Low Back Pain for Primary Care Providers

Office based evaluation and treatment

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Goals:

• To provide an effective, easy to use, evidence based approach to patients with low back pain

• To provide a safe, easy, in office technique for administering a lumbar epidural steroid injection
ANATOMY

Vertebral Body
ANATOMY

Spinal Canal
ANATOMY

Posterior Elements
ANATOMY
Low Back Pain

with radiculopathy

without radiculopathy
Low Back Pain
with radicular symptoms
Arthritis
Spinal Stenosis
Nerve root impingement from disc
Lumbar disc herniations are often asymptomatic!

Classic Radicular Signs
Low Back Pain
without radicular symptoms
Muscular Low Back Pain

Muscles of Back
Superficial Layers

- Superior nuchal line of Spinous process (C2)
- Sternocleidomastoid
- Posterior (lateral) triangle of Trapezius muscle
- Spine of scapula
- Deltoid muscle
- Infraspinatus fascia
- Teres minor muscle
- Teres major
- Latissimus dorsi muscle
- Spineous process
- Thoracolumbar fascia
- External abdominal oblique
- Internal abdominal oblique
- Muscle in lumbar (Petit's)
- Iliac crest
- Fascia (gluteal aponeurosis) over gluteus
- Gluteus maximus muscle
- Erector spinae
- Serratus posterior inferior
- 12th rib
- Erector spinae
- External abdominal oblique
- Internal abdominal oblique
- Rhomboideus major muscle
- Rhomboideus minor muscle
- Supraspinatus muscle
- Serratus posterior superior
- Lateral scapulae muscle
- Rhomboideus muscle
Arthritis
Summary

• Low back pain
  arthritis, muscle strain

• Low back pain with radiculopathy
  disc, stenosis

• Radiculopathy *without* back pain
  – Pain down the entire leg to foot
  – Numbness/tingling down the leg to foot
TREATMENT
Treatment

- 85% of pts with acute low back pain get better with *time alone*
- Periods of bed rest longer than 2-3 days have been shown to *prolong* recovery
- NSIADs and muscle relaxants can be helpful, narcotics should be avoided *(if possible)*
- The only treatments universally accepted and proven to out-perform doing nothing are: *education* and *exercise*
Treatment

• **Education**
  - Proper lifting mechanics
  - Reassurance/support

• **Exercise**
  - Core strength
  - Flexibility
  - wt loss
Education, Exercise…

what else?
How About Surgery?
Surgery for a disc herniation
Removal of lamina

Removal of disc

Vertebrae

Spinal cord
Surgery for spinal stenosis
Posterior Lumbar Interbody Fusion
Surgery for Arthritis
Surgery vs Non-Operative Rx

• The Spine Patient Outcomes Research Trial (SPORT)
• Swedish Lumbar Study Group
• Maine Lumbar Spine Study

RESULTS:
Both groups improve with time
For LBP, results are equal (surgery vs non op)
For radicular symptoms, surgery can be superior
My personal advice to pts:

- 40-50% chance of success (6-12 months)
- 25-30% chance pain will be the same
- 25-30% chance pain will be worse
Why are the results so bad?

- Muscle damage
- Legitimate narcotic needs which evolve into addiction
- Legitimate absence from work which evolves into work avoidance
Vertebral compression fractures
Vertebral compression fractures

• Diagnosis:
  Hx: +/- fall
  PE: tender to pressure over spinous process
  x-rays, bone scan, MRI

• Treatment:
  Rest/Brace
  Kyphoplasty
Braces
Kyphoplasty
Metastatic disease

- **Diagnosis:**
  - Hx: CA?
  - PE: tender over spinous process
  - X-rays, bone scan, MRI
- **Treatment:** lesion specific
Emergencies:

- Epidural abscess
- Cauda equina syndrome
- (unstable spine)

Warning sign: rapidly progressive neurological deficits
In Office Epidural Steroid Injection
1cc (40mg) Steroid, 5cc NaCl
Syringe and Needle

22 guage 1\(^{1/2}\) inch needle

Syringe with Luer-Lock (screw-on) tip
Purpose: decrease inflammation
Typical Lumbar Epidural Injection
In Office Epidural Steroid injection technique:
“DROP”
“STOP”
Technique:

- Inject in the midline, just superior to the top of the intergluteal fold (aka: butt crack)

- Try several sites up and down, pressing **firmly** with your needle, until you:
  - “POP” through the membrane
  - “DROP” through the intraspinal space
  - “STOP” against the back wall
Caudal epidural steroid injections

- Safe
- Easy
- Effective


MRI vs Epidural

• **Cost**
  - MRI = $853
  - Epidural: $4.50 (meds) + $72 (fee) = $76.50
  
  (CPT=62311)

• **Effectiveness**
  - MRI = none
  - Epidural = more than 50%: pain significantly better*

**References**


Salahadin A, Epidural steroids in the management of chronic spinal pain:
Low Back Pain

without radiculopathy

- NSAIDs,
- Physical Therapy,
- Education
- Other
- Pain Mgt

with radiculopathy

- NSAIDs,
- Physical Therapy,
- Education
- Epidural/MRI
- Spine Specialist
Thank You!

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