

Disc Decompression

Matthew P Rupert, MD MS FIPP

Aerospace Engineer – University of Cincinnati

Biomechanical Engineer – University of Cincinnati

Doctor of Medicine – University of Texas

General Surgery – Good Samaritan, Cincinnati

Anesthesiology – University of Tennessee

Interventional Pain Medicine – Texas Tech University

Interventional Pain Management – American Society of Interventional Pain Physicians

Fellow of Interventional Pain Medicine – World Institute of Pain

MattRupert@SpineNashville.com

Matt Rupert, MD is an interventional pain medicine physician fortunate enough to be blessed with good training experience and opportunities along the way. He has a background in engineering x2, general/vascular surgery and orthopedic research before following a pathway of anesthesia/pain medicine.

He has very specific interests in solving niche pain problems and optimizing use of available tools/devices. He has developed a very large practice of treating complex head, neck and face pain with neuromodulation. He has additional interests and experience in various approaches for percutaneous-type approaches for treating spinal disc disease. He works as a solo provider and has affiliations with local research groups. He has a support staff for his patients that is vital to patient experiences and outcomes.

He lives in Nashville with his wife, two daughters, son and various farm animals. He enjoys coaching soccer and “tinkering” on anything “that needs tinkering.”

Disclosures: Dr. Rupert is currently involved with St Jude Medical on research, consulting and as a proctor for DRG stimulation. He has been fortunate to be involved with teaching with the World Institute of Pain, ASIPP and several regional pain societies. Now TPS.

The **Scope** of Spine Problems

- *More than 86 million Americans suffer from pain.*
- *33% of adult Americans have had back pain in the **last 30 days**.*
- *Back pain is the #2 reason people visit a doctor.* — *National Institute of Health*
- *Back pain is the #1 reason people stay home from work.*
- *85% of ALL people will suffer some moderate to severe back pain at some point in their lives.*
- *Failed open back surgery is the #3 cause of permanent disability in the Western world and the number is rising.*



MRI Cannot Diagnose Pain

- *The MRI can only reveal a potential cause of pain*
- *The actual source of pain may not even be seen*

- ✓ *Diagnose and treat as a spectrum.*
- ✓ *Directly visualize sources of pain.*
- ✓ *Pain Mapping can be done with selective root blocks, discography, electrical nerve root mapping and direct visualization with small scopes.*



Medications

- *Mask the pain*
- *Harmful over time*
- *Costly*
- *Temporary fix*
- *Side effects*
- *Addiction risks*



Negative Aspects of Narcotics

1. Addiction...

and development of new
pain receptors.

2. Potential cause of cancer

3. Are narcotics necessary?

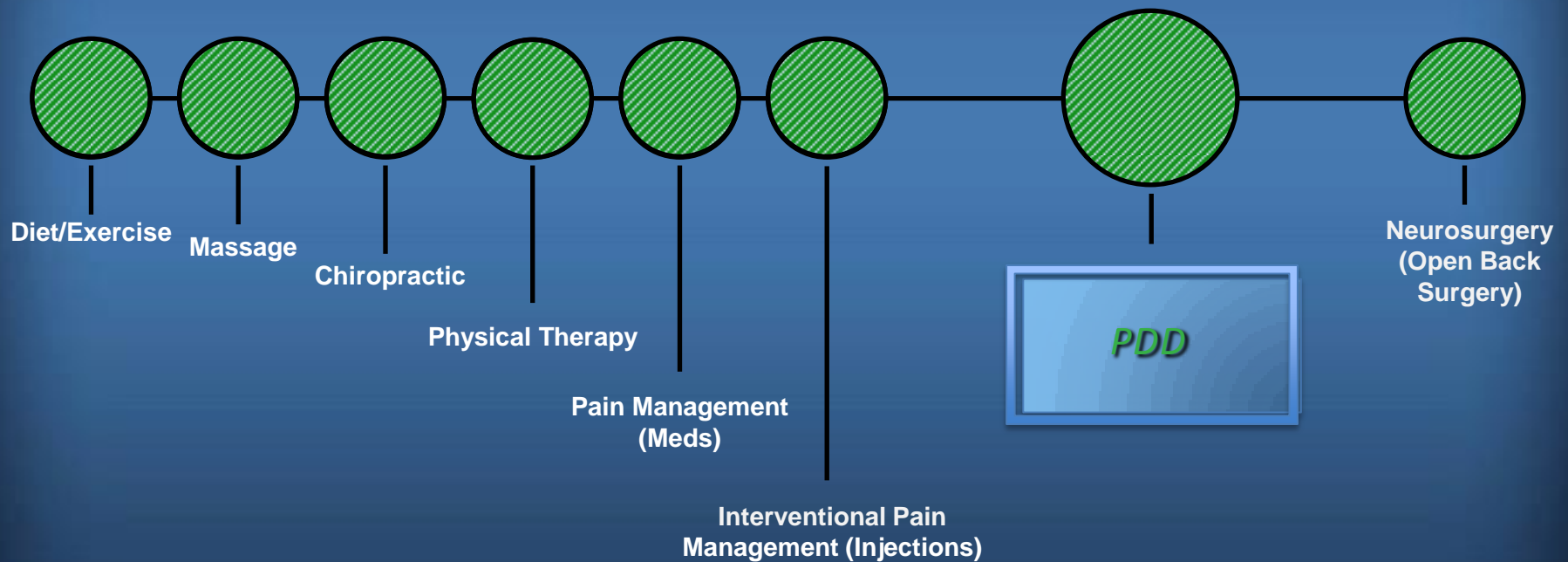
Epidural Steroid Injections

- *Repeated doctor visits*
- *Costly*
- *Often temporary solution*
- *Loses efficacy with frequency*



Continuum of Care

Where does PDD fit in care strategy?

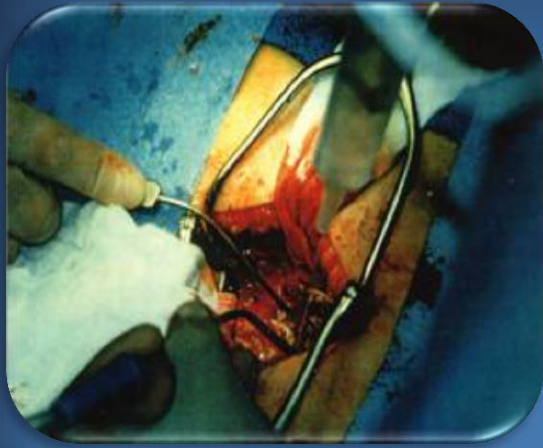


So, what are your options?

- *Medications*
- *Injections*
- *Physical Therapy / Chiropractic Care*
- *Surgery*
 - *Traditional “open-back” surgery*
 - *Minimally Invasive / Microscopic surgery*
 - *Neurostimulation*
 - **IPM Visualization Procedures**

Alternative Procedure Comparison

Open Back



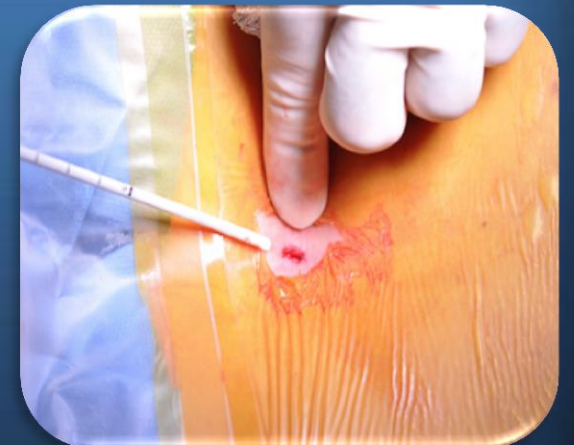
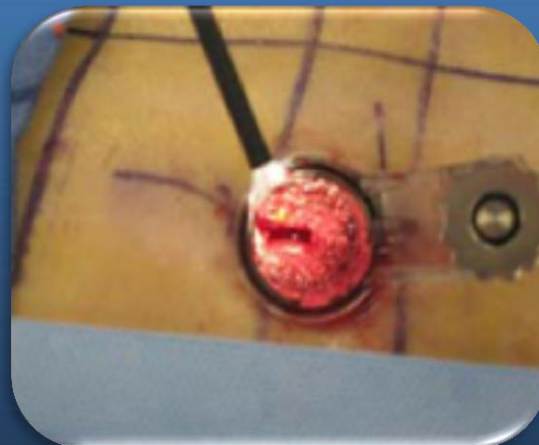
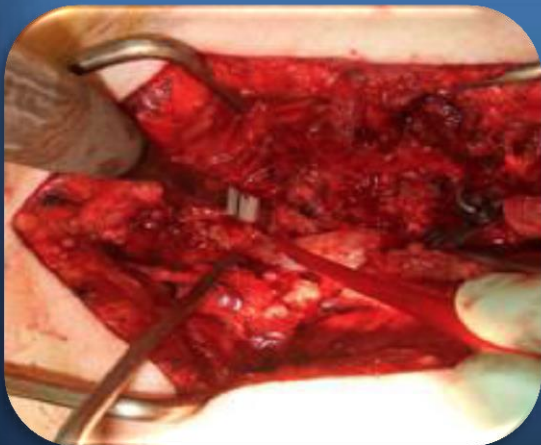
Endoscopic



Direct Visual



NO nuts, bolts, screws



No Stitches! Least Invasive

Minimally Invasive?

Open Back Surgery = 50% Failure Rate



Exert Your Rights:
Refuse to fuse your spine!

Minimally Invasive Direct Visualization

- *Gentle with muscle, bone, nerves, ligaments, spinal cord, vessels*
- *SAFE to do EARLY*
- *Shorter recovery*
- *Less postoperative pain*
- *Little-to-no scarring*

Tools / Approaches

- Chymopapain
- Percutaneous laser disc decompression
- Automated percutaneous lumbar discectomy
- Dekompressor
- Nucleoplasty
- Direct visualization
 - Flexible scopes
 - Rigid scopes

Percutaneous Disc Decompression for Lumbar Radicular Pain: A Review Article

Damian Ong, MBBS, MMed(Anaes)*; Nicholas H. L. Chua, MBBS, MMed(Anaes), PhD, FIPP[†]; Kris Vissers, MD, PhD, FIPP^{*,†,‡}

■ Abstract

Background: Open discectomy remains the standard of treatment for patients with lumbar radicular pain secondary to a prolapsed intervertebral disc. Open discectomy performed in patients with small, contained herniations may result in poor outcomes. The various techniques of percutaneous disc decompression (PDD) have been developed to address this population.

Methods: A literature search was conducted on articles, which address PDD for lumbar radicular pain. Published techniques include chymopapain chemonucleolysis, percutaneous laser disc decompression (PLDD), automated percutaneous lumbar discectomy (APLD), Dekompessor, nucleoplasty, and targeted disc decompression (TDD). In addition, the rationale of provocative discography, selective nerve root injections, and intra-op discograms before performing PDD is discussed in detail.

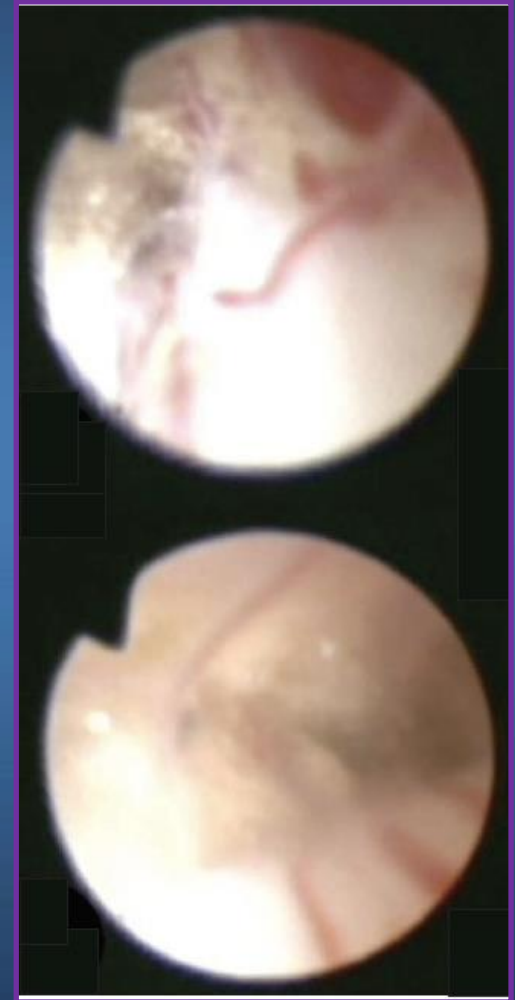
Results: Dekompessor and nucleoplasty have the best level of evidence with a score of 2B+. The chymopapain chemonucleolysis has the most publications, but it is also accompanied by the most significant adverse complications and so it is

scored as a 2B+/- . The other techniques are supported mainly by observational studies and thus their scores range between 0 and 2B+/- . There is no supporting evidence for provocative discography in patients with lumbar radicular pain. The evidence for a positive selective nerve root injection as an inclusion criteria or the need for an intra-op discogram shows mixed results.

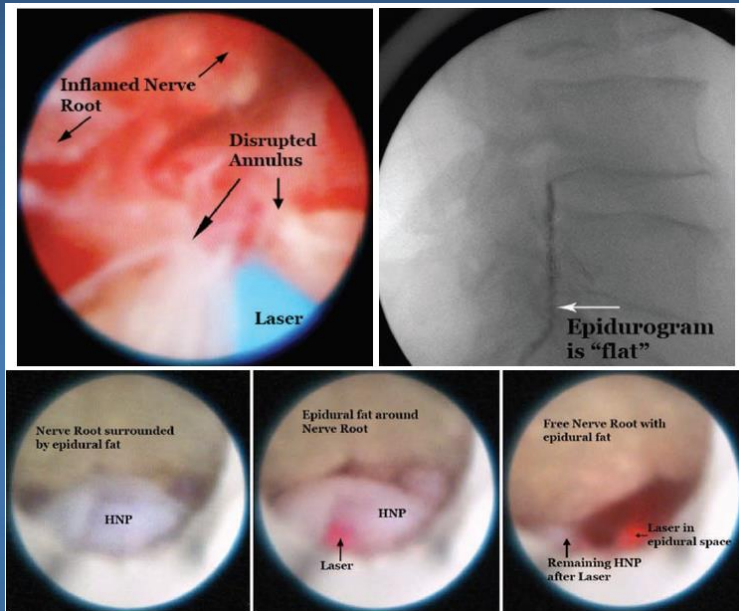
Conclusions: Nucleoplasty and Dekompessor have a weak positive recommendation for the treatment of patients with lumbar radicular pain. There is no role for provocative discography in this group of patients, although the evidence for a selective nerve root injection or an intra-op discogram is inconclusive. ■

Advantages of Direct Visualization

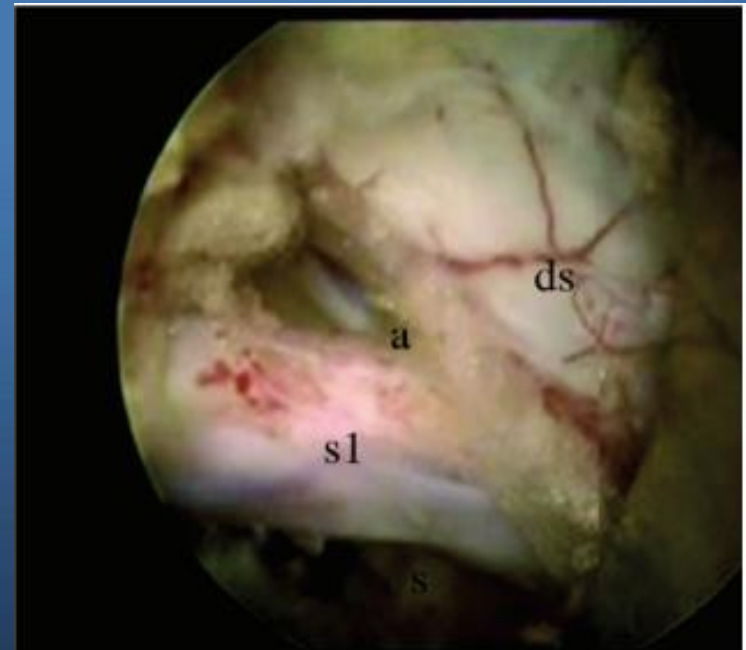
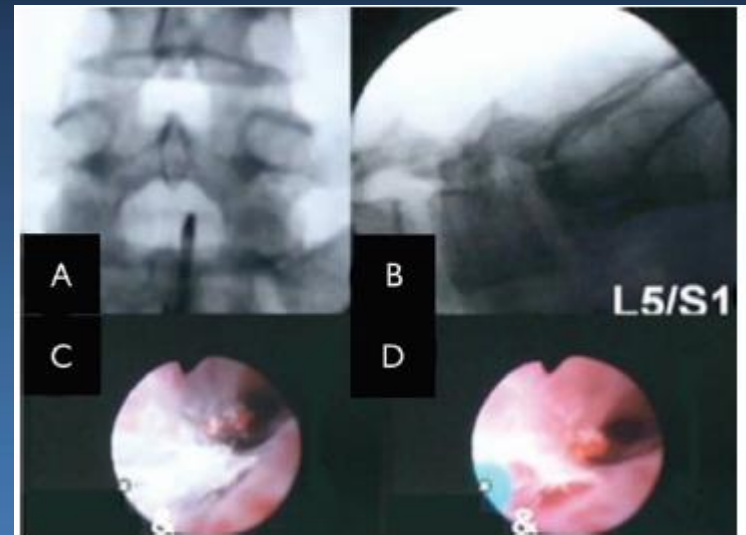
- *Tiny incision*
- *Direct access to pathology*
- *Visual diagnosis of pain source*
- *Earlier treatment*
- *Potential for immediate relief*
- *Less chance for recurrence*
- *Minimal scarring*
- *Multiple levels, one entrance*



Kim, et al. 2011.



Richter, et al. 2011.



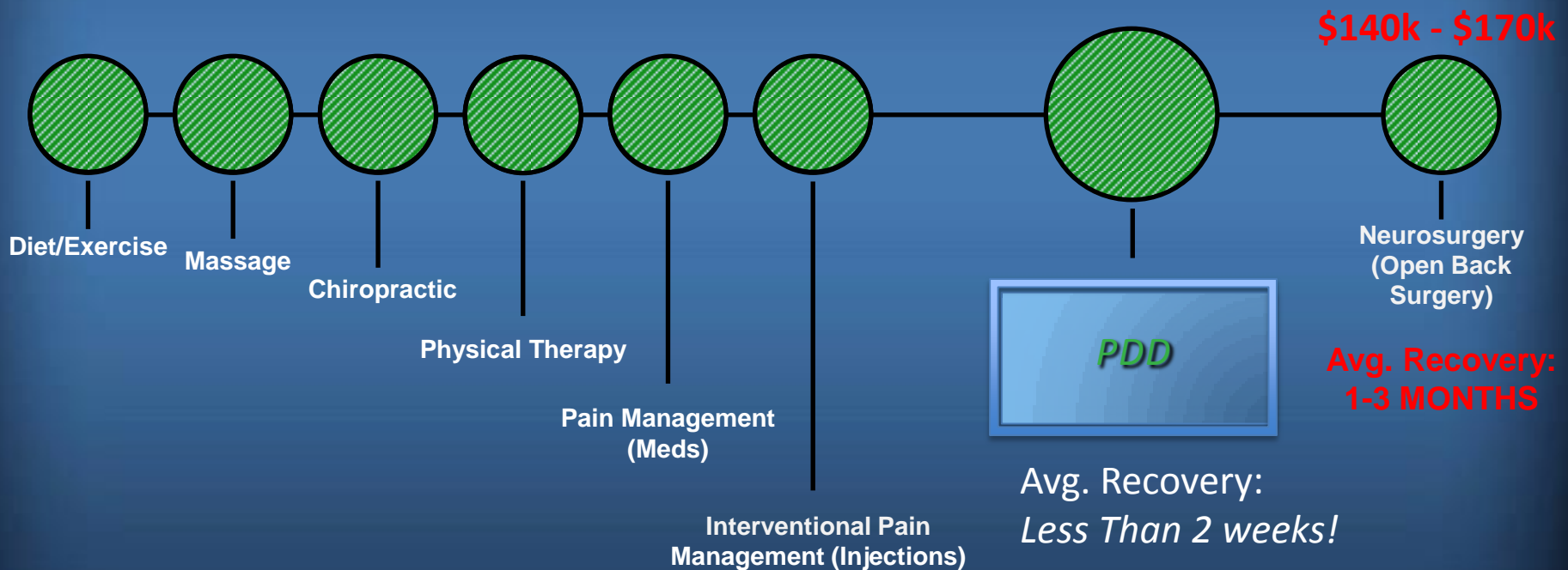
Anichini, et al. 2015.

Watch and Wait?

- *Your body becomes increasingly sensitive to pain*
- *Your perception of pain is intensified*
- *You risk permanent nerve and tissue damage*
- *Your scar tissue builds up and restricts range of motion*
- *Ignoring or masking your pain is harmful*

Continuum of Care

Where does *PDD* fit in care strategy?



Summary

- ✓ Over 7,000 surgeries performed
- ✓ **Over 90% Success Rate** (vs. Open Back Surgery's 50%)
- ✓ **Recovery: Less Than 2 weeks!** (vs. Open Back Surgery 1-3 Months)
- ✓ **HALF the cost** of Open Back Surgery
- ✓ NO Hardware, nuts, bolts, screws.
- ✓ Outpatient procedure – Patients Released Same Day post surgery!
- ✓ Dynamic pain mapping
- ✓ No more guessing based off nebulous MRI

THANK YOU!