year-old female pharmacist

For 3 months – progressive weakness of both LE and UE

Marked loss of weight inspite of voracious appetite

NE : Bilateral weakness of both thigh flexion  
and extension and both shoulder abduction  
and adduction  
DTR ++ (-) Babinski  
Normal sensation

**Where is the neurologic problem?**

**What is the neurologic problem?**

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**Case # 4**

40-year-old male

s/p splenectomy (2003)

Fever, headache, vomiting for 3 days

PE : febrile

NE : Resistance on passive flexion of the neck

**What is the neurologic problem?**

**Case # 5**

14-year-old male

Generalized tonic clonic convulsion x 3years

Headache and vomiting x 1month

NE : Bilateral papilledema  
Normal visual acuity

**What is the neurologic problem?**

Type of lesion

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**What is the neurologic problem?**

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