ACUTE AND CHRONIC NEUROPATHIES

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I have no relevant financial or nonfinancial relationships in the products or services described, reviewed, evaluated or compared in this presentation.
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
72-year-old man presents to your outpatient clinic with the complaint of recurrent spells of hand numbness. On exam he has weakness of finger spreading. He also has sensory loss in the last two fingers splitting the ring finger. The most likely etiology for his symptoms is

• A. Recurrent transient ischemic attacks (TIAs)
• B. C6 radiculopathy
• C. C7 radiculopathy
• D. Ulnar neuropathy
Board Exam Sample

72-year-old man presents to your outpatient clinic with the complaint of recurrent spells of hand numbness. On exam he has weakness of finger spreading. He also has sensory loss in the last two fingers splitting the ring finger. The most likely etiology for his symptoms is

• A. Recurrent transient ischemic attacks (TIAs)
• B. C6 radiculopathy
• C. C7 radiculopathy
• D. Ulnar neuropathy

• Answer:
  • Ulnar Neuropathy (D)
Acute and Chronic Neuropathies

- **Clinical Workup:**
  - Personal/Family History
  - Glucose
  - Sedimentation rate
  - Creatinine
  - Thyroxine
  - Complete Blood Count
  - Pertinent Radiographic films
  - EMG-NCV
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* autoimmune
- Diabetic Peripheral Neuropathy - *most common* overall
- 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- gradual onset over years
- 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. To a lesser extent he has 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 like an 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 absent at the ankles otherwise normal.
Acute and Chronic Neuropathies

**Diagnosis:**

Chronic Progressive Sensory Neuropathy

- **Metabolic:** Diabetes, HIV, Sarcoidosis, Myeloma, or 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/Oxcarbazepine
  - Gabapentin
  - Lamotrigine
  - Baclofen

- Limb neuralgia (sharp, stabbing, zinging, lightning, bee-sting pain)
  - Gabapentin
  - Lyrica (only diabetic/Zoster)
  - Duloxetine (only diabetic)
  - Lamotrigine
  - Topomax
  - Lidocaine/Capsaicin

- Continuous burning dysesthesias and supersensitivity (as in a diabetic)
  - Pregabalin
  - Gabapentin
  - SSRI
  - Tricyclic Antidepressants such as Nortriptyline and Amitriptyline
  - Topical Lidocaine
  - Lamotrigine
  - Topomax
  - Tramadol
  - Opioid Analgesics
Acute and Chronic Neuropathies

• Case 2

• A 24-year-old man presents with 5 days of progressive burning, stinging, and tingling in the feet, gradually ascending up the legs
• Creeping into the hands symmetrically.
• On the day of admission he has 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
• The examination shows distal sensory loss in a stocking-glove pattern, muscle stretch reflexes are absent, and foot drop bilaterally
• Hands are shown in picture
Acute and Chronic Neuropathies

• Answer:

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

• Case 3

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

Examination shows:
Face at rest, smiling, raised eyebrows with deficit otherwise normal exam
Sensation is mildly 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?
Acute and Chronic Neuropathies

Case 4

A 25-year-old man presents with 3 days of gradual progressive difficulty walking. He is having weakness of his arms. 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 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
Acute and Chronic Neuropathies

• 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? Treatment?
Acute and Chronic Neuropathies

• **Answer:**

  • Lateral femoral cutaneous neuropathy syndrome
    • *meralgia paresthetica*
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?
Acute and Chronic Neuropathies

• Answer:
  • Herpes Zoster
Acute and Chronic Neuropathies

Amyotrophic Lateral Sclerosis (ALS)

- Also known as “Lou Gehrigs Disease”

- Progressive Degenerative with muscle wasting

- Sensory and Cognitive changes

- Affects men more than women ages 40-60
Acute and Chronic Neuropathies

Clinical Manifestations:
Musculoskeletal
• Weakness/fasciculations/spasticity/paresis/hyperreflexia
Respiratory
• Dyspnea/Difficulty clearing airway
Nutrition
• Difficulty chewing/Dysphagia
Emotion
• Loss of control/ liability
Cognitive
• Intellect intact
Acute and Chronic Neuropathies

Prognosis/Treatment:

Diagnosis is with EMG

Death is usually resultant of pneumonia/respiratory failure

Riluzole (Rilutek) which extends life a few months

Supportive nutrition/ventilation/communication/mobility

Respiratory compromise within 2-5 years of diagnosis