Interventional Pain Management – Who’s calling the shots?

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Who Am I?

- Lisa Grant, MD
- Board Certified in Physical Medicine & Rehabilitation and Pain Management
- Fellowship trained in Interventional Pain Management
- Specialist in non-operative spine care and interventional pain management (injections)
The shape of things to come
Objectives

• Participants will be able to identify which spinal injections are indicated for different types of spinal complaints.
• Participants will be able to identify when additional injections are indicated based on guidelines.
• Participants will be able to identify relative and absolute contra-indications for injections.
Low Back Pain

- 70% lifetime incidence of LBP, 14-45% per year
- Most common in 35-55 year age group
- Risk factors: heavy physical work, obesity, stress
- Most common musculoskeletal pain disorder
- Most expensive worker’s injury
- Most common cause of disability for age <45
“Objective Evidence”

- **X-Ray**
  - **Purpose** – rule out serious, rare diseases
  - **Indications** – red flags, failure to improve, documentation

- **MRI**
  - **Purpose** – eval neurological system
  - **Indications** – Neurological symptoms/signs

- **Bone Scan** – stress fracture, cancer

- **CT** – evals bone best (fractures)

- **EMG/NCS** – evals peripheral nervous system
Rational Approach to Spinal Pain Treatments

Remember: “Primum non nocere”

ABOVE ALL, DO NO HARM
Back Pain Treatments

• Physical Therapy
  – Passive modalities: massage, heat/ice, ultrasound, TENS, rest, traction
  – Active modalities: weight loss, ROM/mobility, strengthening, posture
  – Different types: McKenzie, Williams, Core
Medications for Back Pain

• Above all, do no harm
• Acetaminophen – safest, good adjunct
• NSAID’s – ibuprofen, naproxen, COX-2’s
  • GI, cardiac, renal side effects
  • COX-2’s not more effective for pain, but better anti-inflammatory, compliance (but $$$)
• Muscle relaxants – cyclobenzaprine, tizanidine – I never use benzo’s or Soma
  • Sedating, LFT’s
  • Best in acute phase
  • May be helpful in myofascial pain
• Neuropathic pain meds – gabapentin, amitryptiline, pregabalin
  • Not effective in LBP
  • Sedating, LFT’s
Medications for Back Pain

- Tramadol – stepping stone towards...
- Narcotics
  - Short-acting – good for short-term use
    - Oxycodone, hydrocodone, morphine, etc.
  - Long-acting – when to use?
    - Methadone, OxyContin, MSContin, Fentanyl patches
  - Side effects: constipation, sedation/confusion/depression, respiratory depression, urinary retention
  - Long-term problems – psych, endocrine, sedative
Psychiatric Diseases & Chronic Pain

❖ RECOGNIZE THE PROBLEM
  ❖ 86-90% of chronic pain patients have a psychiatric disease\textsuperscript{30}
  ❖ 60-69% have 2 or more psychiatric diseases\textsuperscript{30}
  ❖ Most common are somatoform pain disorder, depression, substance abuse, and anxiety\textsuperscript{3}
  ❖ Personality disorders in 40 to 59\%\textsuperscript{30}
  ❖ Depression in 30-54\%\textsuperscript{4}
  ❖ History of abuse/trauma in 53\% of women\textsuperscript{7}
  ❖ Malingering in 1-10\%\textsuperscript{32}
  ❖ Alcohol abuse in 65\%\textsuperscript{6}

❖ TREAT THE PROBLEM
  ❖ Therapy AND medications
  ❖ 68% response rate (‘significant improvement in pain’) to antidepressants\textsuperscript{26}
  ❖ 83% response rate with concurrent depression\textsuperscript{27}
Antidepressants

- Studied for pain since 1960\textsuperscript{25}
- 1-4 week latency of effect for depression
- Variable latency for pain
- Serotonin, norepinephrine, dopamine, histamine, ?opioid?
- Review of 4 placebo-controlled studies shows 68\% response rate (vs. 13\% with placebo)\textsuperscript{26} for ‘significant improvement’ in pain
- With concurrent depression, response rate rises to 83\%\textsuperscript{27}
- Especially beneficial in neuropathic pain, regardless of emotional state\textsuperscript{28}
  - Amitryptiline and its metabolite nortryptiline
- SSRI’s preferred over TCA’s for depression, 2ary to favorable side effect ratio, but never studied for pain, likely less effective\textsuperscript{35}
  - Anticholinergic s.e.’s (sedation, dryness, motility, CSCSCPCPS)
- Sedation favorable for sleep disorders
Injections

- NOT CURATIVE – usually temporary at best
- Diagnostic – is this the problem area?
  - Certain nerve or joint
- Therapeutic
  - Lidocaine – numb for 6-8 hours
  - Steroids – decrease inflammation, 7 days to 3 months AT BEST, limited to 3 per year
  - Radiofrequency – ‘burn’ the nerve, regrows within 6-12 months AT BEST
- Need precise diagnosis
- Helpful adjunct to therapy
Lumbar (Interlaminar) Epidural Steroid Injections

- Indications: spinal stenosis, diffuse/bilateral symptoms

- ASIPP criteria: 1 or 2 injections initially, then only repeat if >50% relief lasting >2 months. Max 4/year

- For chronic conditions like stenosis, consider spacing injections out – Maximum 4/year, e.g. q3 months
Cervical Epidural Steroid Injection

- Indications: cervical radiculopathy

- For safety, C6-7 or C7-T1 only

- ASIPP criteria: 1 or 2 injections initially, then only repeat if >50% relief lasting >2 months. Max 4 per year

- No transforaminal approach in the neck
Selective Nerve Block / Transforaminal Epidural Steroid Injection

-Indications:
  HNP/Bulge, sciatica

-ASIPP criteria: 1 or 2 injections initially, then only repeat if >50% relief lasting >2 months. Max 4 per year

-Can do multiple levels, bilateral
Facet Block / Medial Branch Block

- Indications: axial neck or back pain, worse with extension / facet loading
- Diagnostic, possibly therapeutic w/ steroids
- Block 2 levels per facet
Radiofrequency

- Indications: positive response to facet / medial branch blocks

- Average 6-9 months of >50% pain relief; 70% response rate

- ASIPP criteria: only repeat if >50% relief lasting >4 months. Max 2 per year
Sacroiliac Joint Injection

- Indications: lower back / buttock pain, worse with FABER’s

- Diagnostic and therapeutic – lidocaine + steroid

- If short-term response occurs, can do radiofrequency of its nerves and along joint line

ASIPP criteria: 1 or 2 injections initially, then only repeat if >50% relief lasting 6 weeks. Max 4 per year
Lumbar Sympathetic Block

- Indications:
sympathetically-maintained pain of the leg/foot, e.g. RSD / CRPS

- Anesthetic blockade of the lumbar sympathetic chain - leg becomes warm, vasodilated, pain reduces

- Usually short-term response, repeat every week until ‘cycle of pain’ is broken, up to 6 weeks
Stellate Ganglion Block

- Indications: sympathetically-maintained pain of the arm / hand, e.g. RSD / CRPS

- Anesthetic blockade of the cervical sympathetic chain - arm becomes warm, vasodilated, pain reduces

- Usually short-term response, repeat every week until ‘cycle of pain’ is broken, up to 6 weeks

- Done under IV sedation, needs pre-op testing
Contraindications to Spinal Injections

- Known hypersensitivity to agents
- Local or systemic infection
- Local malignancy
- Bleeding diathesis/blood thinners
- Congestive heart failure
- Uncontrolled diabetes
  - Diabetics can have substantial elevations in blood sugar after epidural steroid injections

"Sorry, but throwing your back out while pushing the envelope is not considered a legitimate workplace injury."
Risks of Spinal Injections

- Infection
- Bleeding
- Nerve injury
- Transient numbness or weakness
- Paralysis
- Contrast reaction (allergy)
- Adrenal suppression
- Fluid retention with systemic manifestations which may include peripheral swelling or CHF exacerbation
- Seizure
- Coma/Death
- Pneumothorax - thoracic procedure
- Total spinal blockade - cervical procedures
- Minor subcutaneous infection
- Vasovagal episode
- Dural puncture with subsequent spinal (positional) headache – up to 5% in translaminar injections
Other Considerations

- Response to prior injections (ASIPP criteria)
- Pathology coincides with symptoms (can use injections diagnostically)
- ASA claims data show 1:10,000 risk of catastrophic injury
- Epidural injections may be painful
- 5% chance of pain flares (usually temporary)
- Psychological status of patient
AND WHAT GIVES YOU THE UNEASY FEELING THAT MY WORKERS COMP CLAIM IS UNDER INVESTIGATION?
Surgery

• Discectomy
• Foraminotomy
• Fusion – bone, rods, screws
• 5-10% rate of progression to surgery for back pain
• “Last resort?”
  – Surgical indications: Myelopathy, instability, progressive neurological deficit, motor loss, sensory loss, bowel/bladder loss, spasticity/hyperreflexia
  – e.g. signs of imminent nerve death/ loss of function
Summary

• The best treatment is multidisciplinary
  – Medications
  – Physical therapies
  – Injections
  – Surgery
  – Psychosocial
Pain Levels of an Irish Setter

Nil

Mild

Moderate

Severe

Excruciating

Homicidal
A claimant has axial low back pain that refers to the buttock. There is no numbness or tingling or lower extremity referral. There is pain about the paraspinal muscles on palpation and pain with extension and side bending, but no pain with forward bending. Which Injection may be indicated

A. Transforaminal epidural steroid injection
B. Interlaminar epidural steroid injection
C. Diagnostic Medial Branch block/Facet joint injection
D. Injections are not indicated
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A claimant received two transforaminal epidural steroid injections for right lower extremity radiculopathy for a herniated disc. According to the guidelines, which criteria must be met to consider another injection?

A. May consider a 3rd injection at any time within a 12 month period
B. >75% relief for 1 month
C. >50% relief for 2 months
D. Another injection should not be performed
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3. Which of the following is an absolute contraindication to performing an epidural steroid injection?

A. Allergy to IV dye products
B. Lung cancer without spinal mets
C. Taking a blood thinner
D. Blood sugar >300
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  • A. Allergy to IV dye products
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