

# ABC's of the Spinal Exam

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July 27, 2019

# DISCLOSURES

No financial disclosures

# Main Components of Spinal Evaluation

- History
- General Examination
  - Inspection – cutaneous and nail changes, deformity, pain behaviors, etc.
  - Palpation – masses, misalignments, focal pain, etc
- Movements and measurements
- Special tests
- Neurology

# History

- The most important part of the exam is not the exam at all. It's the **history**.
  - Where it hurts? What makes it hurt? What makes it better? How long have the symptoms been present? Are they getting better or worse? Etc.
  - A thorough history can often accurately predict your final diagnosis
  - Certain conditions have common histories.
    - 70 y/o female develops sudden back pain with spasms while moving a chair in her living room. Could be a strain but should r/o Osteoporotic compression fx
    - 40 y/o male lifts an outboard engine off the back of the boat and twists to place on the dock. Develops back pain and the following day awakens to pain in the buttock and lower ext. Lumbar disc herniation.

# Four Main Component to the Spinal Exam

- Motor
- Sensory
- Reflex
- Mechanical

# Focus on the common

- Discogenic / Degenerative causes of cervical symptoms
  - Herniated discs
  - Degenerative bulges and spurs
    - Stenosis
    - Without stenosis
  - Facet disease
  - Instability and Malalignment

# Don't Forget the Unusual

- Tumor
- ALS
- MS
- Vascular dissections
- Vascular insufficiencies
- Infections
- Rheumatologic

# Exam

- Pupillary exam
- Palpation of neck anterior and posterior for masses, spasm, focal pain, or misalignment
- Range of motion
  - Rotation
  - Flexion
  - Extension
  - Spurling's
  - Lhermitte's
- Strength
- Sensation
- Reflexes
- Gait



# Pupils?

- Horner's syndrome
  - Carotid dissection
  - Cervicothoracic mass or infarct
  - Rarely may occur with C8 or T1 radiculopathy

# Cervical Range of Motion

- Extension – 50 degrees
- Flexion -- 80 degrees
- Lateral flexion – 45 degrees
- Rotation -- 80 degrees

# Myelopathy

- Less common compared to radiculopathy
- Not uncommon to be painless
- When found to be of compressive nature, the balance and gait instability make falling more likely which makes further cord injury more likely.
- For significant findings of myelopathy, immobilization may be beneficial until decompression possible.
- Chronic spondylotic myelopathy often has a stepwise progression of decline. The general rule is that you may gain back function lost within the year after successful decompression.

# Radiculopathy

- Most common reason for referral
- Generally associated with pain but rarely may not
- Pain and weakness are the driving factors toward surgery, not numbness or reflex loss.
- The most critical radiculopathy from a likelihood of loss of function is the C5
  - Severe loss of deltoid strength may be permanent

# Red Flags

- Rapid onset weakness
  - Shoulder abduction and ankle dorsiflexion (foot drop) the most worrisome
- Perineal or “saddle” numbness (early Cauda Equina)
- Bowel/bladder dysfunction – may be progressive but generally not episodic
  - Hyperactive or spastic bladder (urgency) - myelopathy
  - Urinary Retention – Cauda Equina

# Red Flags (Cont.)

- Bowel incontinence
- Must differentiate between 1. inability to ambulate to toilet 2. true incontinence with loss of urge sensation and control

# Motor

- Strength
- Coordination
- Spasticity
- Muscle bulk / tone including atrophy / fasciculations

# Sensory

- Pinprick
- Light touch
- Proprioception / Vibration
- Temperature



# Reflexes

- Muscle stretch reflex
- Babinski sign
- Hoffmann sign
- Clonus

# Gait

- Casual gait
- Tandem gait / Romberg test

# Cervical Spine

- Range of motion
- Spurling's test
- Shoulder evaluation
  - Passive ROM
  - Empty can test
  - Palpation

# Lumbar Spine

- Lumbar ROM
- Degree and location of palpable tenderness
- Lasegue sign or Straight leg raise
  - Positive reproduction of leg pain at < 60 degrees elevation is present >80% in pts with nerve root compression of L5 or S1 nerve roots
  - Femoral Stretch test or Reverse Straight Leg Raise – tests for compression of L2, L3, L4 nerve roots

# Hip and SI Joint

- FABER (flexion, abduction, external rotation) or Patrick test



- FADIR (flexion, adduction, internal rotation)
- Thigh thrust



- Compression test



# Clinical Pearls

- Babinski sign or a positive Hoffmann sign: if there is no known etiology in a given patient, further investigation is required to rule out cord compression or brain involvement
- Cervical radiculopathy does not cause pain with shoulder abduction
- Painless weakness in the LE is almost never nerve root compression
  - Consider diabetic neuropathy, myelopathy, motor disease