When to refer

- Nonradicular low back pain in the vicinity of the PSIS
- Duration of pain at least 3 months
- Pain causing functional disability
- Failure to respond to more conservative management such as PT, OMT, NSAIDS, exercises
- Lack of disc herniation or evidence of radiculitis
**Sacroiliac Joint Interventions**

**Technique**

- Intraarticular injections of local anesthetic can help determine if the SIJ is a source of pain.
- Paucity of literature on the role of therapeutic SIJ injections.
- Controversy exists over the role of radiofrequency ablation as innervation varied.

25 or 22 gauge needle into the inferior aspect of the joint.

_C. Posterior oblique view._
Once the needle is in the joint, intraarticular placement is confirmed with contrast. Then a mixture of steroid and anesthetic is injected.
Epidural Injections
Epidural Injections

- Based on premise that corticosteroid epidurally = higher concentration over inflamed nerve root
- Historically – therapeutic
- With use of fluoro guidance and contrast – diagnostic value
- Most early studies criticized secondary to blind technique
Epidural Injections

When to refer

- Radicular pain
- Duration of pain at least 3 months
- Pain causing functional disability
- Failure to respond to more conservative management such as PT, OMT, NSAIDS, exercises
- Pain resulting from
  - Lumbosacral radiculopathy
  - Spinal Stenosis
  - Postlaminectomy syndrome
  - Epidural fibrosis
  - Post herpetic neuralgia
  - Complex regional pain syndrome

*Interventional Techniques in Chronic Spinal Pain, pg 355, Manchikanti, Singh, 2007*
Epidural Injections

Contraindications

Absolute Contraindications

- Cauda equina syndrome
- Suspected local or systemic infection
- Patient unable to understand informed consent and protocol
- History of anaphylactic reaction to any constituents of epidural
- Pregnancy
- Patient unable to stop anticoagulation
- Coagulopathy

Epidural Injections

Three Approaches

Interlaminar
Conventional approach

Transformaminal
Precise placement at site of pathology

Caudal
Postsurgical
Bilateral or multilevel and sacral involvement
Epidural Injections

Mechanism of Action

PLA2, NO, PLE2, TNF, Interleukins, Metalloproteinases, immunoglobulins

PLA2

Arachidonic Acid

STEROID

Inflammatory cascade, chemical irritation of nerve roots

Block nociceptive input

LIDOCAINE

Lumbar Disc Herniation
• Epidural space entered via sacral hiatus

• Lower risk of subarachnoid puncture (Dural sac ends at S2)

• Can use epidural catheter threaded fluoroscopically to the desired spinal level

• Abdi et. al. systematic review, evidence strong for short term and moderate of long term relief of pain from radiculopathy

Epidural Injections

Caudal Approach

Lateral view with contrast

AP view with contrast

Contrast pattern
Passing the needle through the interlaminar space along the midline through the interspinous ligament or slightly to the side of the ligament, then penetrating through ligamentum flavum to enter the epidural space.
Epidural Injections

Interlaminar Approach

- Contrast is then injected to confirm location
- Boswell et. al described that multiple systematic reviews provided conflicting opinions
- Abdi et. al. in a systematic review, evidence strong for short term and limited for long term relief of pain from radiculopathy


Epidural Injections

Transforaminal Approach

- Can improve the results of the classic interlaminar approach.
- More precise placement at or near the presumed nerve root
- More target specific and thus has diagnostic utility – helps determine the primary pain generator in multilevel disc herniation or multilevel stenosis
- Abdi et. al. in a systematic review showed evidence strong for short term relief, and moderate for long term improvement in lumbar nerve root pain

Epidural Injections

Transforaminal approach

- Needle placed within the foramen, below the pedicle
- Contrast injected with epidural flow and outline of nerve
Discogenic Pain
Low Back Pain

Discogenic pain

- 1934 – Mixter and Barr surgically removed a posterior disc prolapse with pain relief
- 1948 – Hirsch injected procaine into the lumbar disc with pain relief
- 1948 – Lindblom reported the clinical use of lumbar disc injections to identify discs responsible for low back pain
- Prevalence of discogenic back pain has been reported up to 26% in pts after the facet joint was ruled out


Hirsch C. Attempt to diagnose the level of disc lesion clinically by disc puncture. *Acta Orthop Scan* 1948; 18:131-140


Injection of contrast medium into the disc to define its morphology

Increases the intradiscal pressure allowing simultaneous evaluation if that anatomic location is the pain generator (concordant)

Patient often sent for post-discoco CT

Sachs et. al. developed Dallas discogram scale to grade disruption of the annulus on a four point scale
• This modality can be used for planning surgical intervention or to identify patients for less-invasive procedures
Unremitting low back pain for greater than 3 months that has failed to respond to conservative treatment

Diagnostic imaging has failed to elucidate possible causes of low back pain

Surgical planning for lumbar fusion or artificial disc replacement

Evaluation for percutaneous procedures

Evaluation of postsurgical patients for recurrent disc herniation

**Indications**

*Interventional Techniques in Chronic Spinal Pain*, pg 527, Manchikanti, Singh, 2007