Low Back Pain
“The Facet”
Diagnosis and Treatment

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What Does a Physiatrist Do? 
Add Quality to Life
What do we do here at UPMC?

- Stroke rehab
- Traumatic Brain Injury Rehab
- Spinal cord injury rehabilitation
- Amputee rehab
- Transplantation rehab
- Concussion management
- Pain management
- Neurocognitive evaluations
- Acupuncture
- Musculoskeletal rehabilitation
- Spine rehabilitation
- Sports medicine
- Interventional pain management
- Assistive technologies
- Pediatric rehabilitation
- Adult spina bifida
- Botox management
- EMGs
- Platelet rich plasma therapy
- Prolotherapy
- Brain Interface Program
- Regenerative Medicine
Some Pain conditions That We Treat

- Low back pain
- Neck pain
- Headaches related to concussion
- Cervicogenic headaches
- Shoulder pain
- Tennis elbow
- Osteoarthritis related pain
- Knee pain
- Hip pain
- Ankle pain
- Phantom limb pain

- Myofascial pain
- Chronic pain
- Pain related to rheumatologic disease
- Sports injury related pain
- Residual limb pain
- Central pain related to spinal cord injury
- Reflex sympathetic dystrophy
- Neuropathic pain
Axial Pain
Axial Pain

• 92 Patients with CLBP
• 36 positive discogram
• 8 patients with positive facet blocks
• 3 with both positive discogram and facet blocks

Schwarzer, A; Aprill, C et al. Spine; 1994;19:801-806
Facet Mediated Pain

• 1911 first noted as possible pain generator
• 1933 “Facet Syndrome”
• 1963 facet injection reproduced LBP
• Mid 1970s fluoro guided facet denervation
• Second most common procedure in Pain Management in the US
Facet Joint

- True synovial joint
- Synovial membrane
- Hyaline cartilage
- Fibrous capsule
- Dual innervation from medial branch of the dorsal rami at same level and one above
Prevalence of Facet Mediated Pain

5%-90%
Causes of facet mediated pain

• Level above/below spinal fusion
• Spinal surgery
• RA
• Ankylosing Spondylitis
• Reactive arthritis
• Trauma
• OA
• Whiplash
Diagnosing Facet Mediated Pain

- History
- Clinical Exam
- Radiographic studies
- Diagnostic Medial Branch Blocks
Clinical Presentation

- Axial Pain
- Worse with extension
- Walking up/down hills
- Getting up from a chair
- Coming up from a flexed position
- No reliable historical feature or exam
History

- Ensure LBP is not a more ominous symptom
- Weight loss, bowel bladder, night sweats, history of cancer, abdominal aneurysm
- Worse with extension?
Exam

• Do a full neuromuscular exam
• Do “facet joint loading maneuvers”
• Evaluate SI joint, hips
• Inspect for scoliosis
• Evaluate gait
Diagnostic Testing

• Xray
• Oblique views are helpful, but increase radiation exposure
• Most elderly will have facet arthopathy
• Helps eliminate other causes- fracture, compression fracture, mets
Indications for MRI imaging

- Severe objective neurological deficits
- Progressive neurological deficits
- Suspected compression fracture
- Persistent pain for > 1-2 months despite appropriate conservative management
- Suspicion of cancer
Incidence of MRI abnormalities

• Multiple studies have demonstrated high rate of abnormal MRI findings in asymptomatic individuals
    • Only 36% had normal MRIs
    • 52% had at least 1 bulge
    • 38% had multi-level abnormalities
  – Boden (1990)
    • < age 60, 20% had disk herniation
    • > age 60, 36% had disk herniation
Facet Pain

- Medical Management
- Physical Therapy
- Injection Therapy
Medical Management

• American Geriatric Society 2009
• Avoid NSAIDS
• Use Opioids

• AGS- 2012
• Elderly not included in studies
• Multiple medical co-morbidities
Statement on the Use of Opioids in the Treatment of Persistent Pain in Older Adults

• “While we don’t advocate casual or improper use of opioids, we do believe that with careful patient selection and monitoring opioids can be used safely and effectively to treat persistent pain and help avoid its many related costs and complications.”
Muscle Relaxants

Do Not Use

- Carisoprodol
- Chlorzoxazone
- Cyclobenzaprine
- Metaxalone
- Methocarbamol
- Orphenadrine
- Benzodiazepines
- Barbiturates

Caution

- Baclofen
- Tizanidine
Physical Therapy

Directional Preference
Physical Therapy

• Facet Mediated Pain
• Flexion-biased Exercises
• Modalities: Heat, TENS and ULTRASOUND over Lx-x facet joints
• Teach Home Exercise Program
Injections

Needle

Facet joints
Facet Injection vs Medial Branch Block
Facet Injection vs Medial Branch Block
Cervical Facet-Referral Patterns
Lumbar Facet Referral Patterns

FIGURE 1
Pain Referral Patterns from Lumbar L4-5 and L5-S1 Facet Joint Injections. On the left are areas of pain drawn by asymptomatic subjects following injection of hypertonic saline into the facet joints, and on the right are areas of pain drawn by patients with chronic back and leg pain who had similar injections. The different methods of shading indicate different patients. (From Mooney V, Robertson J. The facet syndrome. Clin Orthop Rel Res 1976; 115:149–156.)
Diagnostic Medial Branch Blocks

- Multiple studies demonstrate 30% false positive rate with one diagnostic block
- Recommended to perform two
- If patient obtains 50% or greater relief after two blocks proceed to ablation procedure
“That which cannot be healed by heat cannot be cured.”

Hippocrates, *ca.* 400 BCE
Methods

• Sensory stimulation
• Ideal < 0.5volts
• Motor stimulation
• Multifidi twitch with absence of leg/arm
• Inject LA + steroid
• Ablate 90s 80 Degrees
Does RF Work?

- Randomized, double blind, placebo-controlled trial
- N = 24
- Control group pain recurrence median 8 days
- Treatment group median duration 263 days

Does RF Work?

- N=28
- 64% Complete Relief (n = 18)
- Median Duration – 421 days

- Neurosurgery 1999; 45: 61 - 68
Does RF Work?

- 31 patients CLBP
- Single MBB >50% pain relief
- RF vs Sham
- One year RF 7/15 >50% relief
- Sham 2/16 with >50% relief
- Ablation was for 60s

Van Kleef et al 1999
Does RF Work?

• Randomized DB Study
• Two diagnostic MBB with >80% relief
• Randomized into RF vs Sham
• Greater reduction in pain than sham
• Significant lumbar flexibility, quality of life, and reduction of analgesics
• Lesioned for 60s

Nath S et al. Spine 2008
Harmful to multifidi?

- Polysegmental innervation
- Small study of 5 patients post RF
- Radiologists noted diffuse multifidi atrophy and were unable to determine specific segmental atrophy
- Multifidi is polysegmentally innervated
- L3 Ablation with EMG evidence of denervation in the L3-5 multifidi
CLBP
Post Surgical
Scoliosis
Questions

Mind Full, or Mindful?