Indications of Epidural Steroid Injections

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Epidural Steroid Injections

1. Indications
2. Pre-injection Imaging
3. Mechanism of Action
4. Types and Techniques
5. Outcomes
Indications

Cervical, thoracic, or lumbar radiculopathy caused by:

1. Herniated Disc
2. Spinal Stenosis (central vs. neuroforaminal)
Stenosis

http://www.mayfieldclinic.com/PE-STEN.htm
Pre-injection Imaging

- MRI without contrast of clinical symptoms
- Prior spine surgery---MRI with contrast
Pre-injection Imaging


1. MRI results did not affect clinical outcomes
2. MRI results only had a small bearing on decision making
Guidelines for Imaging


• serious or progressive and neurological deficits
• Pre-epidural or surgery evaluation


• neurologic symptoms that persist for at least 6 weeks and not receding
Mechanism of Action

Steroid

1. Inhibit Phospholipase A2
2. Reduction in Arachidonic Acid
3. Suppress impulses from damaged nerves
4. Depress impulses from unmyelinated C-fibers
Mechanism of Action

Local Anesthetics only

1. Increase blood flow to damaged nerves
2. Washout of inflammatory cytokines (volume makes a difference)
Techniques

Cervical
1. Interlaminar Epidural Steroid (CESI)

Lumbar
1. Caudal Epidural Steroid (Caudal ESI)
2. Interlaminar Epidural Steroid (LESI)
3. Transforaminal Epidural Steroid (TFESI)
Caudal ESI

www.painprevent.com
Outcomes


• 70% of patients with radicular symptoms will be better by 6 months
• Conflicting reports of the various technique
Safety


- 4,265 injections on 1,857 patients over 7 years
- No major complications were identified
- 103 minor complications (2.4%)
  - Pain at injection at site
  - Persistent numbness
Complications of TFESI

Increased Pain
Pain at injection site
Persistent numbness

Intravascular Injection


LESI vs. TFESI

Ivan Rados, MD, Katarina Sakic, MD, PhD, Mira Fingler, MD, and Leonardo Kapural, MD, PhD. Efficacy of Interlaminar vs transforaminal Epidural Steroid Injection for the Treatment of Chronic Unilateral Radicular Pain: Prospective, Randomized Study.

Unilateral Radiculopathy demonstrated no difference between LESI vs. TFESI.
LESI vs. TFESI


No clinical significant difference in pain relief or functional outcomes
Cost-Effectiveness

• Relative low cost procedure
• Might expedite a return to work status in sooner than 3 months
Cost-Effectiveness


- University of Michigan and Priority Health (Grand Rapids, MI)
- Mandatory physiatry consults decreased surgery rates by 25%
- 74% were satisfied with physiatry consults

| TABLE 5. Financial Impact to the Insurer Related to the Spine Centers of Excellence Program |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|                                               | November 2006 to October 2007 | November 2007 to October 2008 | Change | Percent Change |
| Surgical per member per month costs           | $9.75                          | $7.29                         | $2.46  | −25.1          |
| Total spine-related per member per month costs| $19.77                         | 17.37                         | $2.40  | −12.1          |
| Average reimbursement per surgery             | $21,250                        | $22,853                       | $1603  | +8             |
Alternatives

1. Surgery
   - Costly
   - Equivocal data

2. Medication Management
My Recommendations

- Early evaluation (<3 months from injury)
- Imaging
- NSAIDS and muscle relaxants for 1-2 weeks
- Physical Therapy
- Seek consultation with pain medicine immediately
- Injection and return to work
Example 1

• 62yo male complaining of low back and left leg pain
Example 2

• 62 yo female complaining of low back and right thigh pain
Example 3

• 40 yo female presenting with low back and left hip pain after uterine artery ablation
The End