

Is The Pain Discogenic ?

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Problems

- MRI shows degeneration without pain
- Pain can be referred to low back from elsewhere
- Psychogenic factors
- Discography – not 100% accurate
- Multiple pain sources: Disc, Facet, Nerves etc.



Other sources of spinal referred pain

- Abdominal Aneurysm
- Pelvic Inflammatory Disease
- Pancreatic Lesion
- Gastric Ulcer
- Ovarian cyst



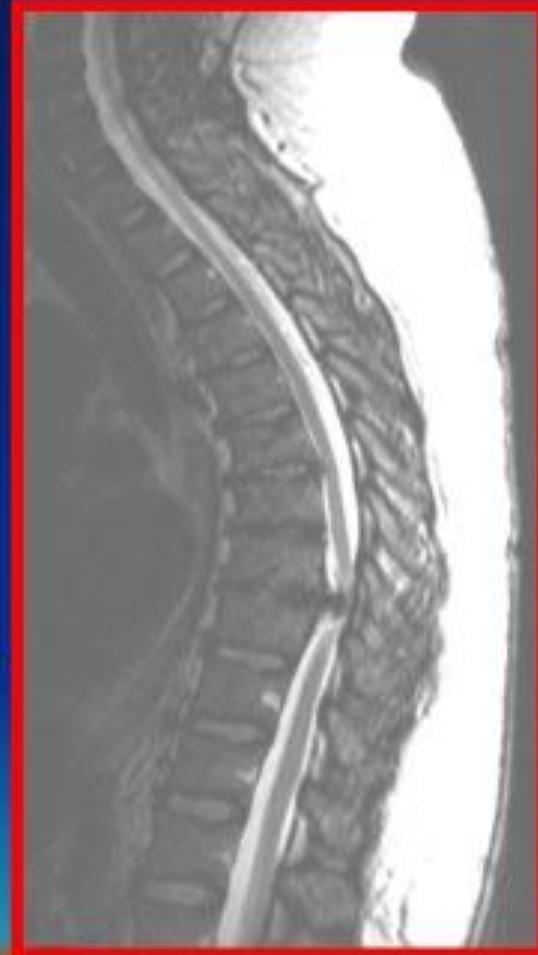
Thoracic Disc



M= 48

**C/o LBP and Bilateral
Leg pain**

**Diagnosed as Cauda
Equina caused by L5/S1
Disc Lesion**



Abdomen

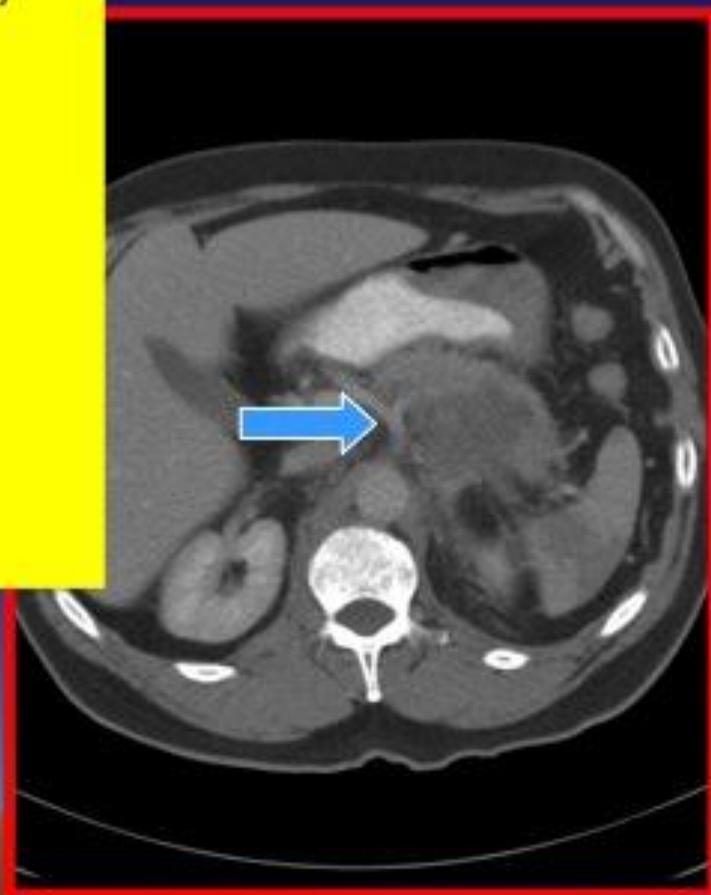
M=65

**c/o Low back pain,
referred to Iliac
Crest area**

MRI- L5/S1 DDD

Loss of Apetite

**CT- Pacreatic
Tumour**



M. 62.



10 year h/o severe Low back Pain(VAS=8/10).

DDD L23 and L34

Physio

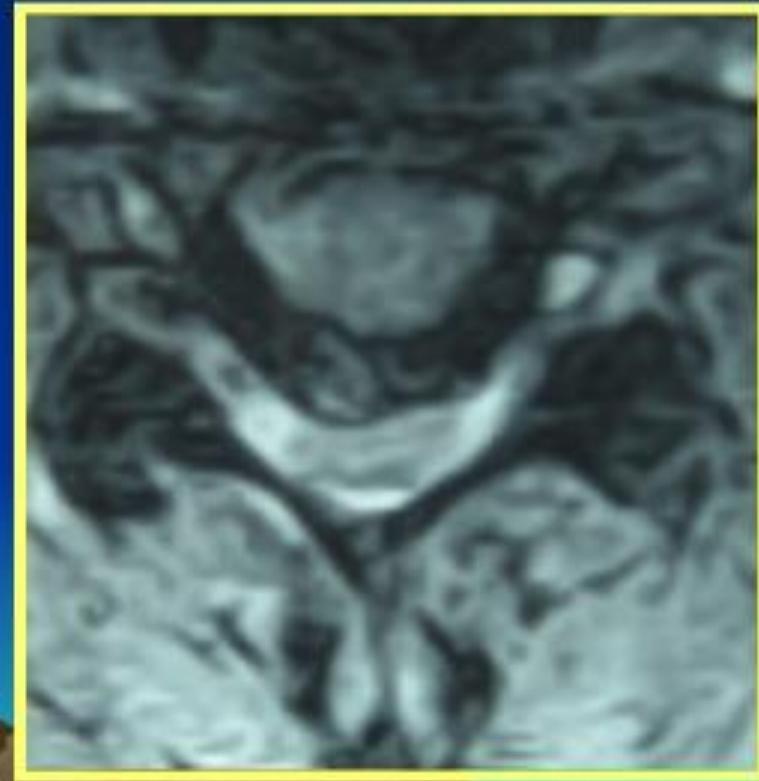
Facet Injections

Rehab Program

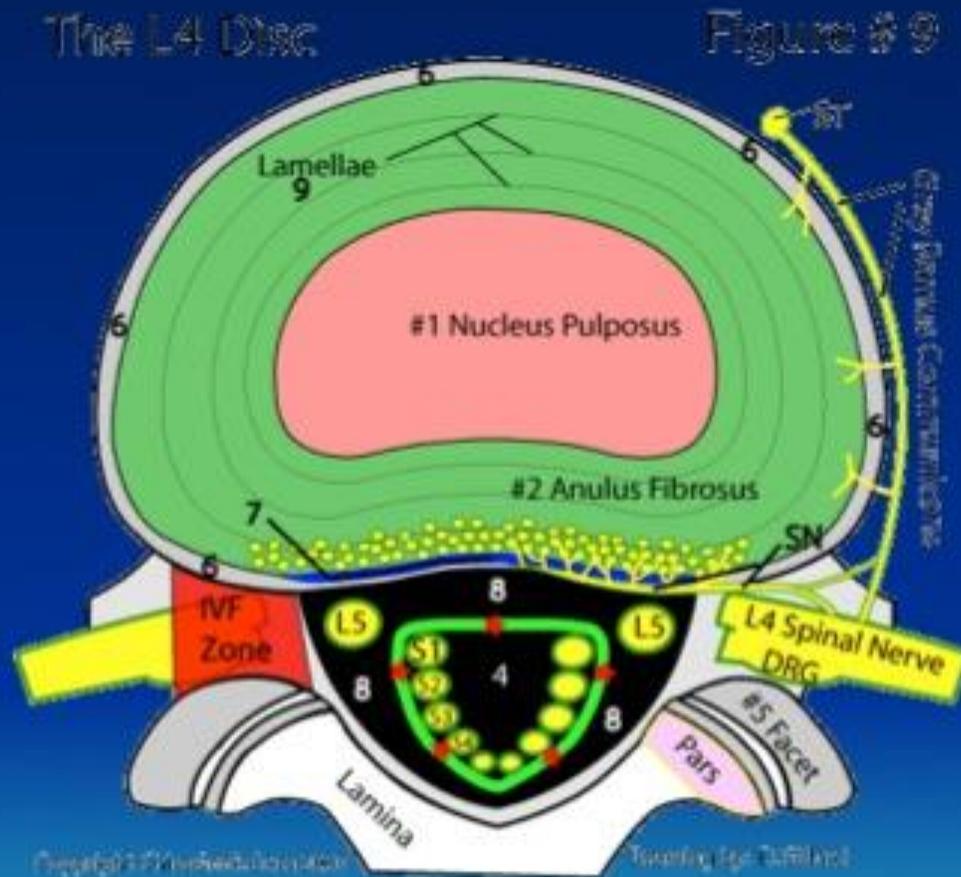
All no good

A Positive Hoffman's reflex on examination.

M 62. C5/6 Cord Compression. No
Neck pain.
LBP disappeared after C5/6 fusion



2 Pain Pathways



1. Via Sympathetic Trunk into L2 Dorsal Root Ganglion(DRG)
2. Via DRG at that level (Segmental)

Sinuvertebral nerve innervates posterior disc

Stimulation of the Sinuvertebral Nerve can cause Leg Pain(Discogenic leg Pain)

Pathophysiology

- Granulation tissue and nerves grow into annular tears in posterior disc
- Concentration of inflammatory markers in disc- Interleukins, Tumor Necrosis factor
- Mechanical and Chemical triggers of Nociceptors in disc



Granulation Tissue with Nerves grows into back of disc



Not all degenerate discs are painful

Not all painful discs are degenerate

Rx Options

- Treat Biology and Mechanics for best results
- Remove pain generator
- Restore loading
- Interbody Fusion: ALIF or PLIF/TLIF
- Disc Replacement: Anterior or Posterior



Discography

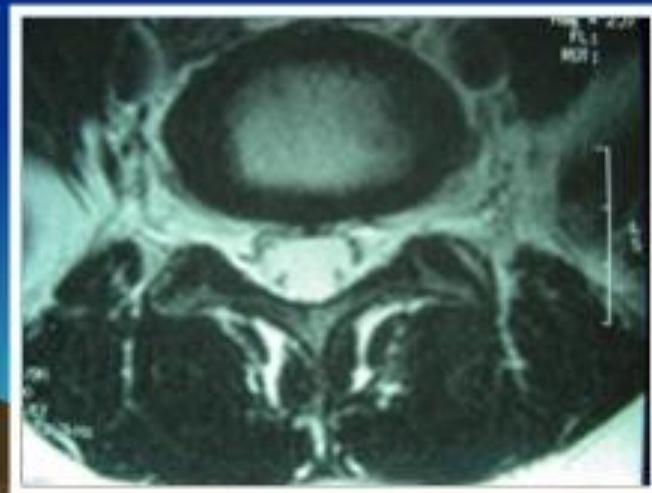
- Provocative Discography
- Analgesic Discography
- Functional Analgesic Discography(Todd Alamin)
- Follow International Spine Intervention Society (ISIS) guidelines



AA. M=16. C/o LBP x 3 years.

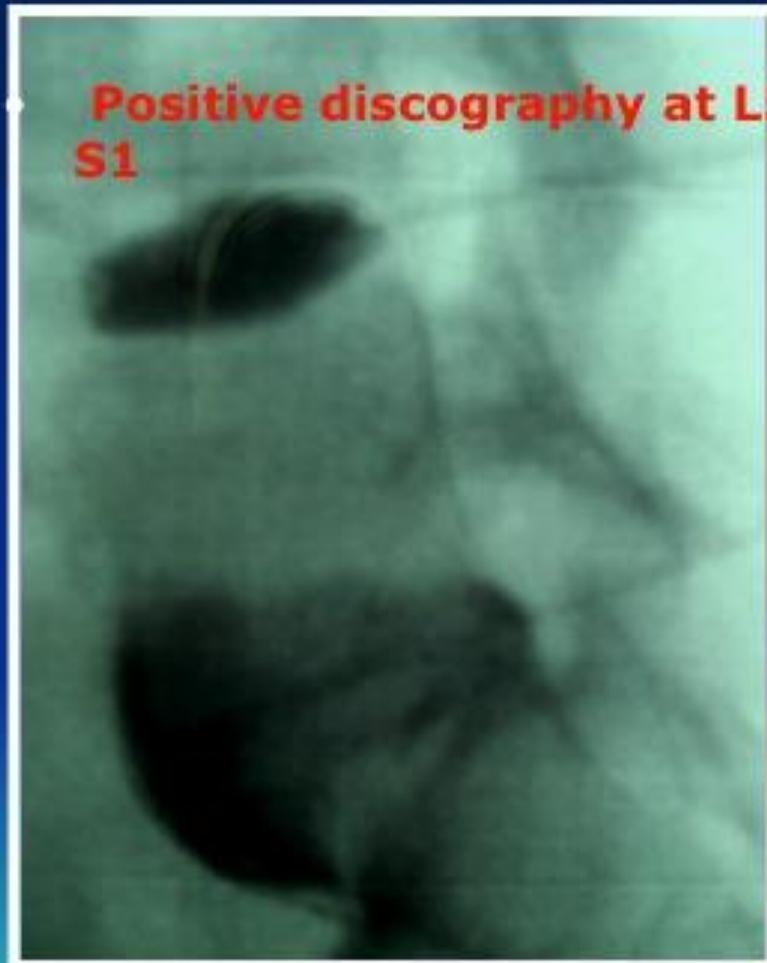


- Cannot go to school
- Seen Psychiatrist- all clear
- Locally tender at L5/S1
- Many courses of Physiotherapy.



?? cause

AA. M=16. LBP x 3 years



Complete Relief of Back Pain
NOT ALL PAINFUL DISCS ARE DEGENERATE

Discography False Negative



- No pressure- dye leaks out of disc
- Needle in outer annulus, not in centre
- Sedation too deep

Discography False Positive



- Chronic pain syndrome
- High Pressure Inj.
- Somatoform disorder
- <10 % of degenerate discs without pain

I use it when diagnosis in doubt and disc does not look too degenerate

Always check a L5/S1 disc below a L4/5 degenerate disc

Non-compressive Discogenic Leg pain

- Severe leg pain
- Aggravated on sitting
- No neural compression

- Caused by referred pain from
Sinuvertebral Nerve



PC. F. 12/64 Nurse



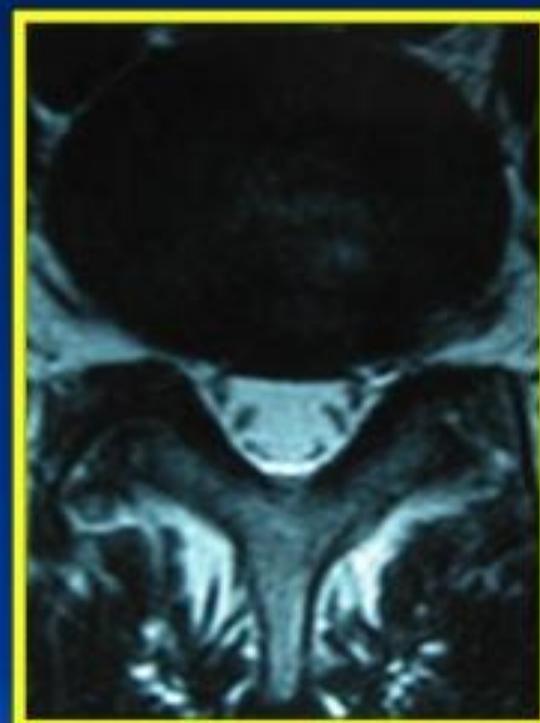
**C/o some LBP and
severe Left Leg Pain
since 3 years.**

Left leg:

Numbness

Coldness

Weakness



**Left L45 Nerve Root
block eased pain**

PC. F. 12/64 Nurse

**March 2002: L4/5
PLIF**

LBP : 80% better.

Leg pain: Gone

Returned to work



Why Disc Replacement?

- Remove Pain Source
- Restore Anterior Column Loading
- Prevent adjacent segment failure
- Allow lordosis to change in flexion and extension



3 Limitations of Anterior Lumbar Arthroplasty



Untreated facets a problem



Revision is dangerous

Applicable to only 5-7% of patients.

Cammisa et al

Posterior Lumbar Arthroplasty

- Replaces Disc and Facet Joints in one operation
- Posterior paired disc with a matching paired dynamic stabilizer
- Deals with all pain generators
- Easy approach
- Can be easily revised

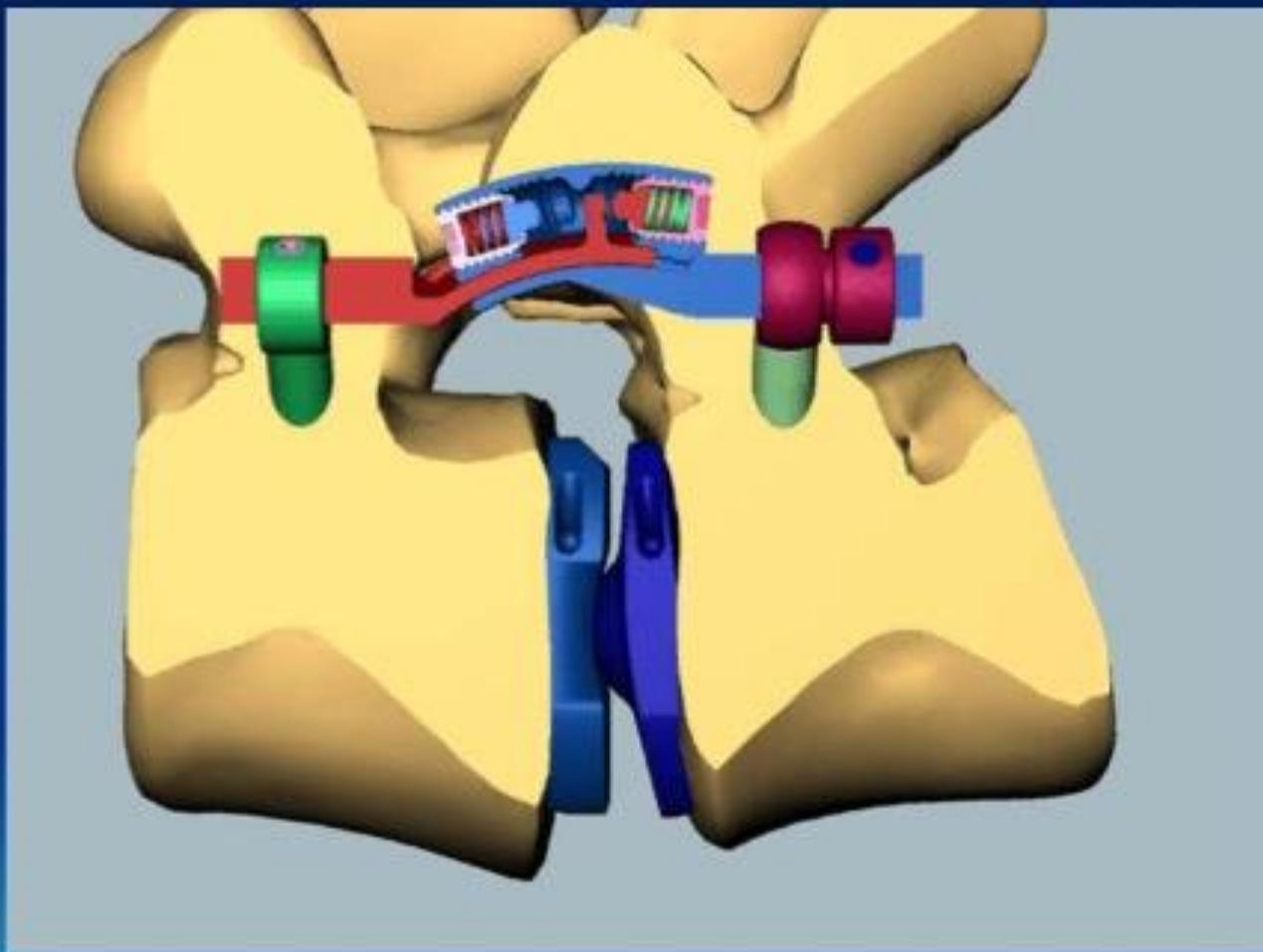


InLign™ TMS (Total Motion Segment)

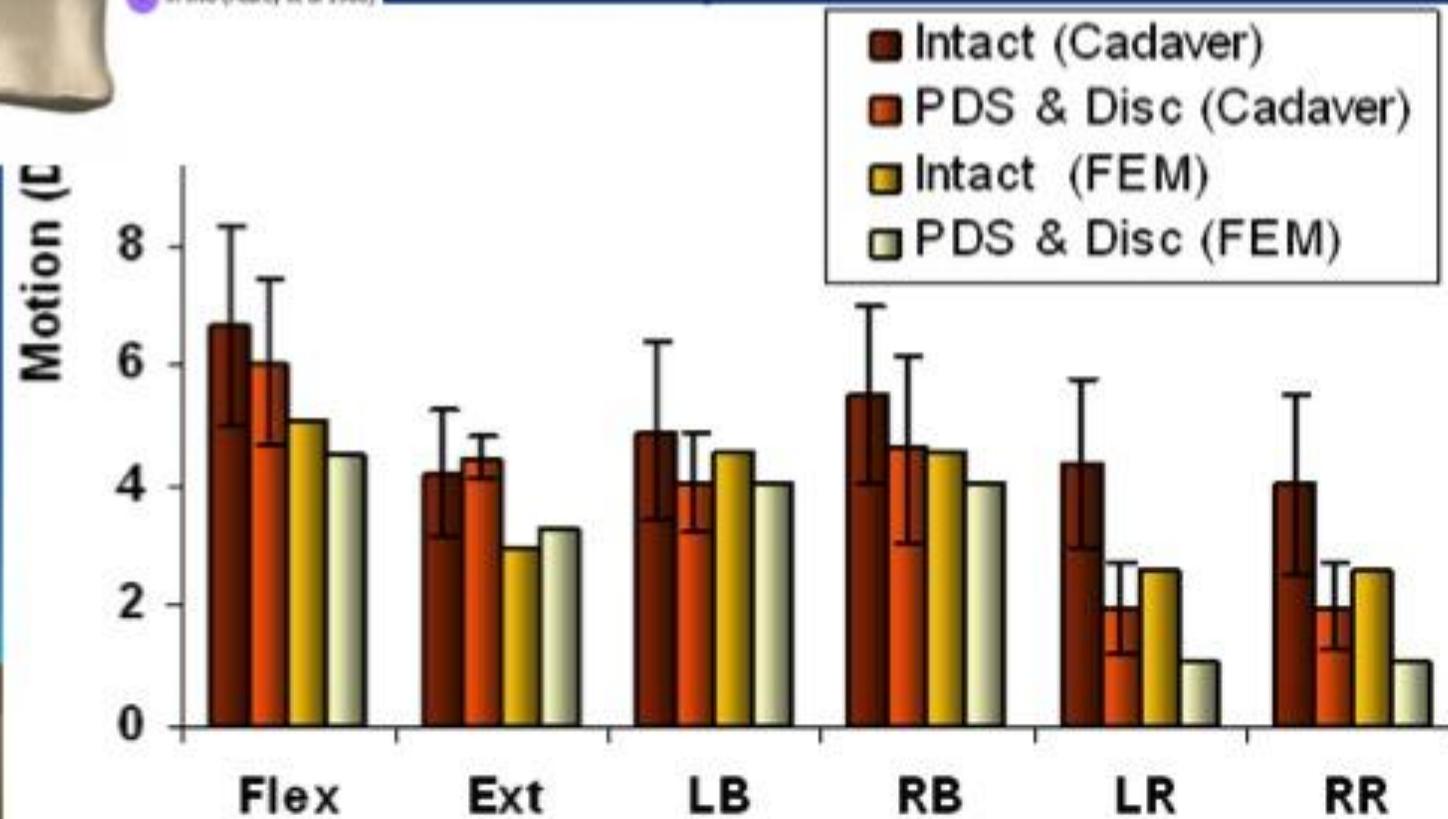
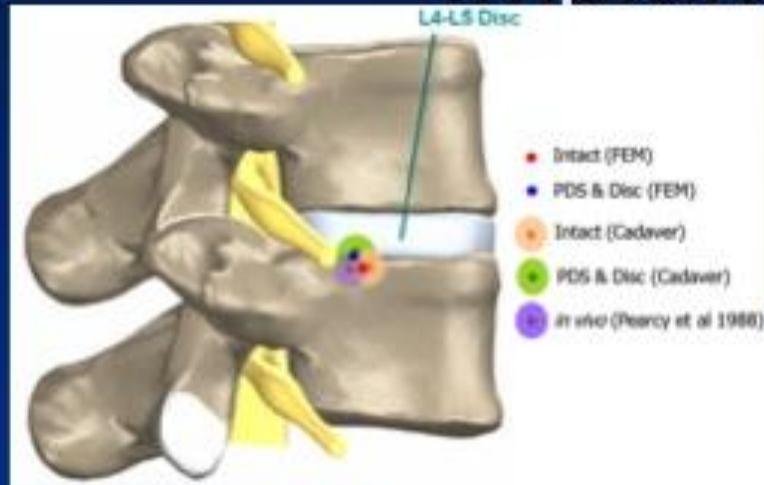
The first patented posterior lumbar spinal arthroplasty SYSTEM that preserves motion and addresses all of the pain generators in the motion segment; the disc, the facets and the neural components.



Animation



Motion and Ext-Flex COR at Implanted Segment



Early Clinical Results

	PRE- OP	POST -OP
OSWESTRY	56	32
VAS-LBP	7.8	2.7

- **N=25**
- **5 centres in 4 countries**
- **Longest follow-up 12 months**
- **2 cases with neuropraxia – settled**
- **No device failure**

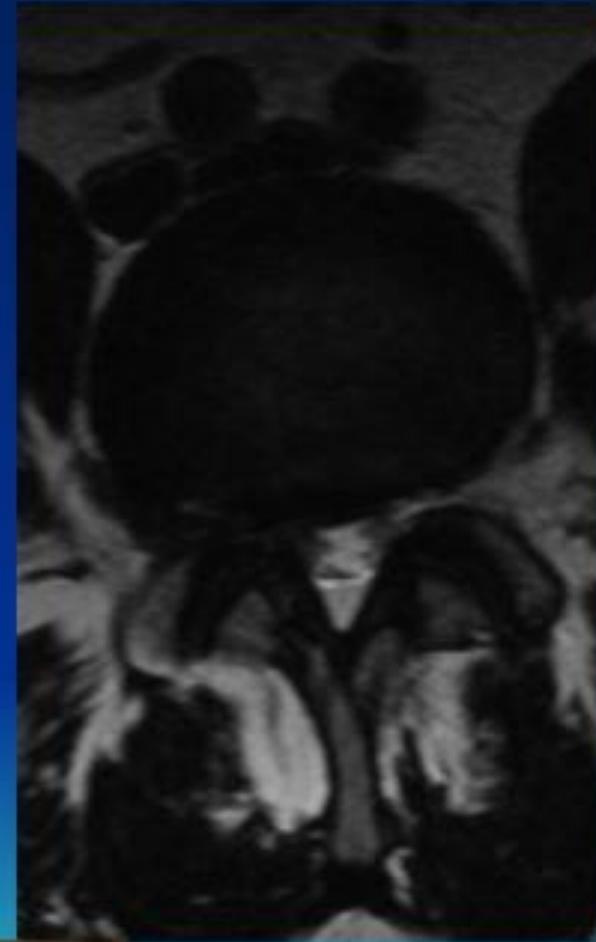
Isolated DDD L45 with Right sided Disc Prolapse



•M=45

•10 year history of low
back pain and right leg
pain

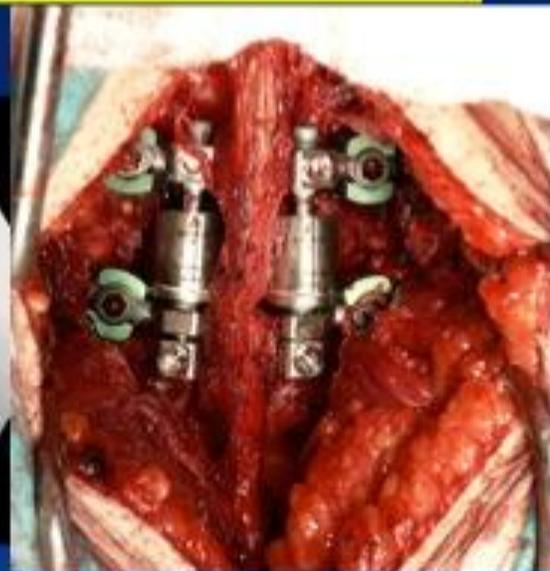
•Failed conservative
treatment



Post-op

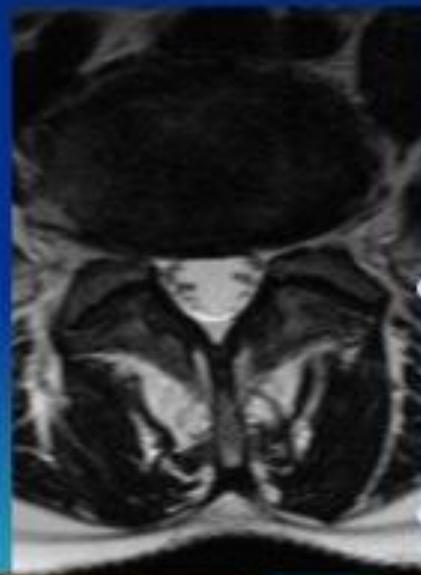
OSWESTRY: Pre-op 74, Post-op 20

VAS LBP: Pre-op 9, Post-op 1



Discharged 2 days post-op. Said Pre-op LBP and Leg Pain had gone.

Case Study



- **45. Female**
- **Chronic low back pain for 5 years**
- **Radiating pain to lower limbs on & off**
- **OSW-82, VAS-9**
- **No Neurological deficit**

Post op X Ray



OSWESTRY- 82 pre-op , 4 – post-op

VAS LBP- 9 pre-op, 1 post-op



Tips

- Rule out other sources of pain
- Rule out psychogenic causes
- Clinical/ MRI/ Discography
- Interbody fusion or disc replacement is the key to success