

# Best Practices in Lower Back Treatment

Chairperson: Dr. Chadi Tannoury

Tuesday, March 26<sup>th</sup> 2019

9:00 – 9:55 am

*Work Related Injuries Workshop  
March 25<sup>th</sup> & 26<sup>th</sup>, 2019*

# Shared Decision Making and Improving Patient LBP Treatment Discussions



Michael Erdil MD, FACOEM  
Physician OEHN

Asst Clinical Professor UConn Health DOEM

Reviewer, Medical Advisory Board AHCPR LBP, ACOEM OMPG, ODG TWC

Topic Author UpToDate Occ LBP, DynaMed Plus Chronic LBP

Senior Medical Advisor UConn RETAIN CT US DOL ODEP SAW/RTW Grant



**UCONN** HEALTH

*Work Related Injuries Workshop  
March 25<sup>th</sup> & 26<sup>th</sup>, 2019*



## Spine Surgery Gaps / Challenges

- Lack of consensus diagnostic tests lumbar spine degenerative disease Willems BMJ 2011
- Spine surgery degenerative disease lowest QoL benefit among elective ortho surgeries Hansson Spine 2008
- Gaps in patient education risks Ellamushi Ann R Coll Surg 2000
- Pts may be over-optimistic re: pain and function improvement Mannion Spine 2009
- Surgeons may be over-optimistic Graz Spine 2005
- Satisfaction correlates poorly with QoL measures Godil Spine J 2013





# Patient Education and Shared Decision Making (SDM)

- Patients deserve education re: evidence based care options / alternatives, benefits / outcomes vs. risks, costs
- SDM option differs from informed consent: SDM involves collaborative process between patient and healthcare provider
  - “Patient preference sensitive care”
  - Diagnostic and treatment decisions made together; often use decision aids; may use health coaches
  - Reflects patient goals, values and preferences

# Shared Decision Making



search ID: ear0706



## SDM Evidence

- Systematic review: Stacey Cochrane 2017 105 RCTs of decision aids vs. usual care
  - ↑ patient knowledge, ↑ risk perceptions, esp if detailed probabilities or numbers
  - ↑ patients receive care consistent with values
  - ↑ patients opt conservative care, ↓ elective surgery
  - Inconclusive effect: cost, resource use, ↑ outcomes
- Spine care (non-urgent)
  - PMR Consult / SDM, EBM Fox Spine 2013 referrals ↓48.3%, imaging ↓17.7%, surgical procedures ↓29.2%, spine care costs ↓12.1%

# Evidence Summary Lumbar Discectomy for Disc Herniation

- **Surgery vs non-op 3 RCTs** Osterman Spine 2006, Weinstein Spine 2006, Peul NEJM 2007
  - Early advantage surgery for sciatic pain though both improve
  - Near similar long term (e.g. 2 yr) pain, function, disability, though small surgery advantage
    - Surgery: no advantage RTW
  - Reoperation 3-10%
  - Surgical complications 1-5%
  - SPORT 4 yr small surgery advantage Weinstein Spine 2008; both groups stable 4-8 yrs Lurie Spine 2013





## Back Treatment Outcomes Calculator

This calculator computes the chances of reaching treatment goals for three specific lower back problems with either surgery or non-operative treatment. It provides personalized outcome predictions based on a large national study, the Dartmouth Spine Patient Outcome Research Trial (SPORT).



### Sciatica/Slipped Disc (Herniated Disc)

A spinal disc is a soft gel-like structure with a strong covering that sits between each vertebra in your back and acts like a cushion. Sometimes the covering gets weak and the gel can poke out against a nerve. This causes pain that most often runs from your back through your buttocks and down your leg.



### Spinal Stenosis

This is from arthritis in the back that narrows the spaces around the nerves. Along with pain in the lower back there is also pain in one or both legs when walking. The pain usually improves with sitting down or bending forward.



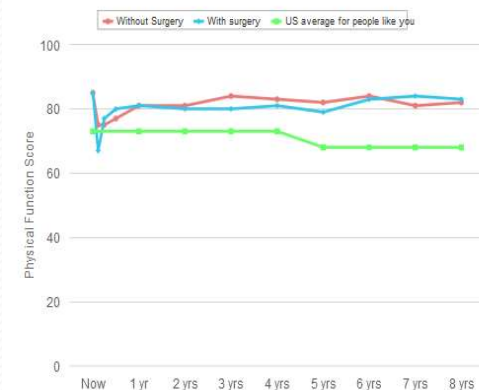
### Slipped Vertebra (Degenerative Spondylolisthesis)

This is a condition in which one or more vertebrae move out of place, usually forward, and cause pain similar to that felt with spinal stenosis (see above).

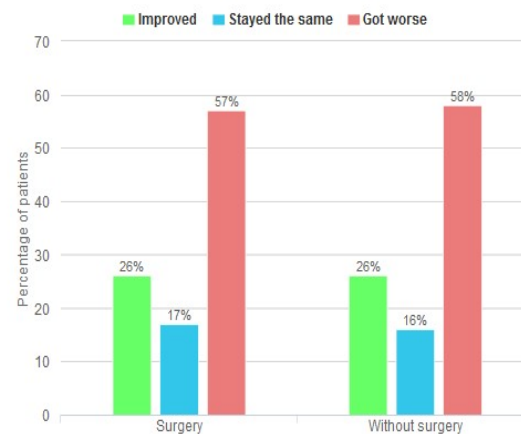
### Physical Functioning

Your ability to be physically active over time

Better

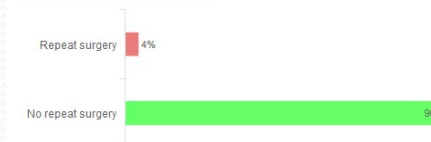


### Patient outcomes after 1 year

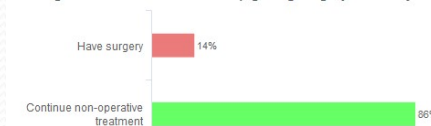


### Treatment Risks

Among people like you initially choosing surgery, some ended up getting repeat surgery within 2 years



Among people like you initially choosing non-operative treatment, some changed their minds and ended up getting surgery within 2 years



<http://spinesurgerycalc.dartmouth.edu/calc/>





# Lumbar Fusion Evidence / Gaps

- Evidence based option ACOEM LBP 2016, ODG
  - Symptomatic instability
  - Repeat decompression for disc herniation causing instability
  - Fracture; Significant, progressive scoliosis; Tumor; Select cases with infection
- Limited evidence Chronic LBP Degenerative Disc Disease (DDD) and “discogenic pain”
  - Need for improved patient informed / shared decision making: preferences on risk vs. benefit, outcomes, options
  - 380,000 surgeries LS DDD 2000-9 Yoshihara Spine J 2015
    - 2.4 x ↑ incidence 2009

# Evidence Summary / Advice Fusion for LBP

## DDD Absent Indication

- Therapeutic exercise / CBT as effective as lumbar fusion with less risks
- Fusion outcomes
  - Rare to be pain free, up to 1/2 may not experience significant ↓ pain, 70% continue treating
  - 2/3 WC disabled at 2 years; mod functional limitations
  - Post-op LT opioids 63-85%, MED ↑ 41% and contribute to deaths in WC
- Fusion risks
  - Complications up to 9-18%
  - Repeat operation up to 22-27%
- Brox Spine 2003 / Pain 2006, Fairbank BMJ 2005, Franklin Spine 1994, Juratli Spine 2006, Nguyen Spine 2011, Mannion Spine J 2013 / 2016, Mino J Sp Surg 2017





## MINNESOTA DEPARTMENT OF LABOR & INDUSTRY

### What injured workers should know about lumbar fusion surgery as a treatment for degenerative disc disease

#### What are the results of lumbar fusion for injured workers with chronic low back pain and degenerative disc disease?

You might want to consider and discuss the following information<sup>1</sup> with your physician before making a decision about whether you will proceed with surgery.

- Studies of injured workers show about half of them get better after the surgery. However, up to one-third of patients report a “poor” result.
- In some studies, when lumbar fusion is compared to other treatments, patients who receive a fusion do better than those who just continue to get the same treatment they were already receiving. However, in other studies, patients who were referred for intensive medical management and interdisciplinary rehabilitation did as well as those who had fusion surgery.
- Ten to 20 percent of patients develop complications from the surgery. Complications include infection, deep vein thrombosis, pulmonary embolism, nerve injuries and problems with bone grafts or implanted devices.
- About one in every four injured workers who have a lumbar fusion will have another lumbar surgery. Subsequent surgeries are often done because the fusion doesn’t “take” (become solid) or the hardware used in the fusion becomes a problem; or, because the spine above or below the fusion starts to deteriorate, causing more pain and disability.
- Most injured workers who are disabled by their back pain remain disabled after their fusion surgery, with fewer than 50 percent returning to work.
- Most injured workers continue to use strong pain medication after their surgery; some even require more medication.

[http://www.dli.mn.gov/WC/Pdf/fact\\_sheet\\_lumbar\\_fusion.pdf](http://www.dli.mn.gov/WC/Pdf/fact_sheet_lumbar_fusion.pdf)





## **What You Should Know About Lumbar Fusion Surgery**

(Applies to all workers considering lumbar fusion, regardless of diagnosis)

Labor & Industries (the department) has created this information form so you will know how lumbar fusion surgery may affect your health and recovery. The department requires your doctor to discuss this information with you before the surgery so you can make the best decision possible. After you have read and discussed this information, both you and your doctor should sign your names at the end of this form. **This is NOT a surgical consent form.**

**Studies<sup>3-5</sup>** conducted by researchers at the University of Washington showed that in Washington State workers:

1. About two out of three workers who receive a lumbar fusion are still disabled two years later.
2. More than half of the workers who received lumbar fusion felt that neither their pain nor their ability to function were better after the surgery.
3. Almost one out of four workers who had fusion surgery received another operation within two years
4. If a fusion was redone, the chances of being disabled 2 years later increased by 25%.
5. Smoking at the time of fusion greatly increases the risk of failed fusion<sup>1,2</sup>.
6. The use of spine stabilization hardware (metal devices) in Washington State workers nearly doubled the chances of needing another surgery.
7. Pain relief, even when present, is not likely to be complete
8. Some lumbar fusion patients have died while taking pain medicine following surgery. Most of these deaths were linked with taking opioids (narcotics). The chances of dying were even higher for those whose fusion was for degenerative disc disease or who had a fusion at more than one vertebral level.

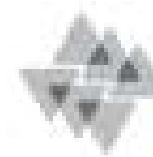
<http://www.lni.wa.gov/ClaimsIns/Files/OMD/MedTreat/LumbarfusionUpdate020216.pdf>





## Choosing Wisely Australia

An initiative of the Australian Medical Association



**FPM**

FACULTY OF FIRM MEDICINE  
ANZCA

5

### **Do not refer axial lower lumbar back pain for spinal fusion surgery**

Chronic low back pain (CLBP) that is not due to underlying disease (infection, cancer) and is not associated with neurological signs is a common problem that is difficult to treat.

Historically, lumbar spinal fusion was used for the treatment of demonstrated spinal instability following trauma or cancer. More recently, lumbar spinal fusion has been used for leg pain attributed to an underlying structural change such as spinal stenosis or spondylolisthesis.

Spinal fusion has been proposed as a treatment for uncomplicated axial CLBP. The rationale for it is elusive, as accurate determination of a single source of the pain, especially when central sensitisation may have occurred, is not usually possible. Though some positive studies have been reported, pooled data from multiple randomised trials do not provide support for performing spinal fusion surgery in preference to non-operative treatment. In the absence of adequate rationale and compelling new evidence, lumbar spinal fusion is not recommended for treatment of uncomplicated axial CLBP.

<http://www.choosingwisely.org.au/getmedia/590c4e81-a8a9-47eb-b78c-b8doba2e9fca/CW-FPM-Recommendations.pdf.aspx>

# Lumbar Spine Case



**Chadi Tannoury, MD**

Medical Director, Orthopedics

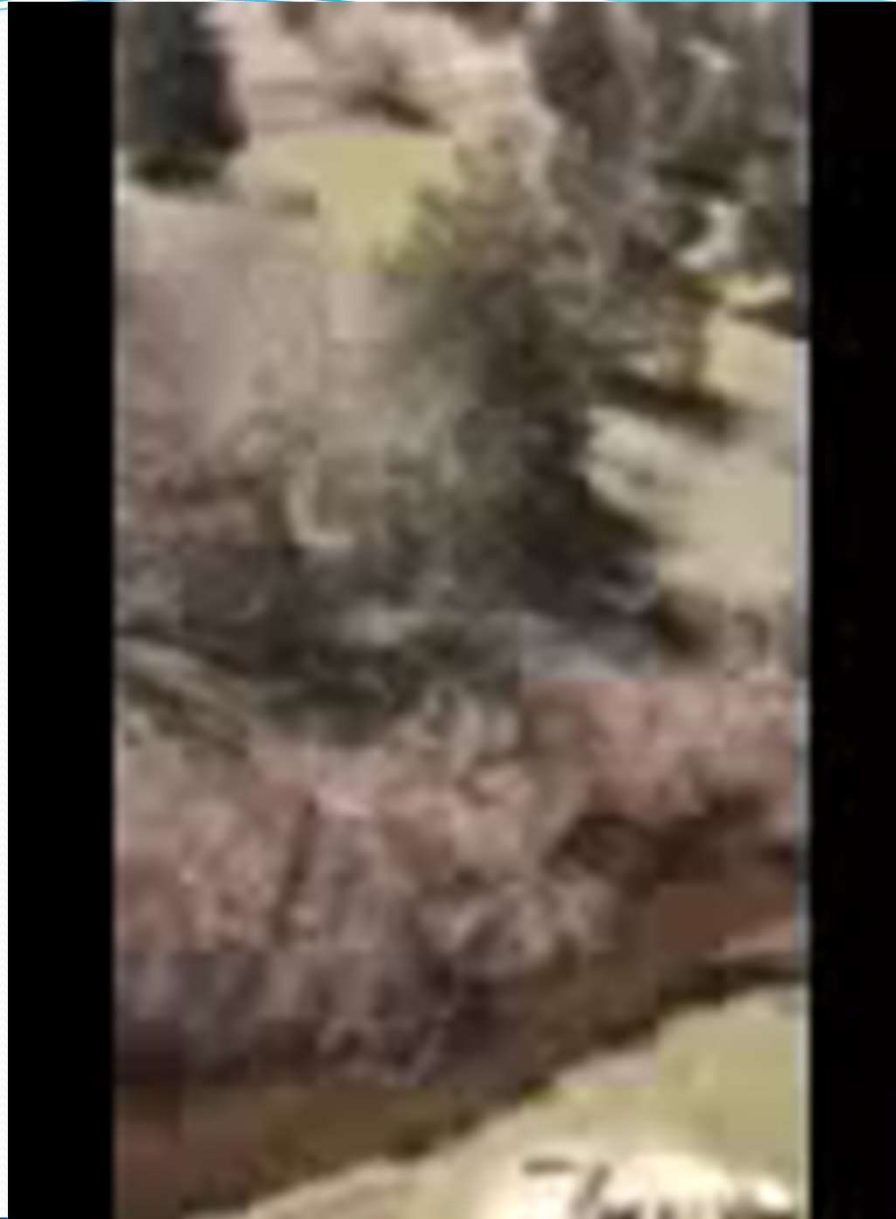
Director, Spine Research

Assistant Professor, Orthopedic Spine Surgery

Boston University Medical Center

*Work Related Injuries Workshop  
March 25<sup>th</sup> & 26<sup>th</sup>, 2019*





# 45 y Male - Landscaper

- June 2016: Fell off a tree while trimming branches
- CC:
  - Neck pain radiating to upper extremity
  - To a lesser degree, LBP
- Rx:
  - PT
  - NSAIDs
  - Muscle Relaxants



# 3 months Conservative Rx: Failed!

## September 2016





# RTW

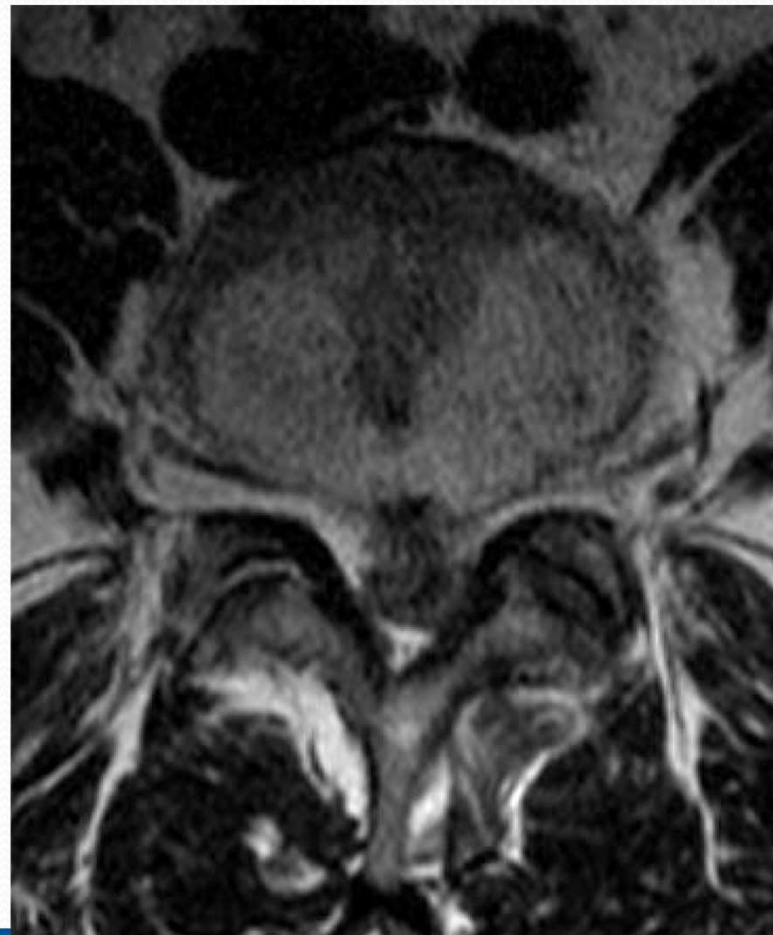
- November 2016 (2 mo): Light duty
- January 2017 (4 mo): Full duty
- March 2017 (6 mo):
  - Increased “Axial Back Pain” with activity
  - PE: Neuro intact
    - PT – NSAIDs – Muscle Relaxant.
    - Pain waxing + waning



# Follow-up

- May 2017 (8 months):
  - Getting in his truck his way to work: Sudden sciatica
  - CC:
    - Radiculopathy bilateral lower extremities
    - Neurogenic claudication
    - Intact B&B function
  - PE:
    - SLR ++
    - 3+/5 weakness in bilateral EHL/Tib Ant

# MRI

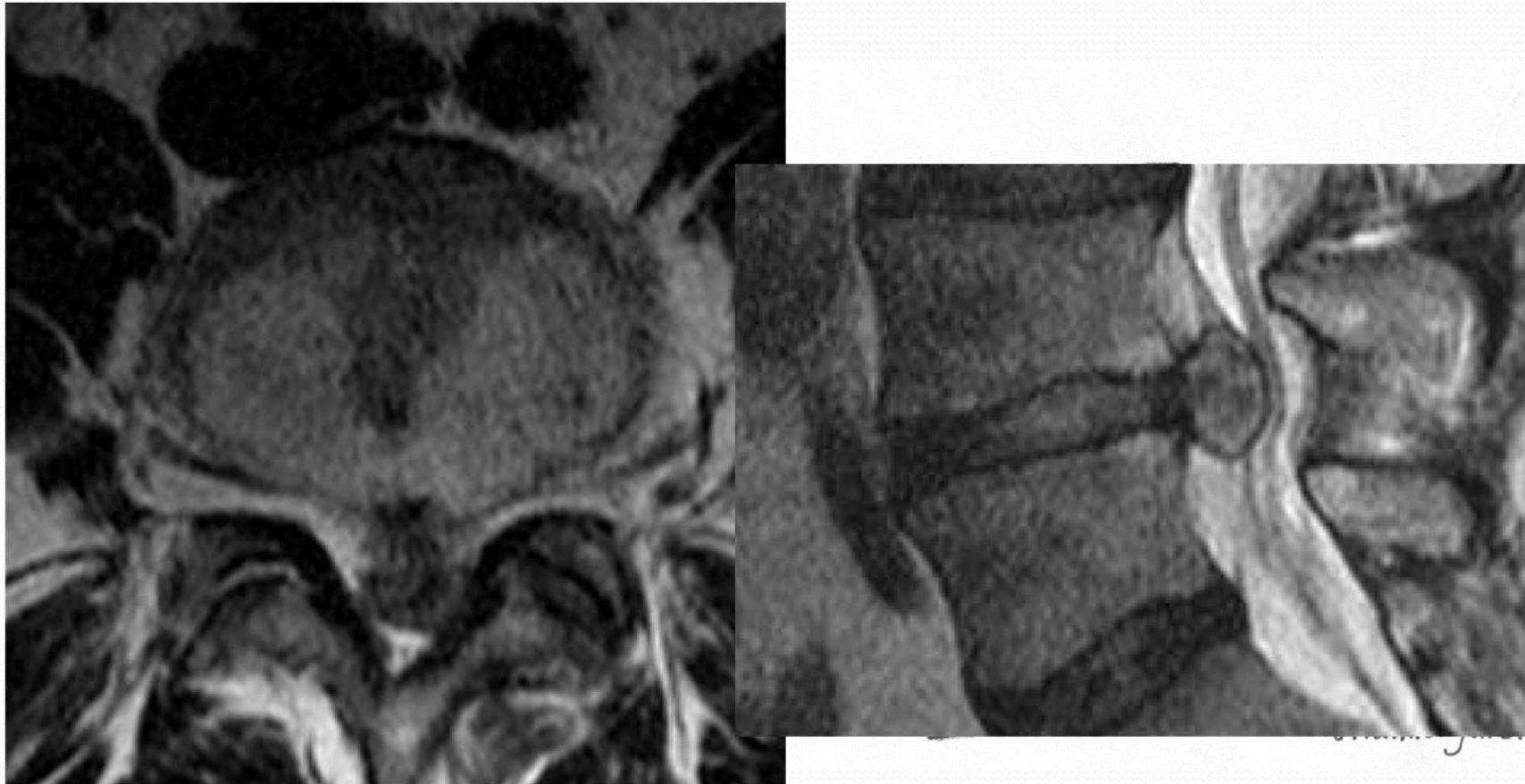




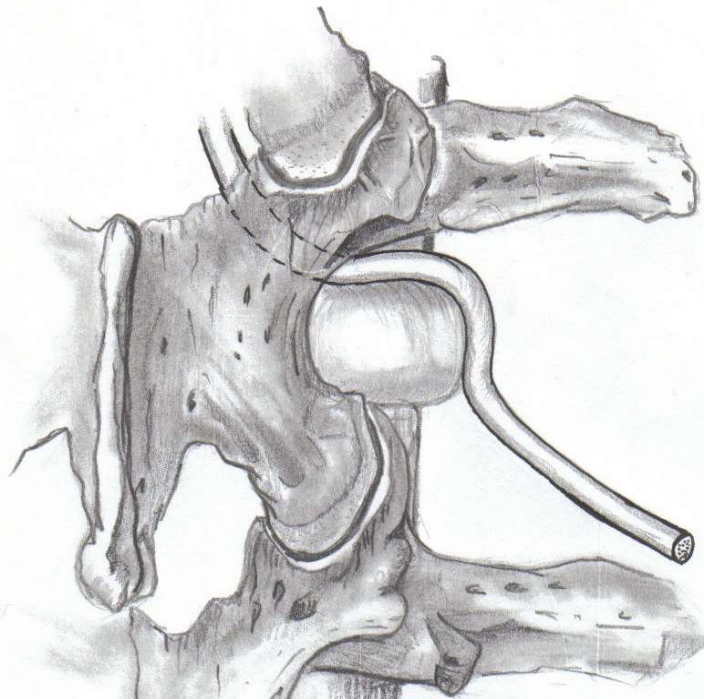
# Discussion

- Diagnosis?
- Is this considered a WC case?
- Role for meds, PT?
- Role for Pain Management?
- Role for Surgery?
- Role for shared decision making?
- What if exam noted normal motor strength?

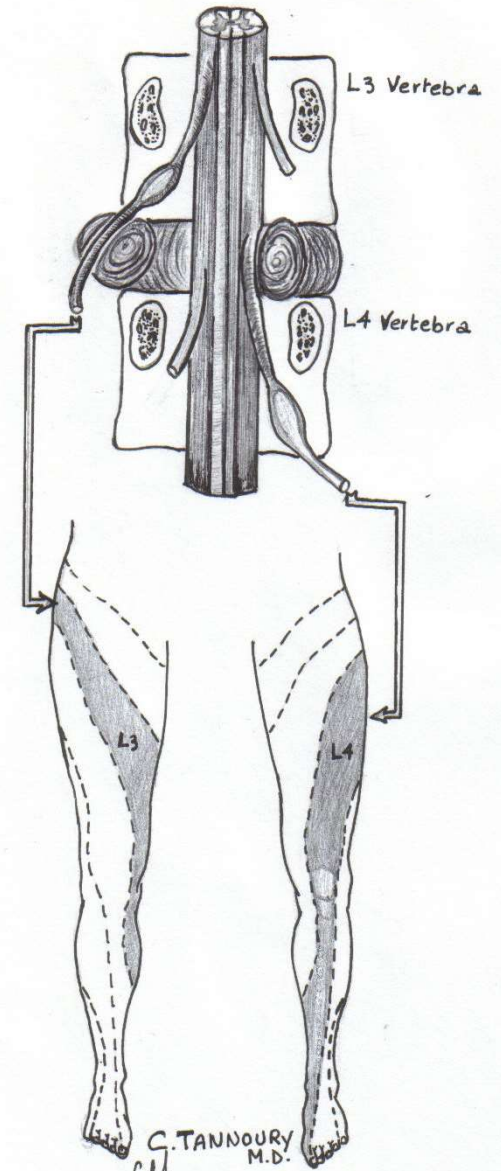
# What is a disc herniation?







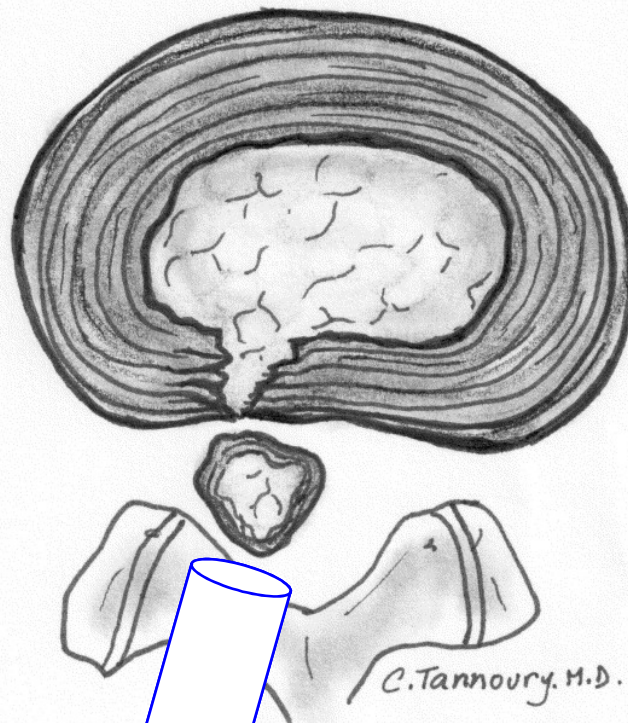
C. TANNOURY  
M.D.



C. TANNOURY  
M.D.

# The aim of surgery

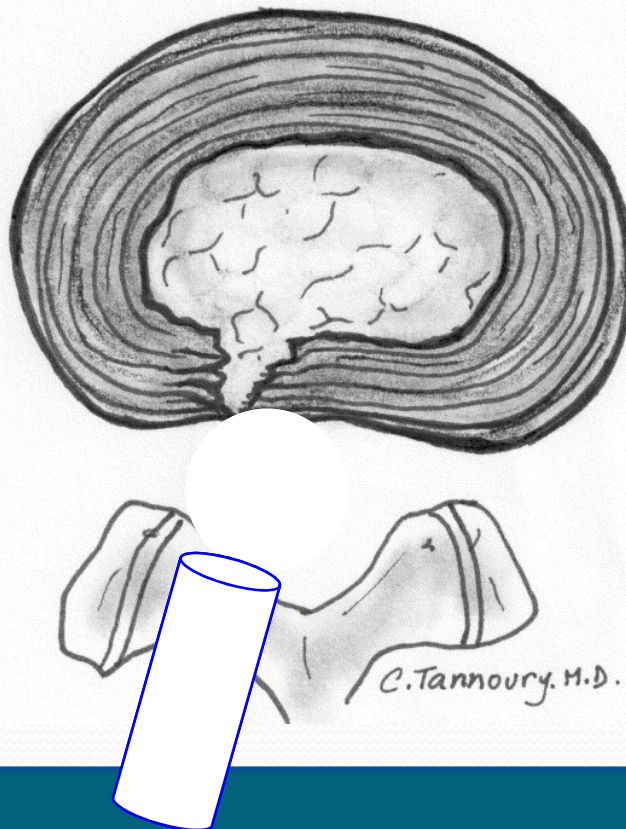
- Remove the pressure off the nerve



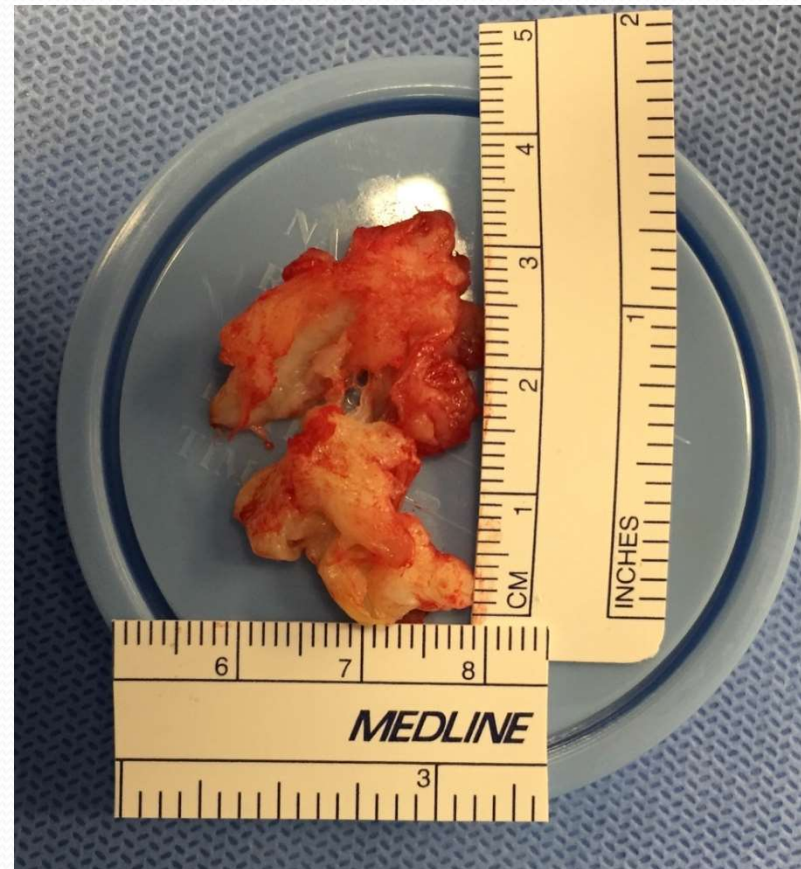
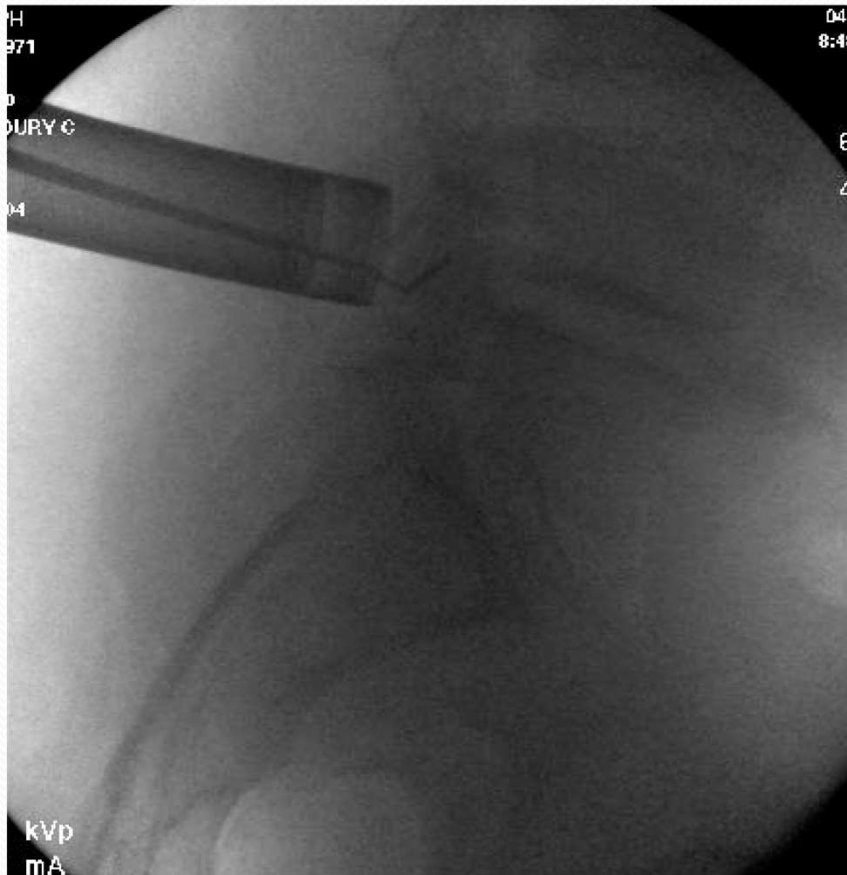


# The aim of surgery

- Remove the pressure off the nerve



# June 2017





# Postop

- Postop 1 month: Light duty
- Postop 3 months....

