Neuropathic Pain: Identifying a Cause and Tailoring Treatment

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Objectives

- Define & Characterize Neuropathic Pain
- Describe the Ways a Physician Investigates Pain Complaints
- Demonstrate an Example of a Comprehensive Plan to Treat a Neuropathic Pain Condition

Definitions

- Pain
  - An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Neuropathic Pain
  - Pain caused by a lesion or disease of the somatosensory nervous system.

Neuropathic Symptoms

- Burning
- Pins & Needles
- Numbness
- Electrical Shock
- Numbness
- Allodynia
- Dysesthesia
- Muscle Weakness

History

- Inciting Events
- Time Course of Pain
- Past Surgery
- Personal History of Chronic Pain, Substance Abuse, or Anxiety
- Environmental Exposures

Physical Exam

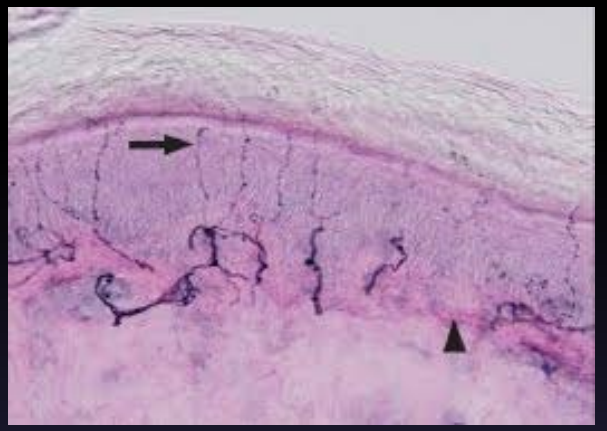
- Examination of Affected Area
  - Skin/Hair/Nails/Swelling
  - Sensation/Allodynia/Dysesthesias
  - Motor Strength/Tone
  - Reflexes
  - Peripheral Pulses
  - Comparison to Contralateral Extremity

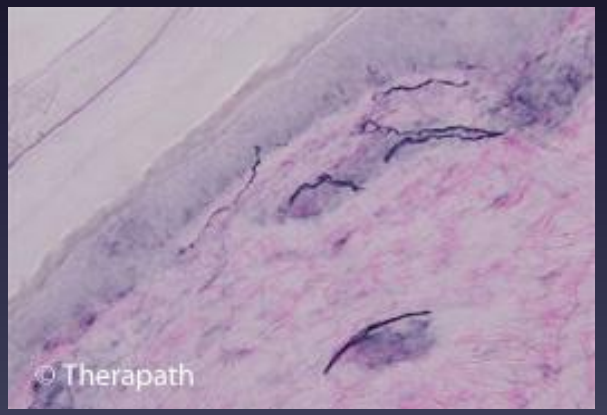
Diagnostic Testing

- Bloodwork
  - CBC
  - Metobolic Panel
  - Diabetes/Thyroid Tests
  - Autoimmune Panel
  - Heavy Metal Screen
  - Infectious Screen
  - Vitamin Levels

Diagnostic Imaging/Testing

- Basic XR
- CT Scan
- MRI
- EMG
- Sudomotor Activity Test
- Skin Biopsy





Formulating a Plan of Care

- Discuss Goals of Treatment with Physician
- Discuss Options in Treatment
  - Medical Management
  - Physical Therapy
  - Psychotherapy
  - Complementary Therapy
  - Injection Therapy
  - Minimally Invasive Procedures
- Develop a Plan To Follow Together

Common Diagnoses

- Peripheral Neuropathy
- Lumbar Radiculopathy
- Post-herpetic Neuralgia
- HIV Neuropathy
- Small Fiber Neuropathy
- Autonomic Neuropathy
- Complex Regional Pain Syndrome

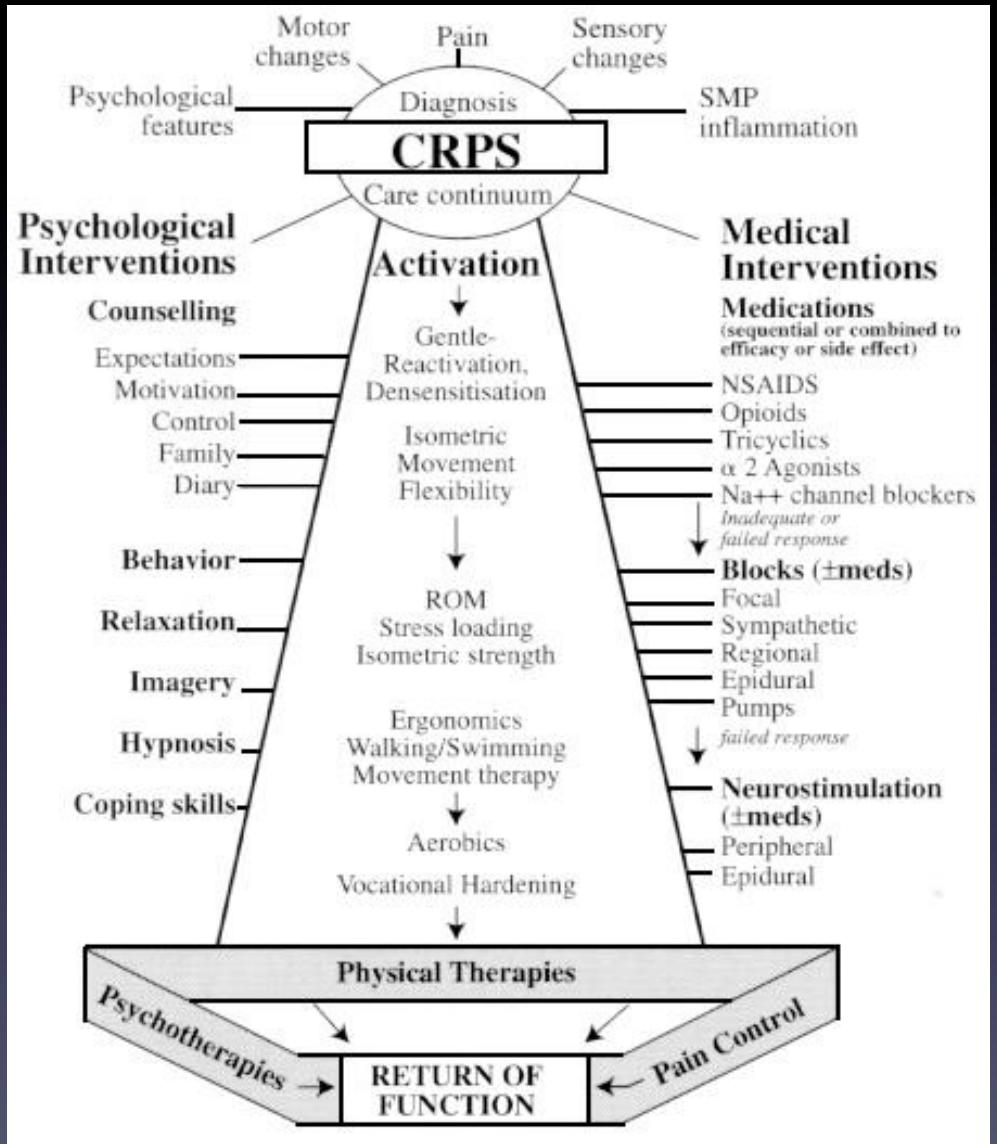
Complex Regional Pain Syndrome

- Diagnosis Made Using Budapest Criteria

To make the *clinical* diagnosis, the following criteria must be met:

1. Continuing pain, which is disproportionate to any inciting event
2. Must report at least one symptom in *three of the four* following categories:
   Sensory: Reports of hyperesthesia and/or allodynia
   Vasomotor: Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry
   Sudomotor/Edema: Reports of edema and/or sweating changes and/or sweating asymmetry
   Motor/Trophic: Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)
3. Must display at least one sign **at time of evaluation** in *two or more* of the following categories:
   Sensory: Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch and/or temperature sensation and/or deep somatic pressure and/or joint movement)
   Vasomotor: Evidence of temperature asymmetry (>1°C) and/or skin color changes and/or asymmetry
   Sudomotor/Edema: Evidence of edema and/or sweating changes and/or sweating asymmetry
   Motor/Trophic: Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nail, skin)
4. There is no other diagnosis that better explains the signs and symptoms

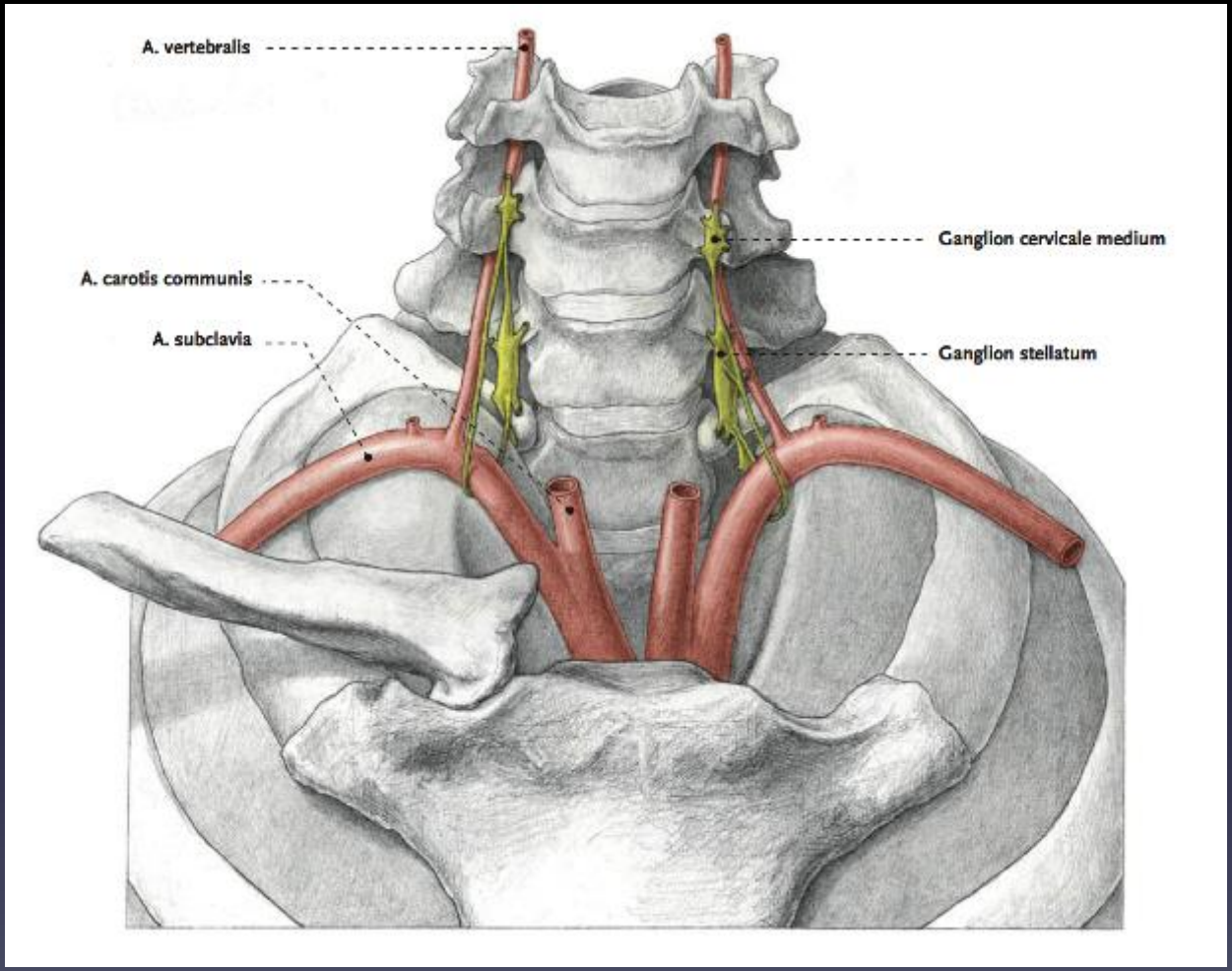
Treatment Algorithm for CRPS



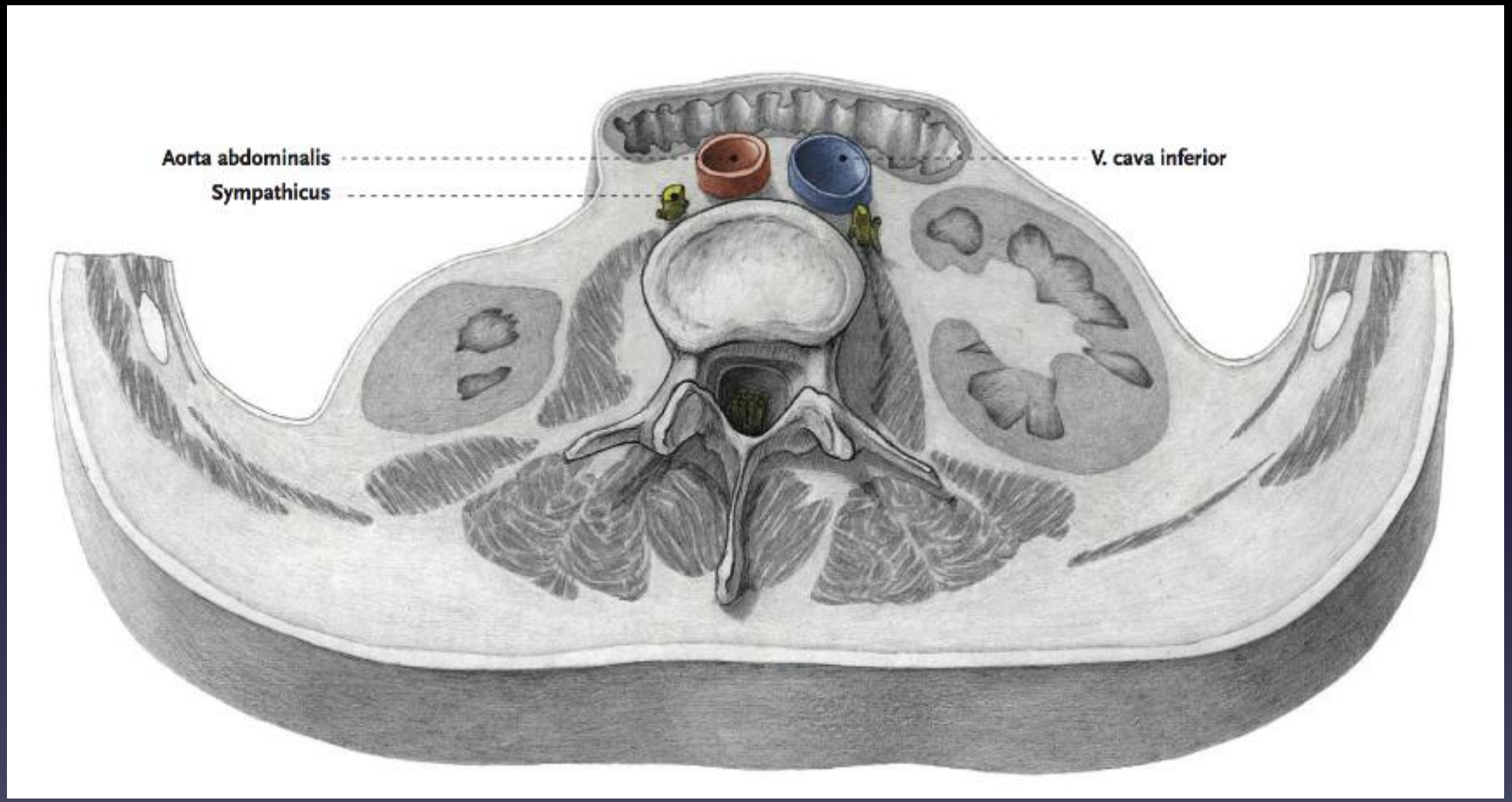
Medications

- Anticonvulsant
  - Gabapentin, Pregabalin, Topiramate
- Serotonin-Norepinephrine Reuptake Inibitor
  - Amitriptyline, Nortriptyline, Duloxetine, Milnacipran
- Topical Agents
  - Ketamine, Lidocaine, Diclofenac, Clonidine
- Non-steroidal Anti-Inflammatory
  - Celecoxib, Naproxen, Ibuprofen
- Others
  - Narcotics, Alpha Blockers, Muscle Relaxants, Anti-oxidants, NMDA Receptor Antagonists

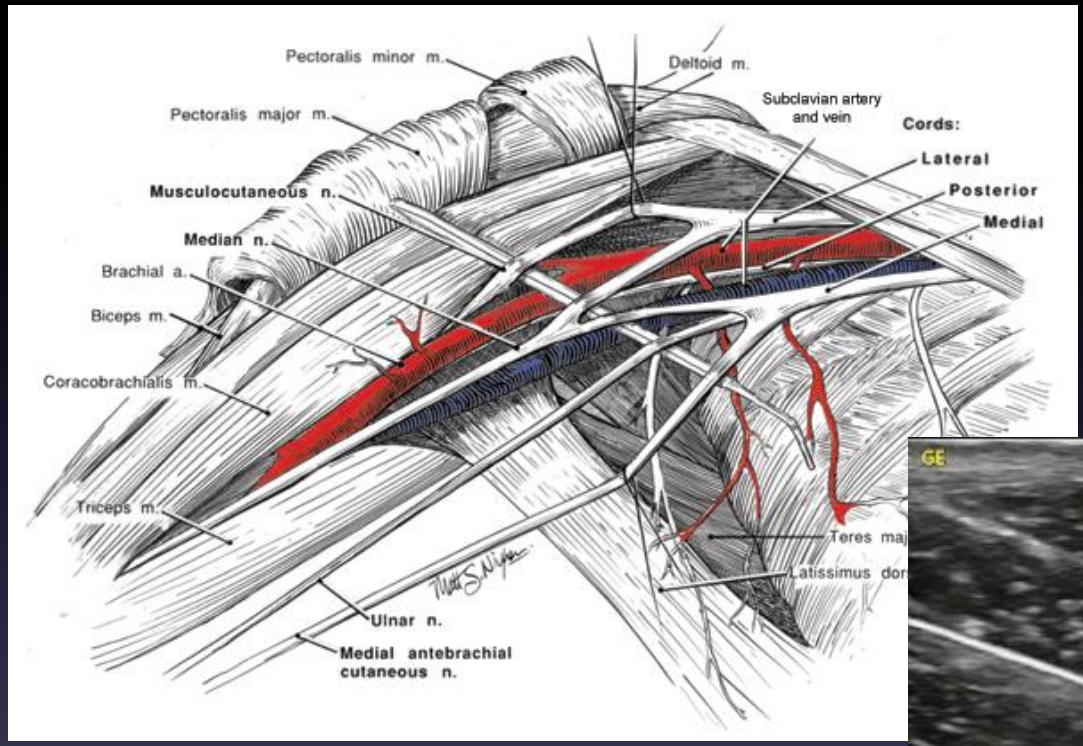
Stellate Ganglion Block

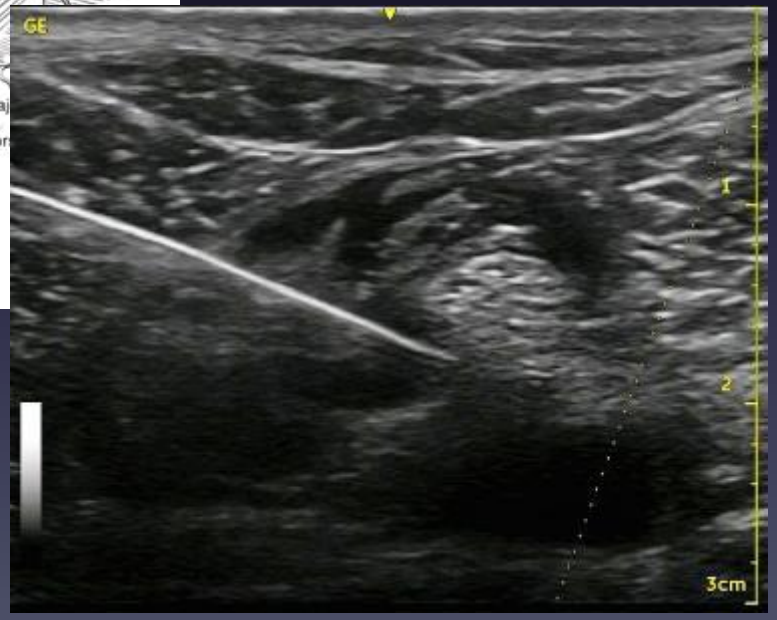


Lumbar Sympathetic Block



Somatic Nerve Blocks



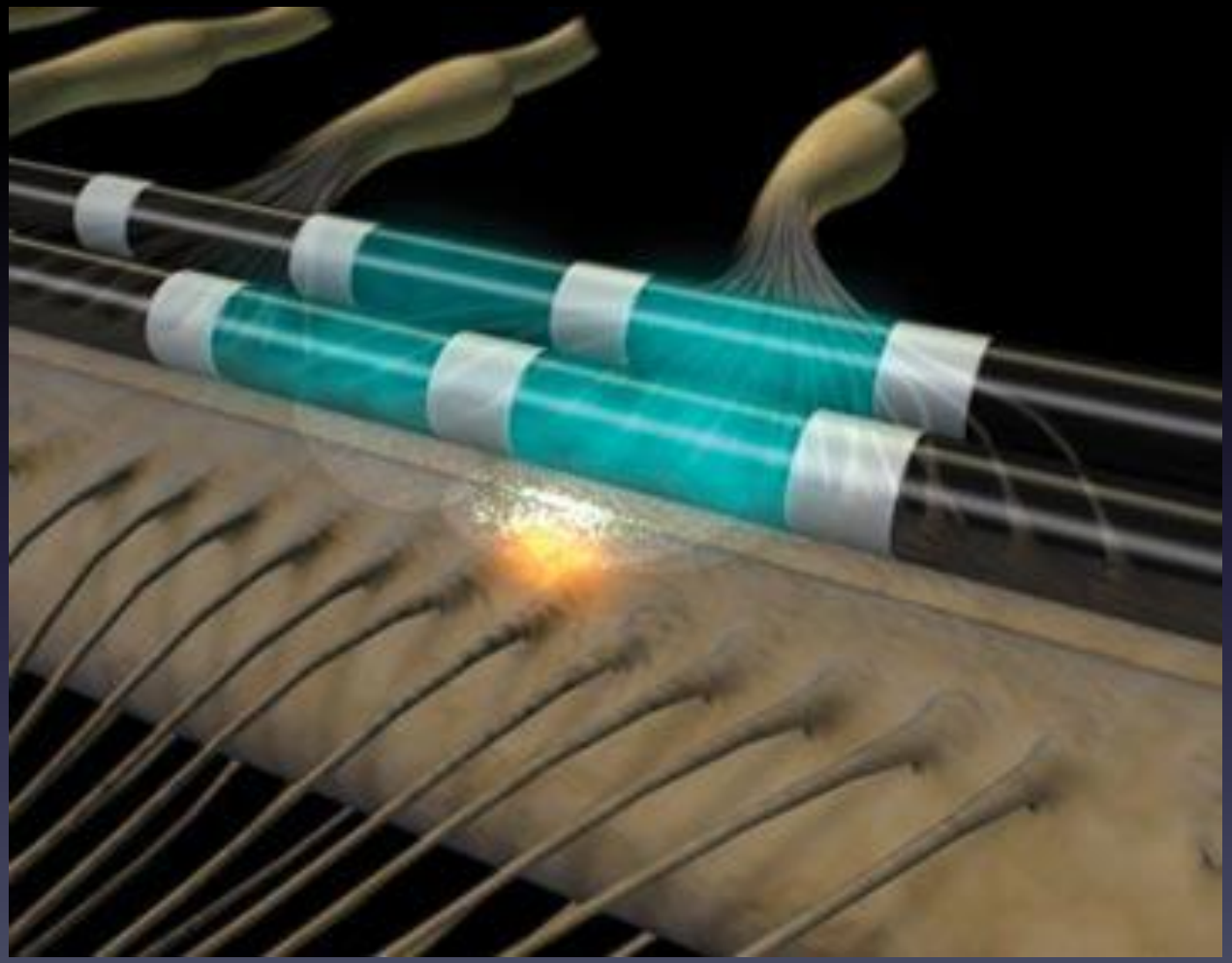


Other Procedures

- Prolonged Epidural Infusion
- IV Regional Blocks
- Ketamine Infusions

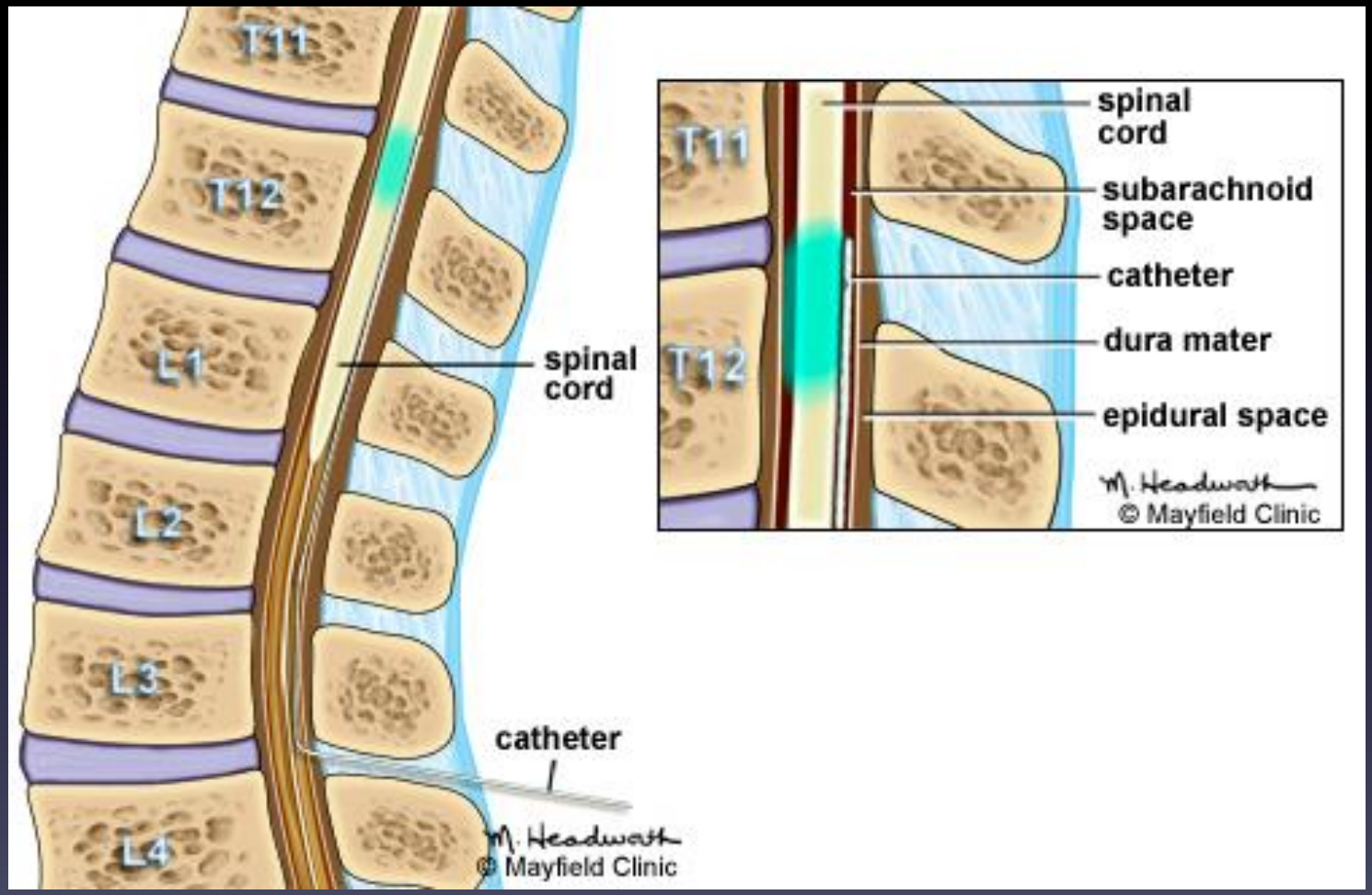
Spinal Cord Stimulation

Spinal Cord Stimulation



Intrathecal Drug Delivery

Intrathecal Drug Delivery



Thank You!

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