Managing Spine Pain in Seniors

Francisco Ward, D.O., FAAPMR
Chief Div. of PM&R, St. Agnes Hospital
Dir. Seton Pain & Rehabilitation Centers
Objective

- Broaden clinical differential diagnosis when evaluating low back pain complaints and quickly r/o possibilities.
- Improve understanding of mechanical postural causes of low back pain.
Epidemiology

- Lifetime prevalence of 60 – 90%
- $20-50 Billion annual societal cost
- Chronic fluctuating natural history
- Consistent approach needed
- Accelerates functional decline in seniors
Common Causes of LBP by Age groups

- **Adolescent athletes**
  - Lumbar *spondylolysis* until proven otherwise

- **Professional years**
  - Lumbar intervertebral *disc pathology* is the most likely etiology unless proven otherwise

- **Master’s to Senior athlete**
  - Degenerative sources of spinal pain lead the way
  - Don’t forget to medical causes of LBP
Seniors are special

- Co-morbid medical conditions
- Differential diagnosis
- Less flexible, loss of normal multi-curved column “flat back”
  - Less shock-absorbing capacity
  - Altered muscle impairs form closure
  - Deg bone orientation affects force closure
Care providers

- MD/DO (physician & surgeon)
  - Evaluation comprehensive
  - Integrative oversight
  - Can prescribe Rx, Therapy, Surgery, OMT

- Therapy / Chiropractic / Acupuncture
  - Limited consideration of possibilities / Tx

- PA/NP – physician extenders (limited evaluation / oversight)
Work up for low back pain

If the history elicits reports of fever, night sweats, and chills that might suggest other causes for the low back pain, then, at a minimum, obtain a CBC count, erythrocyte sedimentation rate, and urinalysis to rule out cancer or infection. Serum and urine electrophoresis studies may help to rule out multiple myeloma at an early stage when radiographic imaging studies appear negative or inconclusive.
Why see a doctor?

- Benign and malignant lary and neural osseous tumors
- Degenerative synovial cysts
- Extraspinal causes (eg, ovarian cyst, pancreatitis, ulcer), aortic aneurism
- Fractures of the lumbar vertebral body
- Infection (eg, epidural abscesses, peritonitis)
- Inflammatory conditions
- Metastatic neoplasms, myeloma
- Spondylolisthesis
- Aseptic necrosis of the femoral head
- Connective tissue disease
- Myopathy
Low Back Pain Evaluation: History

- Consistent approach: MOI & (OLDCAART)
- ROS
- PMH
- Functional History
- Medications
- Prompts
Continuation: LBP History

- History of previous malignancy
- (ROS): fever, chills, dysuria, hematuria
- Skin lesions, GI/GU changes, Depression, drug use
- Conjunctivitis, urethritis, IBD etc.
- What makes it better / worse
- Work history / vocational activities
ROS Screen

Have you recently lost or gained significant weight?
Have you had fever, chills or night sweats in the past month?
Do you have any rashes or eczema that lasted more than one week?
Have you had difficulties or changes during urinating or defecating?
Have you had morning stiffness? How long does it last?
Have you had erectile dysfunction? Do you have relief with bed rest?
Does any medication upset your stomach? Are you immune suppressed?
Have you had an infection in the last month? Do you have difficulty with your bladder?
Have you had any serious injuries to your joints? Have you had any type of Cancer?
Have you had any numbness or tingling? Have you had any weakness?
Do you have an irritable bowel? Have you had recurrent conjunctivitis?
Have you had back pain in the past?
Does coughing, sneezing, valsala make worse?
LBP: Physical Examination

- Detailed, focused exam (inspection, palpation, ROM, segmental restrictions, neuromuscular, pulse, special test)
- Regional Exam (other joints, systems)
- ROM, Girth, MMT, Sensory, MSR
- Groin pain (evaluate for hernias, inguinal adenopathy, iliopsoas bursitis, hip disease)
Role of Complex Force Coupling

- Posture
- Joint Systems
- Neurologic control of proprioception
- Disk structure facilitating movements
LBP: Special Test

- Pain Generators?
- Weakness?
- Muscle Imbalance?
- Joint Imbalance?
- Nerve Tension?
- Hip Rotation Test?
- Complex Motion?

Waddell Signs:
Conservative

- Posture
- Hydration, nutrition
- Exercise / stretching / pacing / avoiding
- Modalities (physical medicine).
- Bone health – vitamin D, Calcium
- Bracing, bedding, support
Applying CPG to Our Clinical Practice

Prescribing PT

a. Do different approaches give different outcomes?

b. How many sessions do patients really need?

c. When does the argument “I need someone to help make sure I do my exercises” justify ordering PT (press ganey scores)
Medications

- Acetaminophen
- NSAIDS
- Tramadol
- SNRI (cymbalta, savella)
- AED (gabapentin, lyrica)
- Patches (lidocaine, butrans, fentanyl)
- Creams – OTC, Medicated
- Oral opioids (Tyl#3, hydro, oxy, morphine, etc)*
LBP: Diagnostic Testing

- Consider sensitivity & specificity
- Plain x-rays
- Lateral flexion & extension views
- Bone scan
- MRI, Myogram
- CT
- Discography
Imaging Studies

- Association between image and mechanical low back pain is weak.
- Ordering of imaging studies for patients with clinical findings suggestive of systemic disease (e.g., fever, weight loss without explanation, patients older than 50 y, or trauma.
- CT, MRI (soft tissue, infection, cancer), Diskography, Bone scan
LBP: Laboratory Assessment

If one suspects a particular condition based on history and physical
- ESR, C reactive protein
- CBC
- Alk Phos or PSA
- Serum protein electrophoresis
- Urine protein electrophoresis
LBP: Electromyography / NCS

- Consider when you suspect:
  - radiculopathy
  - peripheral neuropathy
  - spinal stenosis
  - entrapment neuropathy

- Consider when you have:
  - significant sensory, motor symptoms or asymmetric muscle stretch reflexes
LBP: Specific Diagnosis & Tx

- Musculo-tendinous sprain/strain
- Radiculopathy
- Spinal Stenosis
- Spinal Infection: Osteomyelitis / Discitis
- Spondylolysis & Spondylolisthesis
- Trochanteric Bursitis
- Spondyloarthropathy
- Force Coupling & Segmental Dysfunctions
Nonspecific LBP: General Treatments

- **Acute**
  - Usually self limited. Prevention of deconditioning and alleviating symptoms.
  - 2 days bed rest as effective as 7
  - Exercise, education, flexibility
  - NSAID’s, Corticosteroids
  - Manipulation
  - Modified Duty
  - Sports Medicine Model (preferred)
Core Weakness is Problematic

- Issues with muscular weakness, imbalance, and recruitment specific to the hip and/or core musculature = potential source of LBP

- Core Strengthening and Hip Extensors
  - Gluteus Maximus

- Core Strengthening and Hip ABDuctors
  - Synergist to stabilize pelvis and transfer forces from LE to spine
Lumbar Facet Arthropathy

- Facet-mediated pain: pain with repeated extension-rotation
- Avoidance: leads to stiffness and impaired motion

Management
- Keep moving, NO BED REST
- Neutral-based trunk strengthening
- Resisted strengthening and aerobic conditioning
- Progression resisted rotation: supine, seated, standing
a. Defined as diminished space secondary to degenerative changes in spinal canal that can cause gluteal or lower limb pain

b. Natural history is favorable in 33-50% of patients with mild to moderate stenosis (Consensus statement)

c. PE findings are inconclusive for making dx (Insufficient evidence)
Lumbar Disc Herniation with Radiculopathy (2012)
Kreiner et al. Spine J, 2014 Jan 14 (1), 180-91 (most current publication)

Radiculopathy defined as pain, numbness or weakness along a dermatomal or myotomal distribution

Natural history – the majority of patients will improve independent (not without) of treatment. This in part is probably do to shrinkage of HNP (Work group consensus statement)

Imaging
i. Plain radiographs – no recommendations but probably not needed in uncomplicated cases (no red flags)
ii. MRI (or CT scan) – In patients with history and PE findings c/w HNP & radiculopathy, MRI (CT or CT myelo when MRI contra-indicated) is recommended to confirm
Discogenic Pain (Clues)

- Pain with prolong sitting or standing
- Pain with transition sit → stand
- Palpation: midline tenderness
- No neurological deficits
- +/- SLR or neural tension
- Pain: intermittent or constant
- Pain: central or referred distally
- Numbness or tingling in LE?
- Symptoms bilateral or unilateral
Spinal Stenosis

Hallmark: Neurogenic claudication
- Aching pain w/ w/o paresthesia precipitated by walking / erect posture.
- Typically bilateral
- Bent gait posture
- 50% absent Achilles reflex
- 30% LE weakness
- 20% diminished knee reflexes
- Elderly men at greatest risk
Chronic LBP: Treatment

- **Prevention**
  - defined as greater than six months

- **Get out of Medical Model**
  - Exercise, behavioral modification, education, specific functional tolerance

- **Medication**
  - tricyclic antidepressants, ? anti-convulsants, Long acting NSAID’s.

- **Modalities**: Ice
Interventional Procedures

- Trigger point / dry needling
- Epidural steroid injection
- Diagnostic facet blocks / SI joint
- Radiofrequency neurotomy / ablation
- Neuromodulation
- Vertebroplasty, Discography,
- Intrathecal analgesic
- Regenerative PRP or Stem Cell Injection*
Interventional Spine Procedures
i. Contrast fluoroscopy is recommended for epidurals (Level A)
ii. Interlaminar epidural for short term relief (2 wks to 6 mos) and conflicting evidence for long term (Level B)
iii. Multiple injections for long term relief (3 to 36 months) for radicular or neurogenic claudication sxs (average was 3.6 injections per patient) (Level C)

Medical/Interventional
i. can provide long term relief (2-10 years) in a large percentage of patients (Level C)
ii. recommended for patients with mild (Consensus) and with moderate (Level C) stenosis
Interventional Spine Procedures

i. Contrast fluoroscopy recommended for epidural injections (Level A)

ii. Transforaminal
   a. Recommended for short term (2-4 wks) relief (Level A)
   b. Improve functional outcome in majority (Level B)

iii. Interlaminar epidural may be considered (Level C)

iv. Insufficient evidence for 12 month efficacy

v. No optimal frequency or quantity of injections (Lack of info)

vi. Insufficient evidence for one approach (transforaminal, interlaminar, caudal)

vii. Higher degree of nerve root compression negatively affects
Surgery

i. Indicated for low grade deg spondylolisthesis with stenosis in patients recalcitrant to medical/interventional tx (Level B)

ii. Decompression with fusion is better than decompression alone for symptomatic stenosis with degenerative spondylolisthesis (Level B)
Spinal Surgeries: Risk?

- Increased 10-15% in those > 65
- Infection 2-2.8% > in diabetics, obesity, incontinence
- Around one in every 20-100 people who has lumbar decompression surgery will develop new numbness or weakness in one or both legs as a result of the operation.
- Recurrent or continuing symptoms
- Anesthesia, DVT, Sores, lung, hardware etc
Questions??