CHRONIC BACK PAIN

- 80% of Americans experience back pain during lifetime
- Low back pain 2.3% of all physician visits
- 80% of these pts have pain at year
- Lumbar fusion procedures have increase 194 - 200%
- Cost in excess of $100 billion / year
- Age > 65: 35 million in 2000 - 71 million in 2030

SPINAL FUSION
MOST OVERDOSE DEATHS IN KING COUNTY DON'T INVOLVE ILLEGAL DRUGS

- "While prescription drugs or alcohol have largely eclipsed illegal drugs as the leading cause of overdose deaths in King County, illegal drugs such as cocaine still cause many fatal overdoses, according to a new University of Washington study."
- Seattle Times 2011

SPINAL ANATOMY
RADICULAR PAIN

RADICULOPATHY
NEUROLOGICAL CONDUCTION LOSS, SENSORY OR MOTOR, OFTEN ASSOCIATED WITH PAIN
LUMBAR RADICULOPATHY
- Herniation of nucleus pulposus: L4/5 and L5/S1
- Narrowed nerve foramen
- Facet hypertrophy
- Chemical irritation
- Failed spine surgery

CERVICAL RADICULOPATHY/NECK PAIN
- Disc herniations common at C5/6 and C6/7 - nerve roots 6 and 7
- Cervical spondylosis
- Foraminal or central stenosis - osteophytes and facet
- Facet pain
- Post- cervical laminectomy syndrome

DISC DEGENERATION
DEGENERATIVE DISC DISEASE WITH FACET HYPERTROPHY AND OSTEOPHYTE

SPINAL STENOSIS
- Narrowing of spinal canal and Neural foramen
- 75% lumbar
- 6th decade
- Psuedoclaudication

CHEMICAL IRRITATION
- Metalloproteinase
- Nitric oxide
- Interleukin - 6
- Prostaglandin E2
FAILED SPINAL SURGERY

- Incidence estimated 5-40%
- Recurrence of back pain or extremity pain
- Unclear etiology

POST LAMINECTOMY SYNDROME

- Retained disc material
- Failure of fusion
- Scar tissue
- Stenosis
- Epidural fibrosis
- Adhesive arachnoiditis
- Chemical irritation
- Nerve damage
- Smoking

STRUCTURAL PAIN GENERATORS
INFLAMMATORY PAIN

Herniation / Degeneration
  Mechanical insult
  Generic predisposition
  
Chondrocyte
Inflammatory response
  TNF  IL-1
  Proliferative stimulus

Macrophage recruitment
  MCP-1  GM-CSF  IL-1
  IL-6  IL-4
  VEGF
  PGE2  NGF

Neovascularization
  Matrix degeneration
  Neuronal growth factor
  Nerve ingrowth

TNF-alpha

OTHER SOURCES OF PAIN

- Muscle
- Ligament
- Tendon
- Myofascial
BACK PAIN

AXIAL BACK PAIN
• No or limited radicular component
• Referred pain patterns typically above knee
• Deep aching pain
  1. Facet
  2. SI joint
  3. Discogenic

FACET (ZYGAPOPHYSIAL) JOINT PAIN
• Restrict and control motion of lumbar spine
• Repetitive strain
• Stress from intervertebral disk degeneration
• Low grade trauma
**FACET JOINT ANATOMY**

- Synovial joint
- Connective tissue capsule
- Articular cartilage
- Synovial fluid

**FACET JOINT INNERVATION**

- Sensory innervation of capsule
- Medial branches from dorsal rami
- Each lumbar facet dual innervation
- Nerve from same level and level above

**FACET ARTHROPATHY**

- 15-32% of patients with LBP
- Common source of low back, leg, neck and shoulder pain
- Commonly associated with degenerative disc disease
SACROILIAC JOINT PAIN

- Joins sacrum to pelvis
- Functions to stabilize - minor movement
- Accounts for 10 - 25 % of LBP
- Pain in Superior medial aspect of buttocks
- Variable presentation
- No pain above L5

SI JOINT INNERVATION

- Variable and extensive
- Anterior: ventral rami of L5 to S2 and branches of sacral plexus
- Posterior: lateral branches of the posterior primary rami of L4 to S4 dorsal rami

DISCOGENIC PAIN

- Disk pain/degeneration
- Outer 1/3 of annulus fibrosis innervated
SPINAL INJECTIONS

RADIOLOGY SERVICES CODING 2012

- **77003** fluoroscopic guidance and localization of needle or catheter tip for spine or para spinous diagnostic or therapeutic injection procedures (epidural or subarachnoid)
- New revisions include guidance (Fluoro or CT) in code for SI joint and neurolysis - rhizotomy procedures
- No longer bill separately for Fluoro in these categories
EPIDURAL STEROID INJECTIONS

- Diagnostic / Therapeutic treatment
- Radicular symptoms / extremity pain
- Back pain / discogenic pain / spinal stenosis
- Cervical, thoracic, lumbar

CASE EXAMPLE #1
45Y/O MALE W/CHRONIC NECK AND RIGHT ARM PAIN

- Pain in neck and shoulder
- Radiating symptoms to hand
- Pain when looking up or turning right
- Previous narcotic and NSAIDs

EXAM FINDINGS

- Painful palpation of cervical paraspinals
- Spurling’s test - pain in right shoulder, bicep, thumb index finger

C5/6 RIGHT DISK HERNIATION
CASE EXAMPLE # 2

27 Y/O FEMALE H/O LEFT LEG AND BACK PAIN FOR 6 MONTHS

- Presenting with "sciatica" pain left leg.
- Electrical, stabbing symptoms radiating to foot
- Associated numbness and tingling

EXAM FINDINGS

- Positive straight leg test
- Spasm of low back muscles with loss of lordosis
- Loss of sensation to pinpoint sensation in L 5 distribution
EPIDURAL CODING

- Revised codes
  - 62310 Injection of diagnostic or therapeutic substances (anesthetic, antispasmodic, opioid, steroid, other), not including neurolytic substances, including needle placement, includes contrast for localization when performed, epidural or subarachnoid, cervical or thoracic
  - 62311 ..., lumbar or sacral (caudal)

EPIDURAL CODING

- 62318 Injection, including indwelling catheter placement, continuous infusion or intermittent bolus, of diagnostic or therapeutic substance (including anesthetic, antispasmodic, opioid, other solution), not including neurolytic substances, includes contrast for localization when performed, epidural or subarachnoid; cervical or thoracic
  - 62319 ..., lumbar or sacral (caudal)
EPIDURAL CODING

- Revised text

- Fluoro may be used for 62310 - 62319, but not required

- For Fluoroscopy report 77003, epidurography use 72275

- Placement and use of catheter to administer one or more epidural injections on a single calendar day should be reported as if a needle was used - ie, as a single injection, using 62310 or 62311 - do not use 62318 or 62319

- If prolonged period - over 1 day then use 62318 or 62319

TRANSFORAMINAL EPIDURAL CODING

- No changes

- Imaging inclusive

- 64479 injection, anesthetic agent and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or CT); cervical or thoracic, single level

- Ultrasound guidance, 0228T

- 64480 ...; cervical or thoracic, each additional level

- Ultrasound guidance 0229T

TRANSFORAMINAL EPIDURAL CODING

- 64483 ...; lumbar or sacral, single level

- Ultrasound guidance 0230T

- 64484 ...; lumbar or sacral, each additional level

- Ultrasound guidance 0230T

- Bilateral procedures, use modifier 50
FACET STEROID INJECTION

- Intraarticular or medial branch nerve
- Therapeutic/diagnostic
- Lumbar, thoracic, cervical

CASE EXAMPLE # 3

58 Y/O MALE WITH CHRONIC LOW BACK PAIN

- Deep aching pain, worse in morning
- Pain with extension or twisting motion
- No radicular component
EXAM FINDINGS

- Pain on palpation of lumbar spine
- Neurologically intact
• Revised text

• Image guidance (fluoroscopy or CT) and any injection of contrast are inclusive components of 64490 - 64495. Imaging guidance and localization are required for the performance of facet joint injections.

• If imaging not used, report 20552 - 20553.

• If ultrasound guidance used report 0213T - 0218T

• No changes to codes

• Covers intraarticular and medial branch blocks

• Coding based on individual joint or nerves innervating single level

• Only 3 levels represented in code
FACET CODING

• 64490 injection, diagnostic or therapeutic agent, paravertebral facet joint (or nerves innervating the joint) with image guidance (fluoro or CT), cervical or thoracic; single level
• 64491 ... Second level
• 64492 ... Third and any additional levels
• Do not report 64492 more than once per day
  • Bilateral procedures, use modifier 50

FACET CODING

• 64493 ..., lumbar or sacral; single, level
• 64494 second level
• 64495 third and any additional level
• Do not report 64495 more than once per day
  • Bilateral use modifier 50

SACROILIAC STEROID INJECTION

• Intraarticular injection
• Therapeutic and diagnostic
CASE EXAMPLE #4

48 Y/O FEMALE W/ BILATERAL HIP PAIN

- Lumbar fusion 6 years ago
- Progressive chronic hip/buttock pain radiating to groin
- Aching/ Stiff

EXAM FINDINGS

- Pain on palpation of SI, at PSIS
- Pain noted when rising from sitting position
- Positive FABER and Gaenslen’s tests
- Diagnosis is primarily based on physical exam
SI JOINT STEROID INJECTION

SI JOINT CODING

• Revised code

• 27096 Injection procedure for SI joint, anesthetic/steroid, with image guidance (Fluoro or CT) including arthrography when performed

• If bilateral, modifier 50

• Image guidance included

• Arthrography in code description - radiology code 73542 deleted

• No Fluoro or CT, use 20552, even if using ultrasound

• No longer use 20610

RADIOFREQUENCY ABLATION/ RHIZOTOMY PROCEDURES
RADIOFREQUENCY NEUROTOMY

- High frequency electrical current through active electrode at active tip of insulated needle
- Produces thermocoagulation/neurolysis
- Predictable size of lesion
- Monitoring of temperature, voltage, current and wattage
- 85 degree Celsius - 90 sec

CASE EXAMPLE #5

58 Y/O MALE WITH CHRONIC LOW BACK PAIN

- S/P successful bilateral L 3/4 L 4/5 facet joint steroid injection
- Short term relief for a month
- Hoping for long term solution
FACET RHIZOTOMY

- Diagnostic blocks performed
- Rhizotomy needle placement on lateral process in area of medial branch
- Thermocoagulation/neurolysis performed
- Each joint requires 2 needle placements

LUMBAR FACET

RADIOFREQUENCY ABLATION
MEDIAL BRANCH RIGHT L3, L4, L5
(FACET L4/5, L5/S1)
FACET RHIZOTOMY CODING

- Revised text
- Codes 64600 - 64681 include the injection of other therapeutic agents (steroids)
- 64622 - 64627 have been deleted - now image guided neurolysis of facet joint nerves, 64633 - 64636
- Image guidance is included / required in these new codes
- Pulsed radiofrequency, nondestructive therapies, or no image guidance use 64999 (unlisted procedure)

FACET RHIZOTOMY CODING

- New codes
- Note: code based on joint not individual nerves
- Destruction by neurolytic agent, paravertebral facet joint nerves with imaging guidance...
  - 64633 ...cervical or thoracic, single facet joint
  - 64634 ...cervical or thoracic, each additional facet joint
  - 64635 ... Lumbar or sacral, single facet joint
  - 64636 ... Lumbar or sacral, each additional facet joint
- Bilateral procedure, use modifier 50

CASE EXAMPLE # 6
48 Y/O FEMALE W/ BILATERAL HIP PAIN

- S/P bilateral SI joint injection
- Short term relief 1 month
- R hip pain returns

SI JOINT RHIZOTOMY

- Complex innervation
- Medial branch L4 (located on lateral process of L5)
- L5 dorsal ramus at sacral ala
- Stair stepped lesions lateral branches of S1-S4
SI JOINT RHIZOTOMY BILLING

- Not clearly defined (medial branch L4, L5 and lateral branches of S1, S2, S3, S4)
- 64635 destruction by neurolytic agent, facet joint nerves with fluoroscopic guidance, lumbar or sacral, single facet joint
- 64640 other peripheral nerve or branch (or 64999?)
- Modifier 59, distinct procedural service, ... To identify procedures/services that are not normally reported together, but are appropriate under the circumstances. Must document separate ...

IMPLANTABLE DEVICES
CASE EXAMPLE # 7

50 Y/O MALE S/P SPINAL FUSION WITH PERSISTENT LEG PAIN

• 1 year after surgery
• No failed fusion or hardware
• CT shows no structural abnormalities
• No relief with medical management or injections
• Failed back surgery syndrome

SPINAL CORD STIMULATOR

• Indicated for chronic intractable pain, trunk or limbs
• Neuropathic pain
• Failed back surgery syndrome
• Radiculopathy
• Arachnoiditis
• Gate theory of pain
• Modulated by higher neuronal centers
• Some inhibition of pain in dorsal horn of spinal cord
• Pain replaced by mild numbness

NEUROMODULATION

EPIDURAL LEADS/ELECTRODES AND IMPLANTABLE PULSE GENERATOR

THORACIC LEAD PLACEMENT
TRIAL AND IMPLANT

NEUROSTIMULATOR CODING

- 63650 percutaneous implantation of neurostimulator electrode array, epidural
- 63661 removal of spinal neurostimulator electrode percutaneous arrays, including Fluoro, when performed
- 63663 revision, including replacement, when performed, of spinal neurostimulator electrode percutaneous arrays, including Fluoro when performed
- 63685 insertion or replacement of spinal neurostimulator pulse generator
- Revision or removal of implanted pulse generator
- Do not report 63661 or 63663 when removing trial leads

NEUROSTIMULATOR ANALYSIS-PROGRAMMING CODING

- Coding now based on number of parameters changed
  1. Simple programming 95971 includes changes to three or fewer of defined, not time based
  2. Complex programming 95972 - 95973 includes changes to more than three.
  3. 95972 time based, 1 hour - 52 modifier if less than 31 minutes
  4. 95973 each additional 30 minutes
  5. 95970 analysis (without programming) for all pulse generators, no difference if simple or complex
CASE EXAMPLE # 8

48 Y/O FEMALE WITH CHRONIC NECK PAIN

- Failed cervical surgery
- Chronic and increasing opioid use
- Increasing undesirable side effects
- Failed conservative treatments and other interventional techniques

IMPLANTABLE PAIN PUMP

- Intrathecal delivery
- Variety of pain conditions - most common cancer and spinal -
- Mixed pain patterns - nociceptive
- Low dose of opioid, local anesthetic, ziconotide, agonist, baclofen
- Infused directly into CSF and spinal cord receptors
- Improved pain control with less systemic effect
- Implantable refillable pump and reservoir
INTRATHECAL PLACEMENT

INTRATHECAL PAIN PUMP CODING
- No changes
- 62350 implantation, revision or repositioning of tunneled intrathecal or epidural catheter, for long-term medication administration via an external pump or implantable reservoir/infusion pump; without laminectomy
- 62355 removal of catheter
- 62360 implantation or replacement of device for intrathecal or epidural drug infusion; subcutaneous reservoir
- 62362 nonprogrammable pump
- 62362 programmable pump, including preparation of pump with or without programming
- 62367 removal of subcutaneous pump

IMPLANTED PROGRAMMABLE PUMP SERVICES CODING
- Revised code / new code
- Revised 62367: electronic analysis of programmable, implanted pump for intrathecal drug infusion; without reprogramming or refill
- No change 62368: ... With reprogramming only
- New 62369 (combo of 62368 and 95990): ... with reprogramming and refill
- New 62370 (combo of 62368 and 95991): ...with reprogramming and refill (requiring physician's skill)
- Revised 95990 refilling with analysis - no reprogramming
- Revised 95911: ... Requiring physician skill
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