Is Pain Alone an Indication for Spine Surgery

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Should Pain-Alone be an Indication for Spine Surgery?
Surgeons: YES

- Various international standards

- So what?
  - Evidence for LS for axial pain very limited
  - Spine Surgery US: > $30 billion/year

Patients: “Maybe” and “Not Sure”

- General population: Negative view of LS (Puentedura, Louw and Landers 2012)
- Bad news travels
- Internet
Add to this...

- Increased use of Internet by spine patients seeking answers...


So What?

- Less than 10% of relevant web sites were determined to be of high-quality.
The immediate effect of viewing images prior to lumbar surgery*

- Adriaan Louw, PT, M.App.Sc (physio)
- Lorimer Moseley, PT, Hons., PhD
- Cesar Fernandez, PT, DO, MS, PhD
- Terry Cox, PT, DPT

* Study in progress

Physical Therapists: NO

- We know the outcomes are not that good (Lots of references)
- Not trained to see surgery patients
We are not trained to treat these patients...

- 73% of therapists surveyed reported NO training in PT school on rehabilitation of postoperative spine patients.

- Implies personal struggle with these patients:
  - In 3 out of the 4 categories related to pain, therapists with less clinical experience rated it statistically significant higher to know more about pain, compared to therapists with more clinical experience.

Pain Scientists: HECK NO

- Some issues to consider

1. Pain is not an input


2. You can have pain and no tissue injury

Emotional Pain uses the same brain circuitry as physical pain

“Nociception is neither necessary or sufficient for pain”

3. Injury does NOT have to hurt

A nail rests in a South Korean man's skull in December 2004. He'd sought help for a bad headache and upon discovery said it likely happened four years earlier.
4. Developing Pain is modulated by beliefs, knowledge, etc.

- Beliefs
- Knowledge, logic
- Social context
- Anticipated consequences
- Other sensory cues

Denotes synaptic modulation

One of my favorites

- Patients who underwent discectomy and shown their “bad disc” material recovered significantly better than those who were not shown their excised disc material
  - Leg pain (91.5 vs 80.4%; p<0.05)
  - Back pain (86.1 vs 75.0%; p<0.05)
  - Limb weakness (90.5 vs 56.3%; p<0.02)
  - Paraesthesia (88 vs 61.9%; p<0.05)
  - Reduced analgesic use (92.1 vs 69.4%; p<0.02)

5. Pain is a Perception of Threat

- “Ruptured Disc”
- “Bulging Disc”
- “Instability”
- “Disc Disease”
- “High Intensity Zone”
- “Modic Changes”

Disc Bulges Reabsorb

- Several studies have shown disc bulges reabsorb over time

40% of “normals” have a bulging disc on MRI and NO LBP


MRI’s: Discs respond and look different between static and movement-MRI

**Time of Day impacts MRI Results**

- Discs are swollen on average 20% more in the morning compared to evening. The time of day that an MRI is done may affect the results of the MRI


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**No Correlation Between LBP and DJD**
More info on imaging...

- **25-50%** of general population:
  - Hypointense disc signal
  - Annular tears
  - High intensity zones
  - Disc protrusions
  - Endplate changes
  - Zygaphyseal joint degeneration
  - Asymmetry
  - Foraminal stenosis.


Modic Changes and LBP


- Lot’s of debate if Modic changes are correlated to discogenic LBP (Rahme R, Moussa R. The modic vertebral endplate and marrow changes: pathologic significance and relation to low back pain and segmental instability of the lumbar spine. *AJNR. American journal of neuroradiology*. May 2008;29(5):838-842.)


The Complexity of Pain

• Is Cervical Radiculopathy an indication for Surgery?

**YES**


Diagnosing Radiculopathy

• Upper Limb Neurodynamic Tests 1A (Median) highest sensitivity for any physical test for cervical radiculopathy


SO...Theoretically – who needs surgery?

A

B

But...

Straight Leg Raise is the Same

- SLR is worse if a patient thinks it’s a test of nerve vs. test of muscle - Coppieters, 2006


Should Pain-Alone be an Indication for Spine Surgery?

- Our jobs are getting harder