ACUTE AND CHRONIC NEUROPATHIES

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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

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

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- 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.

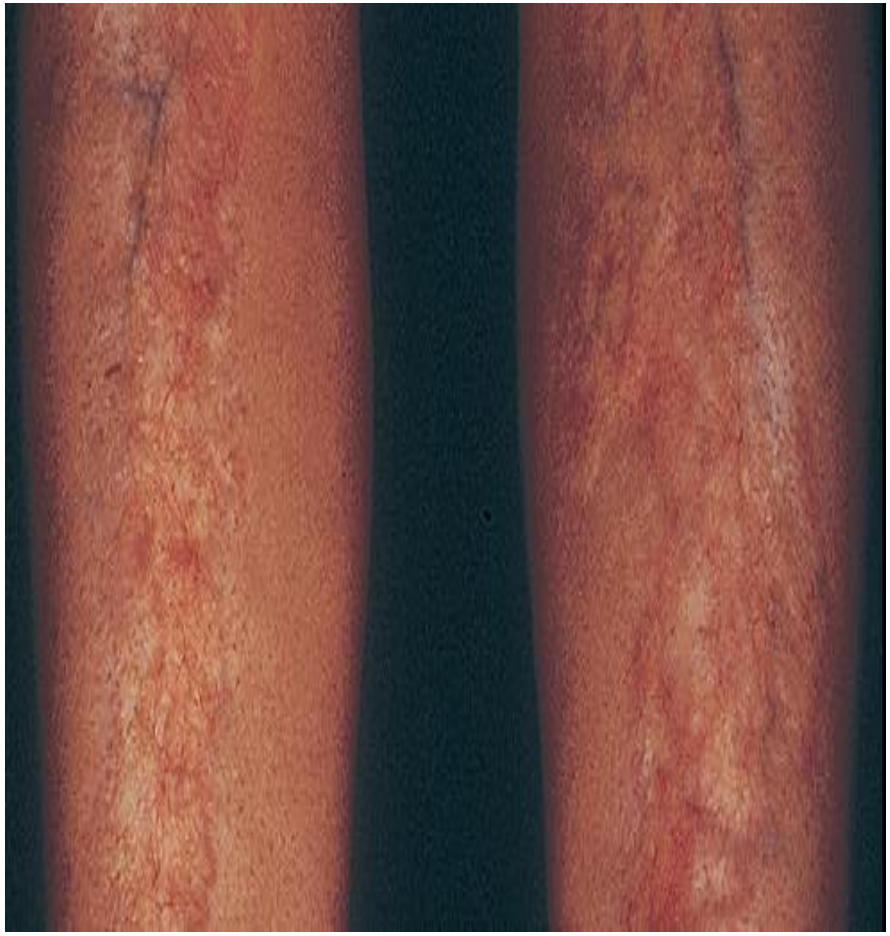
When walking the pain becomes more severe like an electrical shock pain in the feet.

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

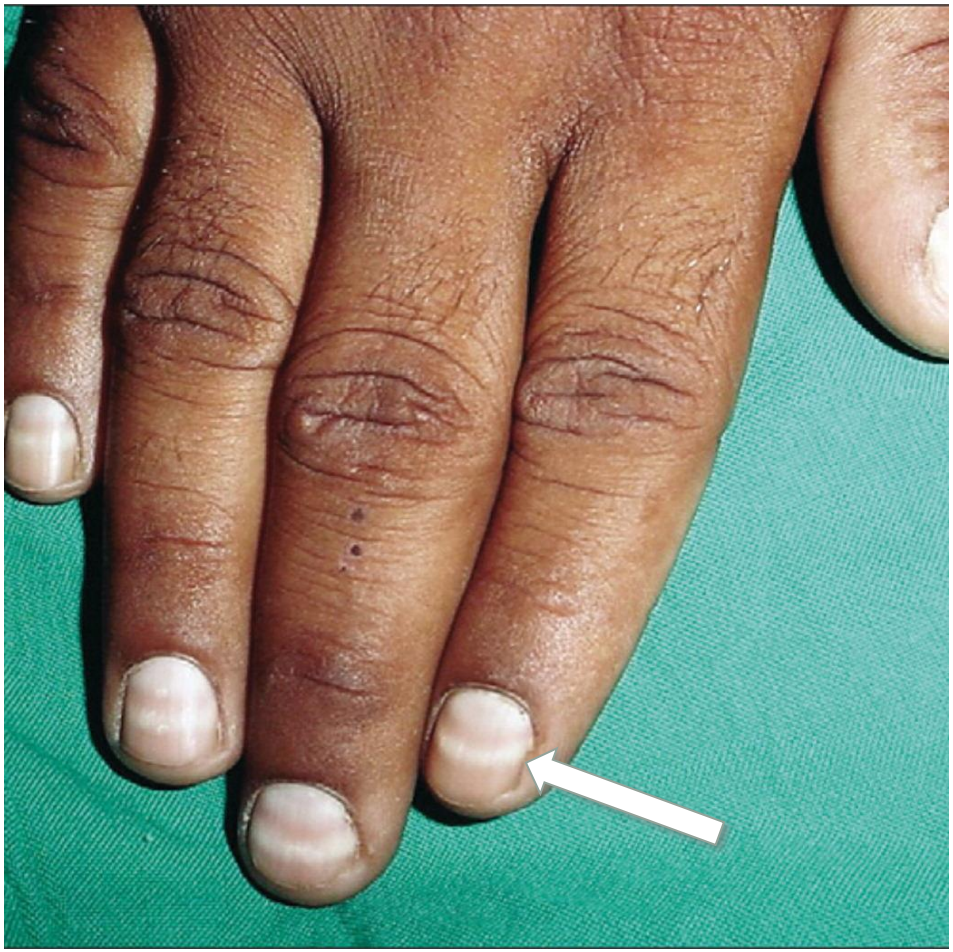
- **Limb neuralgia (sharp, stabbing, zinging, lightning, bee-sting pain)**
  Gabapentin
  Lyrica (only diabetic/Zoster)
  Duloxetine (only diabetic)
  Lamotrigine
  Topomax
  Lidocaine/Capsaicin

- **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.

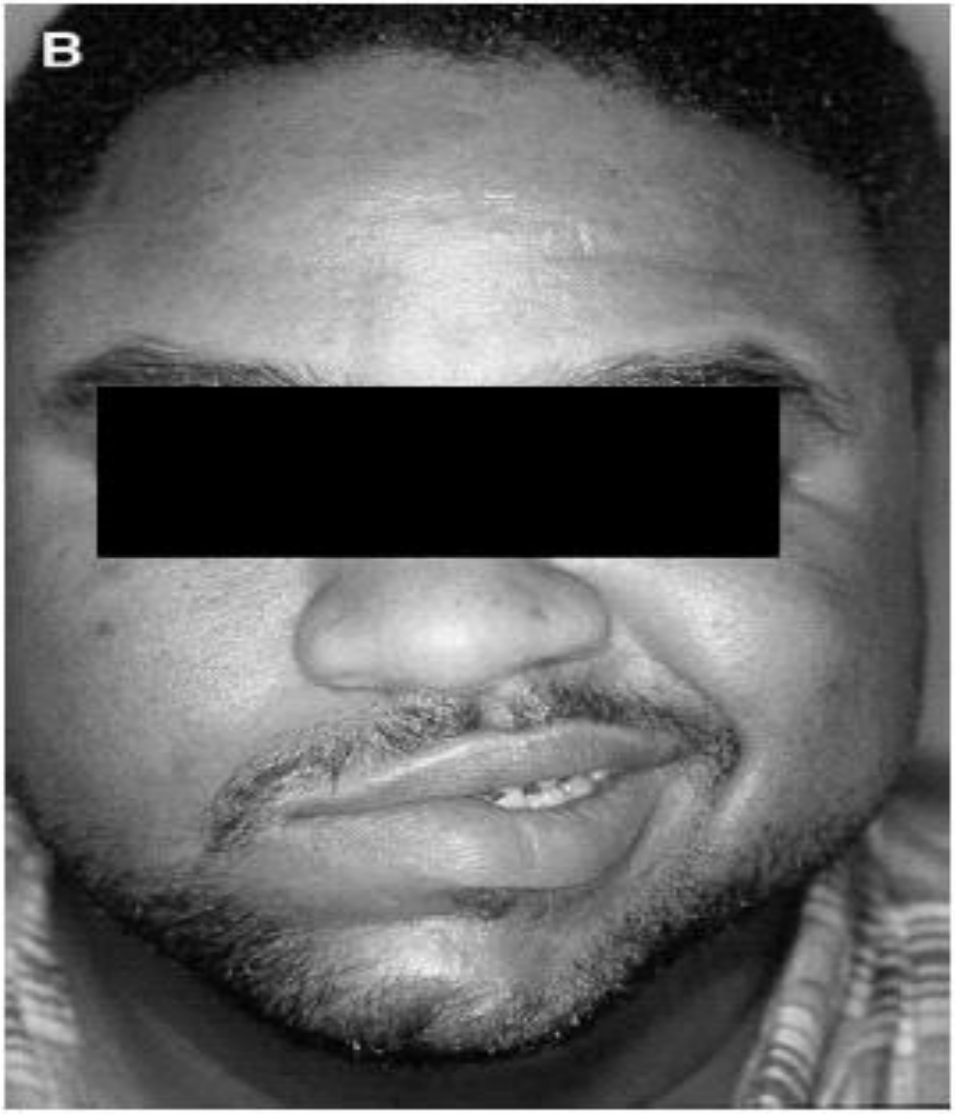
Examination shows:

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:

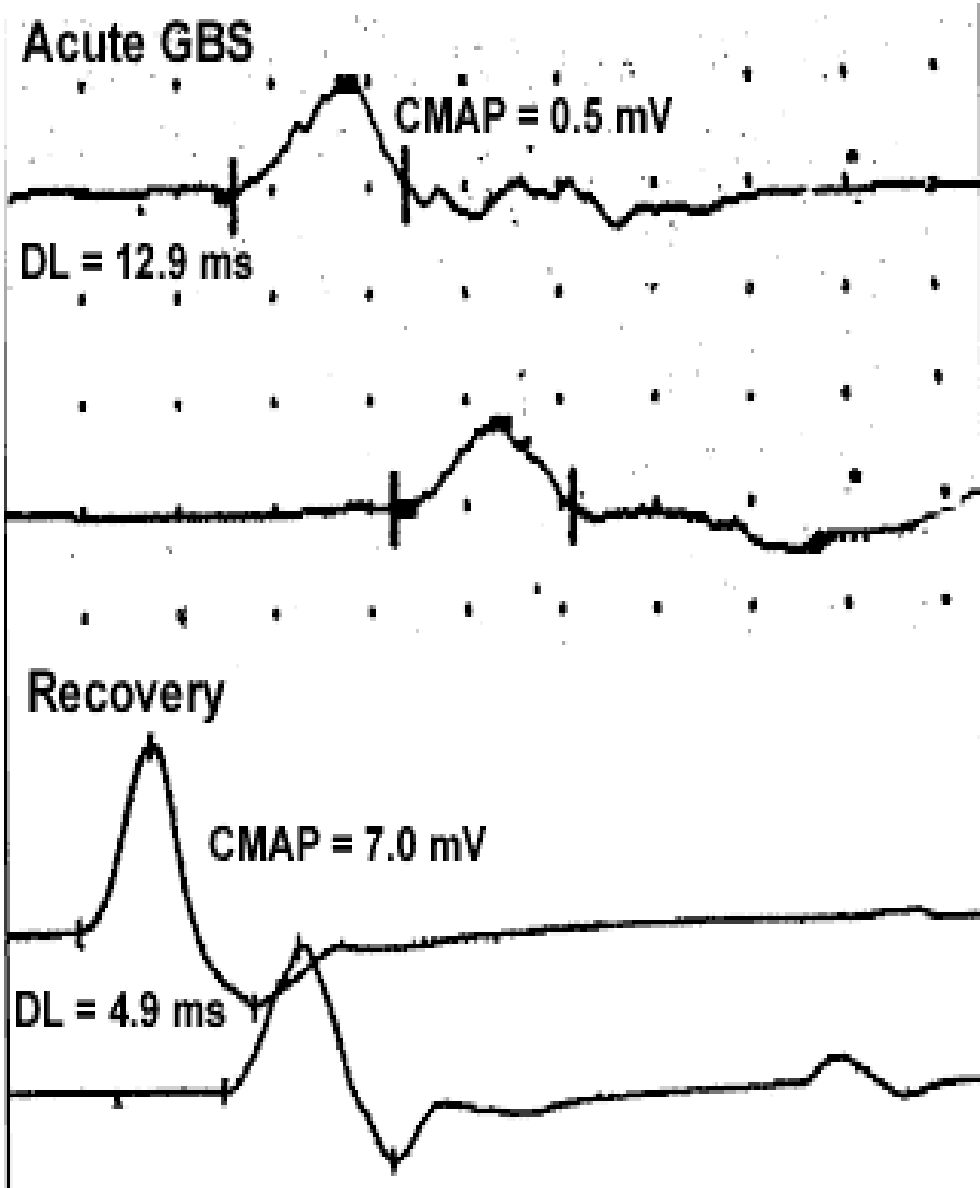
Moderate weakness of proximal and distal muscle groups (shoulders, arms, and legs in symmetric fashion).

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

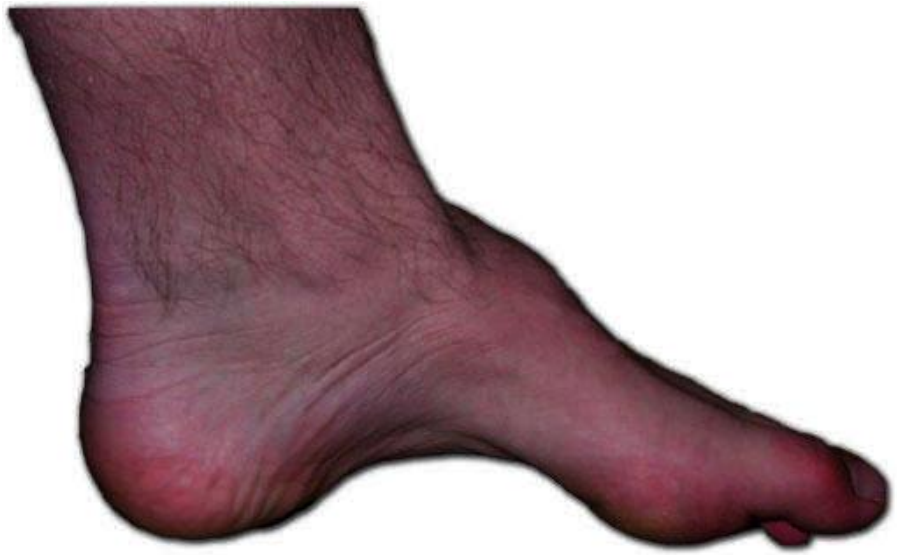
Prominent tibial bones; atrophy of the intrinsic hand muscles and pes cavus.

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**

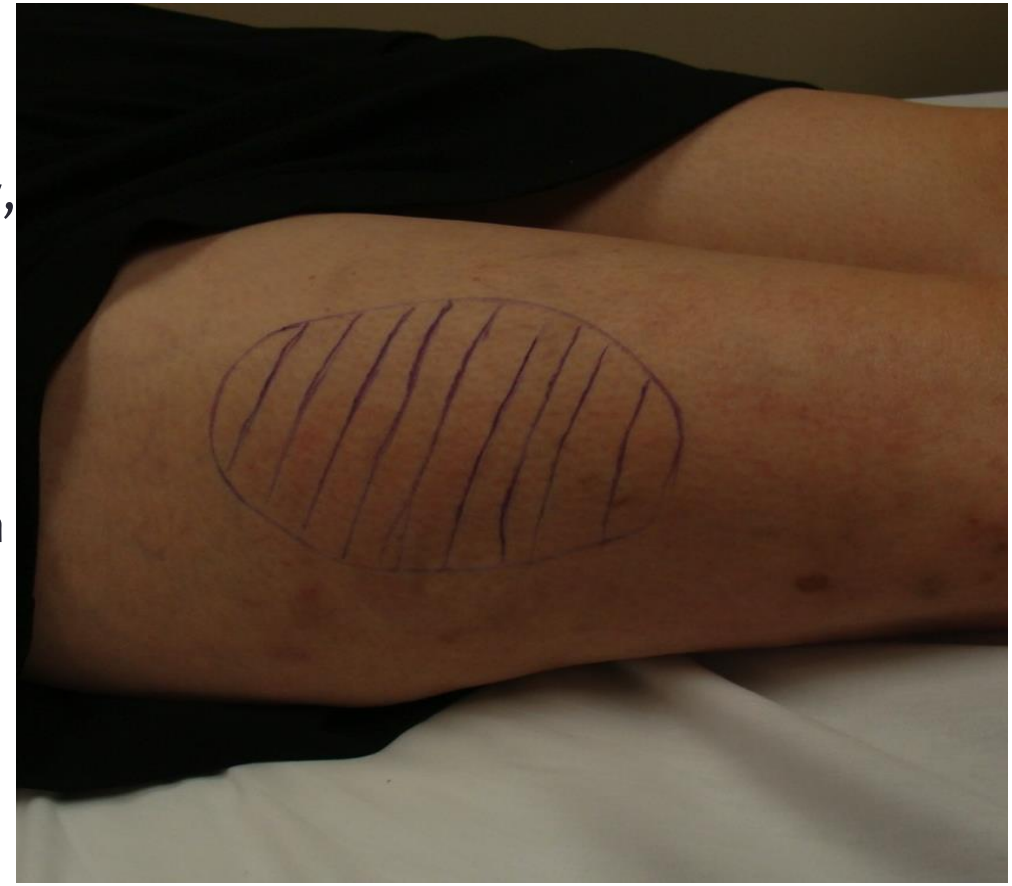
A 51-year-old man presents with 3 weeks of continuous burning, stinging, and intense discomfort in the side of the leg as shown.

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*

Acute and Chronic Neuropathies

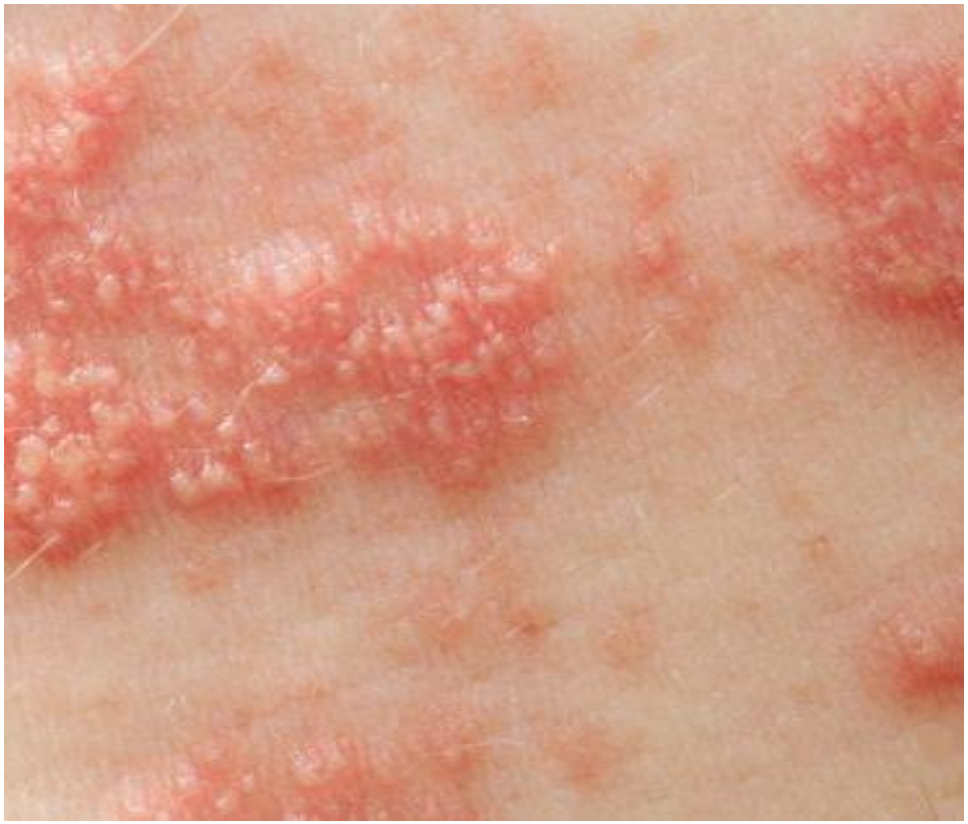
- **Case 8**

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?

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