Acute and Chronic Neuropathies

ACOI Board Review Course 2013
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Acute and Chronic Neuropathies

- Mononeuropathy
  - one nerve with one point of impingement

- Mononeuropathy multiplex
  - one nerve with multiple points impingement

- Polyneuropathy
  - multiple nerves and multiple points impingement
Acute and Chronic Neuropathies

• Clinical Workup:
  • Family History
  • Glucose
  • Sedimentation rate
  • Creatinine
  • Thyroxine
  • Complete Blood Count
  • Pertinent Radiographic films
Acute and Chronic Neuropathies

• **Focal Compressive-Radiculopathies**
  • Localized peripheral nerve
  • Usually from compression
  • Must differentiate from multiplex
  • Examples:
    • Radial neuropathy
    • Carpal tunnel syndrome
    • Ulnar neuropathy
    • Sciatic nerve
    • Peroneal nerve compression
    • Brachial neuritis
Acute and Chronic Neuropathies

- Mononeuropathy Multiplex
  - Diabetic Neuropathy - MOST COMMON
- Alcoholic Neuropathy -
- Bell’s Palsy
- Multiple Sclerosis (MS)
Acute and Chronic Neuropathies

- **Polyneuropathies**
  - Landry-Guillain-Barre - MOST COMMON
  - Hereditary Motor and Sensory Neuropathy
  - Chronic Inflammatory Demyelinating Polyneuropathy (CIDS) - steroids make it better
- **Other**
  - HIV
  - Toxicity - usually sensory - (Thallium, organophosphates, lead)
  - Nutritional - Thiamine, B6, B12 Deficiencies
  - Paraneoplastic
  - Rheumatologic
Acute and Chronic Neuropathies

• Hereditary Motor and Sensory Neuropathy
  • Also known as Charcot-Marie-Tooth
  • Most common inherited polyneuropathy
  • Two main types: Type I and Type II
  • Autosomal recessive or autosomal dominant
  • Slow onset
  • Foot drop/weakness
  • Sensory loss in a stocking distribution
Acute and Chronic Neuropathies

- **Landry-Guillain-Barre**
  - Most common inflammatory polyneuropathy
  - Ascending paralysis/weakness limbs
  - Areflexia
  - Causes: Preceding infectious illness (2/3)
    - CMV
    - EBV
    - VARICELLA
    - Campylobacter
    - Swine influenza
    - Rabies
  - CSF: elevated protein and slight increase cell count
  - Treatment:
    - Plasmaphoresis
    - IVIG
    - Steroids of no use
Acute and Chronic Neuropathies

• Case 1

• A 52-year-old man presents with 2 years of gradual progressive burning, stinging, and tingling in the feet with a lesser extent of tingling in the fingertips bilaterally. Shoes, socks, and even the light touch of bed sheets are very irritating and limit his ability to rest. When walking the pain becomes more severe. Intermittently there are sharp stabs or jabs of shooting electrical shock pain in the feet.

• The examination shows decreased sensation in a stocking-glove pattern which is symmetric. Muscle strength is normal. The muscle stretch reflexes are normal in the arms and at the knees but absent at the ankles.
Acute and Chronic Neuropathies

• Diagnosis:
  • Chronic Progressive Sensory Neuropathy
    • Metabolic: Diabetes, HIV, Sarcoid, MM, Porphyria
    • Alcohol
    • Nutritional
    • Vascular
    • Toxic
    • Rheumatologic
Acute and Chronic Neuropathies

- Diagnostics
  - Glucose, Creatinine, Liver profile
  - ESR
  - T4
  - CBC
  - CXR
  - SPEP, HIV, ANA, ACE, B12, B1
• **Treatment of neuropathic pain**
  
  • **Trigeminal neuralgia (sharp stabbing face pain)**
    - Carbamazepine / Valproic acid / Phenytoin
    - Gabapentin
    - Lamictal
  
  • **Limb neuralgia (sharp, stabbing, zinging, lightning, bee-sting pain)**
    - Phenytoin
    - Carbamazepine
    - Gabapentin
    - Lyrica (only diabetic/Zoster)
    - Duloxetine (only diabetic)
    - Lamotrigine
    - Topomax
    - Valproic Acid
    - Lidocaine/Capsaicin
  
  • **Continuous burning dysesthesias and supersensitivity (as in a diabetic)**
    - Amitriptyline or nortriptyline or SSRI
    - Propoxyphene or acetaminophen with codeine
    - Carbamazepine / Valproic acid
    - Gabapentin/Pregabalin
    - Topical capsaicin
    - Lamotrigine
    - Topomax
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- Case 2
- A 24-year-old man presents with 5 days of progressive burning, stinging, and tingling in the feet, gradually ascending up into the shins, and creeping into the hands symmetrically. On the day of admission he is aware of some difficulty walking because of the development of bilateral foreleg weakness with foot drop. A few days before the onset of his sensory symptoms he had a severe 24-hour gastrointestinal syndrome with abdominal cramps, malaise, and flu-like symptoms. The examination shows distal sensory loss in a stocking-glove pattern. The muscle stretch reflexes are absent. There is distal weakness with foot drop bilaterally and the hands are as shown.
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• Answer:

• Heavy Metal Poisoning-
  • probably Arsenic or Thallium
Acute and Chronic Neuropathies

Case 3

29-year-old man presents after waking up with intense deep boring aching pain in the right jaw and ear, and sagging of the right side of the face.

Examination shows
Face at rest, smiling, raised eyebrows.
Sensation is normal although increased
The examination of the ear is normal.

What is the diagnosis?
How much work-up is appropriate?
Acute and Chronic Neuropathies

• Answer:

• Bell’s Palsy
• Physical exam only

• What if a vesicular lesion was found on ear exam?
• What would the diagnosis be?
Case 4

A 25-year-old man presents with 3 days of gradual progressive difficulty walking and using the arms overhead. He has had subjective heaviness in the legs, and mild tingling in the feet. Examination shows:

- Moderate weakness of proximal and distal muscle groups (shoulders, arms, and legs in symmetric fashion).
- There is mild decrease in position and vibration sense in the toes.
- The muscle stretch reflexes are absent in the arms and legs.
- He describes a mild respiratory illness 3 days before the onset of weakness.

What is the diagnosis?
Acute and Chronic Neuropathy

• Answer:

• Landry-Guillain-Barre
Acute and Chronic Neuropathy

Case 5

A 200-year-old right-handed vampire presents with no EMR history but has a paper chart with 4 weeks of progressive difficulty using the hands and wrists.

- He has no sensory symptoms.
- Nonspecific generalized fatigue.
- He denies trauma or neck pain.
- “Strange to say there were hairs in the center of the palm,” “the backs of his hands as they lay on his knees in the fire light . . . they had seemed rather white and fine,” “his face was deathly pale.”

Examination shows

- Weakness of wrist and finger extensors bilaterally as shown.
- He has normal strength proximally in the upper extremities, normal leg strength
- Hypoactive muscle stretch reflexes.

Diagnosis?
Acute and Chronic Neuropathies

• Answer:
  
  • Lead Toxicity Neuropathy
Acute and Chronic Neuropathies

- **Case 6**
  - 40-year-old woman presents with 15 years of gradual progressive difficulty with ambulation
  - Tendency to stumble easily;
  - Most recent difficulty with hand function including grip, strength, opening jars, and grasping fine objects.
  - The symptoms are symmetric.
  - There is minimal tingling in the toes but no sensory loss in the hands.
  - The examination shows the presence of atrophy in the foreleg muscles
  - Prominent tibial bones; atrophy of the intrinsic hand muscles and pes cavus.
  - The muscle stretch reflexes are absent
  - There is decreased vibration sense in the toes and fingertips, and slightly decreased pin prick in the toes.
  - There is associated foot drop bilaterally.
  - Proximal strength is normal.

- Diagnosis?
Acute and Chronic Neuropathies

• Answer:

• Charcot-Marie-Tooth Disease
Case 7
A 51-year-old man presents with 3 weeks of continuous burning, stinging, and intense discomfort in the side of the leg as shown. He has no other past medical history, takes no medications, and has no back pain or leg weakness, and no recent viral symptoms.
Examination shows:
Super sensitivity in the circle area whether touched with a pin or with cotton, all stimuli are equally noxious.
Strength in the legs is normal as are the muscle stretch reflexes.
What is the diagnosis?
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• Answer:

• Lateral femoral cutaneous neuropathy syndrome
  • meralgia paresthetica
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- **Case 8**
  - 53-year-old woman presents with 5 days of burning pain in the left posterior chest
  - It radiates around her side to the anterior chest in a band-like pattern.
  - She reports recent malaise, nausea, and vomiting.
  - In the last 24 hours she has developed clusters of vesicles on a red base in the area of burning pain.

- What is the diagnosis?
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• Answer:
• Herpes Zoster