Making the Call: Spine Problem or ‘Something Else’?

Robert K. Eastlack, MD
Fellowship and Spine Research Director
Scripps Clinic
Division of Orthopaedic Surgery

Disclosures

NONE
Managing Your Spine Patients
Robert K. Eastlack, MD

**Objectives**
- Develop efficient patient history approach
- Review physical examination techniques
- Review pathoanatomy for the spine

**The History**
- Most important
- Critical factors
  - Location of pain
  - Character of pain
  - Exacerbating activities
- Red flags
  - Weakness
  - Constitutional symptoms
  - Bowel/bladder dysfunction
Case 1

46yo female with 6 mo

- Left lateral hip pain
- LBP
- Left lateral leg pain
- Paresthesias lateral leg

What else do you want to know?

- Weakness?
- Activity exacerbations?
- Night pain?
- Prior treatments?
Case 1

Examination

Standing (posture)
Gait
Tenderness
Joint ROM
Nerve tension
Neurologic
Evaluating the Lumbar Spine

- History
  - Onset
  - Duration
  - Location
  - Associated symptoms
  - Character of pain

- Don’t forget the red flags!!!
Examining the Lumbar Spine

- Inspection
  - Standing
  - Sitting
  - Walking
- Palpation
  - Midline
  - Flank
  - Paraspinal
  - Gluteal

Examining the Lumbar Spine

- Motion assessment
- Hip and knee eval
  - Palpation
  - Motion
    - Straight leg raise (nerve)
    - Internal rotation (hip OA)
- Neuro
  - Stair step with each leg
  - Toe and heel walk
  - Great toe dorsiflexion

LOOK FOR ASYMMETRY!!!
Peripheral Neurological Evaluation

Motor
- Frankel strength grading
  - 5 = full
  - 4 = resistance greater than gravity
  - 3 = anti-gravity power
  - 2 = less than gravity
  - 1 = flicker
  - 0 = no motor recruitment

Sensory
- Light touch
- Pin prick
- Dermatomal assessment

Deep Tendon Reflexes
- Biceps (C5)
- Brachioradialis (C6)
- Triceps (C7)
- Patellar (L4)
- Achilles (S1)
Case 2

- 57yo RHD female
- 2 years progressive right shoulder and upper arm pain
- 6 mo progressive neck pain

What else do you want to know?

- 'Trace the pain'
- Numbness/paresthesias
- Provocations
  - Neck or shoulder positioning
  - Night sx
- Weakness
- Dexterity (handwriting/buttoning/etc.)
- Balance
- Bowel/bladder fxn (changes)
Cervical Examination

- Inspection
  - Alignment
  - ROM (limited in certain planes?)

- Palpation
  - Masses
  - Tenderness

- Special tests
  - Spurling’s maneuver
  - L’hermitte’s sign

Cervical Examination

- Shoulder eval
  - Active ROM
  - Neer/Hawkins maneuvers (impingement)
  - Weakness
    - Abduction/ext rotation

- Provocative maneuvers
  - Tinel's cubital/carpal tunnel
  - Adson's Test (TOS)
  - Roos' Test (TOS)
Cervical Examination

Neurologic Assessment

- Motor (Frankel grading)
  - Shoulder abduction (deltoid-C4)
  - Elbow flexion (biceps-C5)
  - Wrist extension (brachiorad-C6)
  - Elbow extension (triceps-C7)
  - Finger flexion (FDS/FDP-C8)
  - Finger abduction (interossei-T1)
- Upper and lower extremities

Cervical Examination

Neurologic Assessment

- Sensory
  - Light touch
  - Pin prick
  - Dermatomal assessment
Cervical Examination

Neurologic Assessment

- DTRs (reflexes)
  - Upper/lower extremities
- Pathologic reflexes
  - Hoffmann’s sign
  - Inverted radial reflex
  - Babinski maneuver
  - Clonus
- Proprioception
  - Gait (tandem gait—‘walk the line’)
  - Romberg test

THINK---DIFFERENTIAL!!!

- Muscular
- Skeletal/joint
- Neurologic
- Vascular
Case 2

- 57yo RHD female
- Right shoulder, neck, arm pain
- Numbness/paresthesias into digits
- Sense of weakness in arm elevation

Exam
- Limited motion/ttp cspine
- Limited/painful motion right shoulder
- +Neer/Hawkins
- 4/5 right triceps/B interossei
- 3-4+ DTRs
- + Hoffman / IRR
- 2-3 beats clonus
Case 2

- Shoulder pain on provocation--impingement?
- Radicular symptoms--cervical?
Case 2

Two separate issues?

Diagnostic injections!!!

Case 3

69yo male with right thigh pain

Anterior?
Posterior?

Changes with activity?
Case 3

69yo male with right anterior thigh pain

Minimal LBP

Increased with walking/standing

No numbness/tingling

Exam:
Normal gait
Lumbar ROM normal
Hip ROM
  Pain on internal rotation!!!
Positive Stinchfield
Knee supple/nontender

Neuro exam
weak hip flexion
Case 3

-- Pain with provocation at hip ROM

-- Weakness in hip flexion

Joint or neurologic??

Reflexes---symmetric

Sensory changes
  Pin prick
  Light touch

Reverse Leg Raise
Case 3

Still unclear??

Radiographs!!

Lumbar spine
Pelvis/right hip

Possible lumbar spine etiology

MRI Lspine
Referral to Spine
Imaging Choices

- **STANDING** radiographs
- MRI
- Rarely CT scan (only for acute trauma)
- CT myelogram (if unable to get MRI)

When To Punt…

- Acute weakness
- Bowel/bladder dysfxn
- Unmitigated severe pain

- No improvement in 4-6 weeks
  - PT, meds, etc.

Immediate referral
SUMMARY

PROBLEM-SOLVING MODE

THINK DIFFERENTIAL!!!

MUSCULOSKELETAL, NEURO, VASCULAR EXAMS

APPROPRIATE IMAGING AND REFERRAL