

















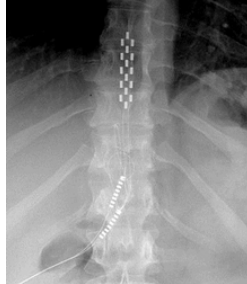






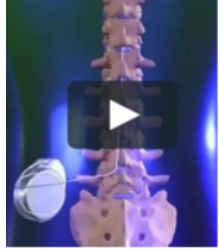
## Nerve Stimulation

- One of the most promising new forms of Tx; usage increasing rapidly
- FDA approved as early Tx for back pain
- Often used for failed back syndrome
- Spinal and dorsal root ganglion stimulators block pain as it enters/is processed by the spine
- Peripheral stimulators block efferent nerve
- Many different modalities, based on frequency, wave form
- Requires psych eval
- Electrodes and battery pack implanted



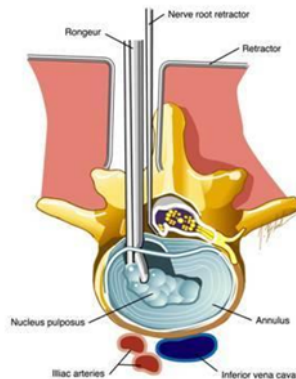
## Intrathecal Pumps

- Basically used as a last resort
- Surgically implanted, prone to blockage
- May be used for 1-level opioid infusion (micro-dosing) in intolerant patients
- Ziconitide (Prialt)
  - From sea snail venom
  - Presynaptic inhibitor of pain neuroTx
  - Very potent
  - Many ADRs, requires very slow titration
- Baclofen – for severe spasm (CP, post-stroke, etc.)



## Endoscopic Microdiscectomy

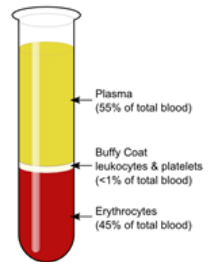
- For when a small disc piece has extruded and is pushing on a nerve
- Low risk, outpatient procedure
- Increasingly popular
- A much less invasive alternative to laminectomy, fusion, etc.



## Coming Soon to a Procedure Room Near You!

### Platelet Rich Plasma Injections

- Indications:
  - OA
  - Muscle tears
  - Tendon/ligament sprains
- Early studies:
  - Seem to improve function more than pain
  - Speed recovery from acute injuries
  - Better than viscosupplementation in OA

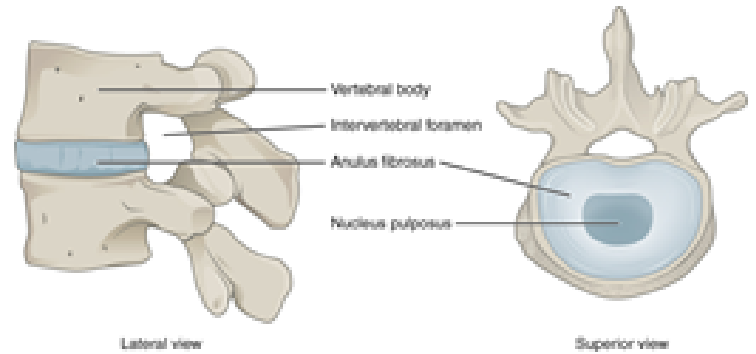


## Coming Soon to a Procedure Room Near You!

- Nucleoplasty
  - Few well-done studies
  - 66-75% report > 50% improvement
  - As more studies done, expect use to increase

## Coming Soon to a Procedure Room Near You!

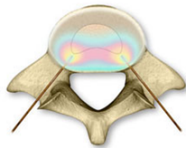
- Intradiscal Electrothermal Annuloplasty (IDET)
- Was common, waned, now coming back; still somewhat controversial
- For pain from a torn annulus
- Annulus cauterized, causing fibrosis and stabilization, may kill pain receptors
- Much less invasive alternative to fusion
- Few well-done studies; those available show mild-moderate improvement



## Coming Soon to a Procedure Room Near You!

### Biacuplasty

- May replace IDET
- Goal is to denervate and numb disc
- Cooled electrodes apply RF energy to posterior disc, where nerves grow in
- Early studies promising



## References

- Select Opioid-Related Morbidity and Mortality Data for WI, November 2016, WI DHS, Division of Public Health, 1/2017
- CDC Opioid Overdose Data, <https://www.cdc.gov/drugoverdose/data/overdose.html>
- Cochrane analyses on acute pain:
  - Naproxen for postop pain, 2011 (C Derry & Derry, 2009)
  - Oxycodone for postop pain, 2010 (Gaskell, Derry, Moore, & McQuay, 2009)
  - Ibuprofen plus acetaminophen for post-op pain. (CJ Derry, Derry, & Moore, 2013)
- Opioid Therapy for Chronic Pain, Ballantyne J, Mao J. NEJM 2003; 349:1943-1953
- Efficacy and Safety of Opioid Agonists in the Treatment of Neuropathic Pain of Nonmalignant Origin Eisenberg E, McNicol ED, Carr DB. JAMA 2005; 293(24):3043-52
- Opioids for Chronic Non-Cancer Pain: a Meta-Analysis of Effectiveness and Side Effects, Furlan AD, Sandoval JA, Mailis-Gagnon A, Tunks E. CAMJ 2006; 174(11):1589-94

## References

- Clinical Importance of Changes in Chronic Pain Intensity Measured On An 11-point Numerical Scale, Farrar JT, Young JP Jr, LaMoreaux L, Werth JL, Poole RM. Pain, 2001; 94:149-58
- Opioids in chronic non-cancer pain: systematic review of efficacy and safety, Kalso E1, Edwards JE, Moore RA, McQuay HJ. Pain. 2004 Dec;112(3):372-80.
- Pharmaceutical treatment patterns for patients with a diagnosis related to chronic pain initiating a slow-release strong opioid treatment in Sweden, Gustavsson A1, Bjorkman J, Ljungcrantz C, Rhodin A, Rivano-Fischer M, Sjolund KF, Mannheimer C. Pain. 2012 Dec;153(12):2325-31
- A population-based survey of chronic pain and its Tx with prescription drugs, Toblin RL1, Mack KA, Perveen G, Paulozzi LJ. Pain. 2011 Jun;152(6):1249-55.
- A population-based cohort study on chronic pain: the role of opioids, Sjogren P1, Grønbaek M, Peuckmann V, Ekholm O. Clin J Pain. 2010 Nov-Dec;26(9):763-9.

## Questions?



Thank you for your time & attention!