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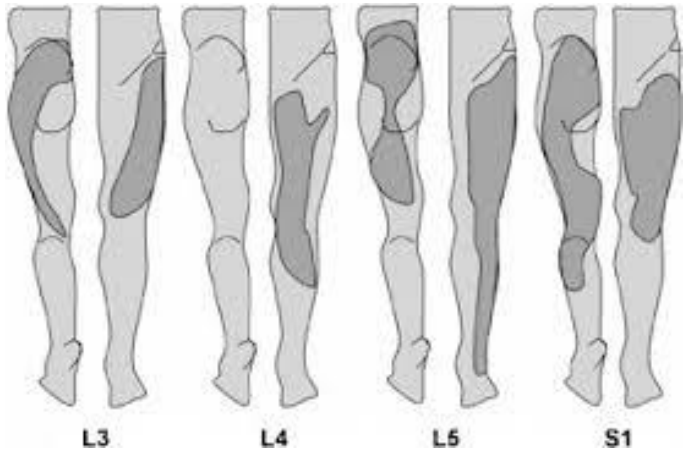
Acute vs. Chronic Radicular Pain- surgical considerations

Mr. Sri Chatakondu
Consultant Orthopaedic Spinal Surgeon

Radicular Pain vs. Referred Pain vs. Radiculopathy



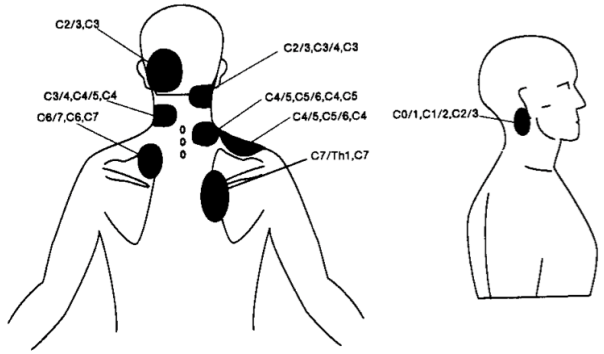
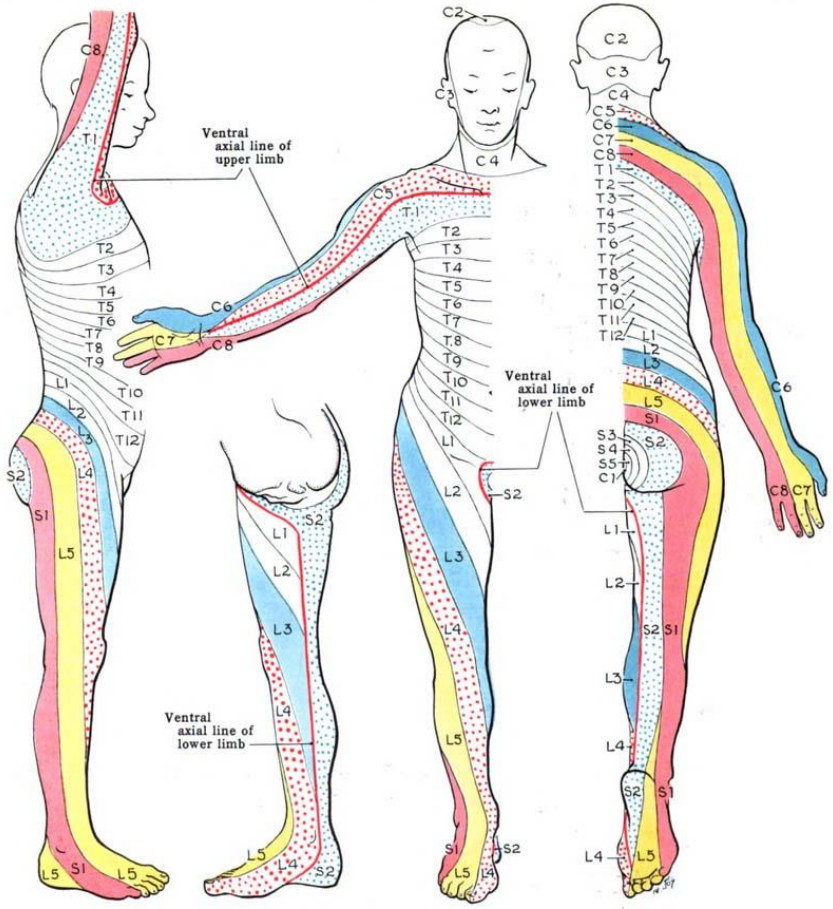


Fig. 2. Main referred pain distributions for the zygapophyseal joints from C0/1 to C7/Th1 and the dorsal rami C3 to C7.



What does the patient want?

- To get rid of the acute pain
- To be able to function
- To return to normal function
- For this never to happen again
- To get rid of chronic back pain
- Not to end up in a wheelchair

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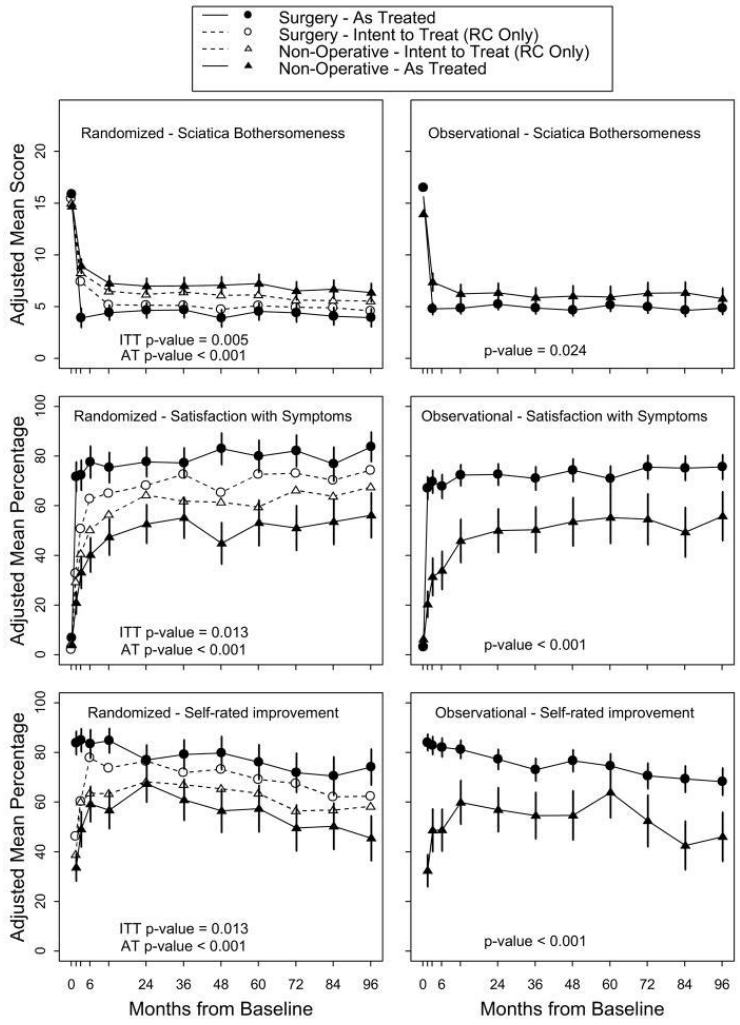
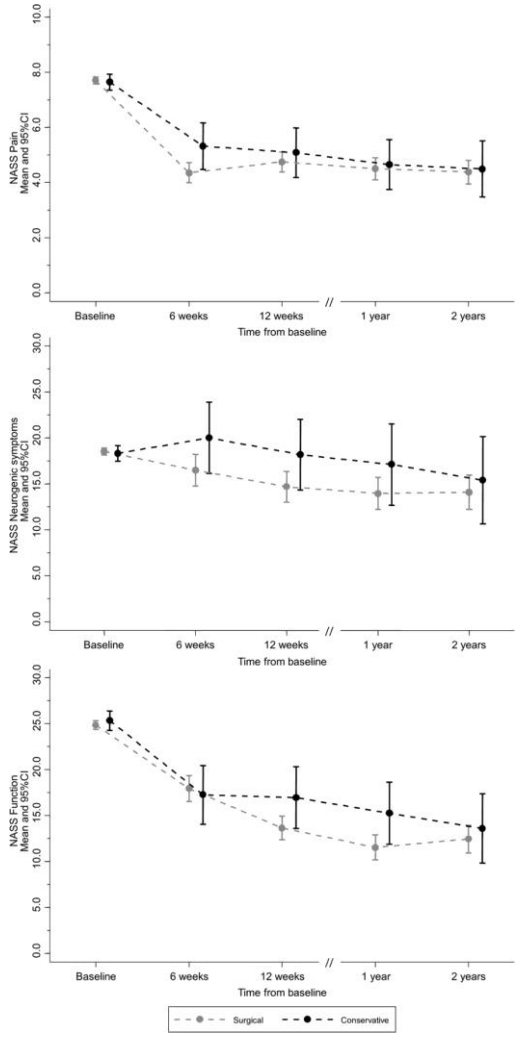
Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Eight-Year Results for the Spine Patient Outcomes Research Trial (SPORT)

Surgery better than Non-operative treatment at every timepoint but equivalence starts to be achieved at 1 to 2 years



Mean scores with 95% CI of the subscales of the North American Spine Society (NASS) questionnaire at baseline and subsequent follow-up assessments.



Marinella Gugliotta et al. BMJ Open 2016;6:e012938

BMJ Open

The Journal of Bone and Joint Surgery. British volumeVol. 84-B, No. 7

Recovery of motor deficits after microdiscectomy for lumbar disc herniation

F. Postacchini
, G. Giannicola
, G. Cinotti

We have studied, prospectively, 116 patients with motor deficits associated with herniation of a lumbar disc who underwent microdiscectomy. They were studied during the first six months and at a mean of 6.4 years after surgery. Before operation, muscle weakness was mild (grade 4) in 67% of patients, severe (grade 3) in 21% and very severe (grade 2 or 1) in 12%. The muscle which most frequently had severe or very severe weakness was extensor hallucis longus, followed in order by triceps surae, extensor digitorum communis, tibialis anterior, and others.
At the latest follow-up examination, 76% of patients had complete recovery of strength. Persistent weakness was found in 16% of patients who had had a mild preoperative deficit and in 39% of those with severe or very severe weakness. Muscle strength was graded 4 in all patients with persistent weakness, except for four with a very severe preoperative deficit affecting the L5 or S1 nerve root. They showed no significant recovery. Excluding this last group, the degree of recovery of motor function was inversely related to the preoperative severity and duration of muscle weakness. The patients' subjective functional capacity was not directly related to the degree of recovery except in those with persistent severe or very severe deficit.

Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Eight-Year Results for the Spine Patient Outcomes Research Trial (SPORT)

Complications

1. Infection
2. Nerve damage
3. Iatrogenic Cauda Equina Syndrome
4. Dural Tear

Intraoperative complications ‡			
Dural tear/ spinal fluid leak	12 (5%)	14 (3%)	0.19
Nerve root injury	1 (0%)	1 (0%)	0.82
Other	2 (1%)	1 (0%)	0.51
None	247 (94%)	533 (97%)	0.056
Postoperative complications/events §			
Nerve root injury	0 (0%)	1 (0%)	0.70
Wound hematoma	0 (0%)	4 (1%)	0.40
Wound infection	4 (2%)	14 (3%)	0.52
Other	9 (4%)	18 (3%)	0.96
None	244 (95%)	513 (94%)	0.62

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Recurrence rate up to 11%

Need for further surgery up to 15%

Additional surgeries (1-year rate) ¶	11 (4%)	37 (7%)	0.13
Additional surgeries (2-year rate) ¶	16 (6%)	50 (9%)	0.12
Additional surgeries (3-year rate) ¶	20 (7%)	53 (10%)	0.29
Additional surgeries (4-year rate) ¶	24 (9%)	61 (11%)	0.32
Additional surgeries (5-year rate) ¶	25 (9%)	65 (12%)	0.27
Additional surgeries (6-year rate) ¶	29 (11%)	73 (13%)	0.31
Additional surgeries (7-year rate) ¶	33 (12%)	79 (14%)	0.40
Additional surgeries (8-year rate) ¶	35 (13%)	84 (15%)	0.38
Recurrent disc herniation	17 (7%)	57 (11%)	

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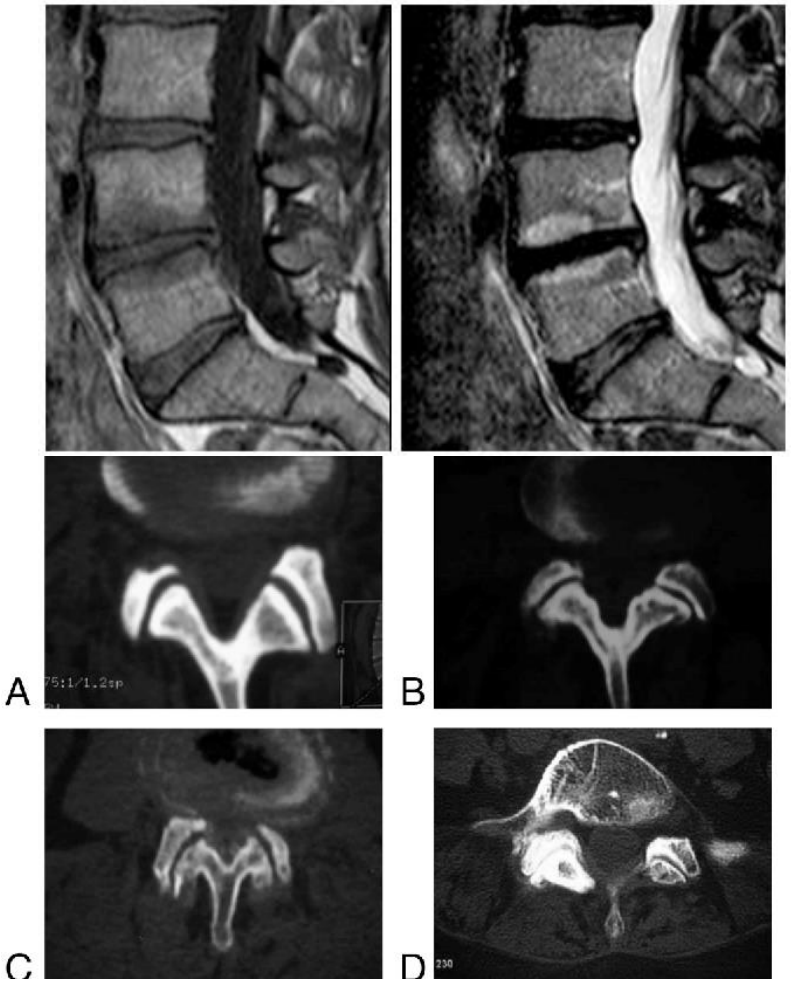
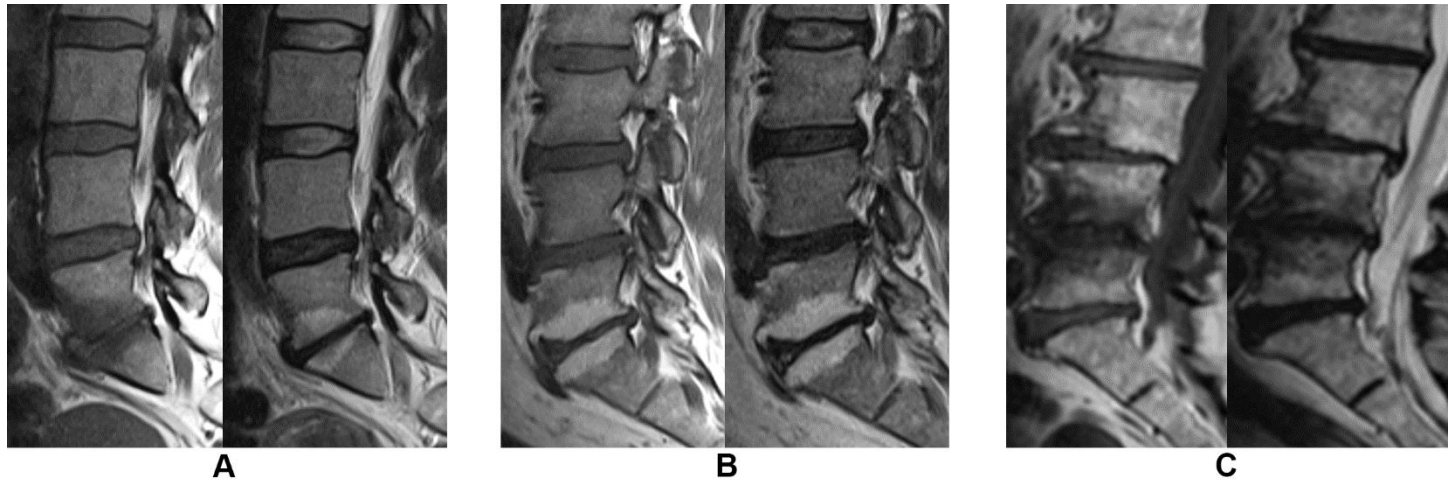
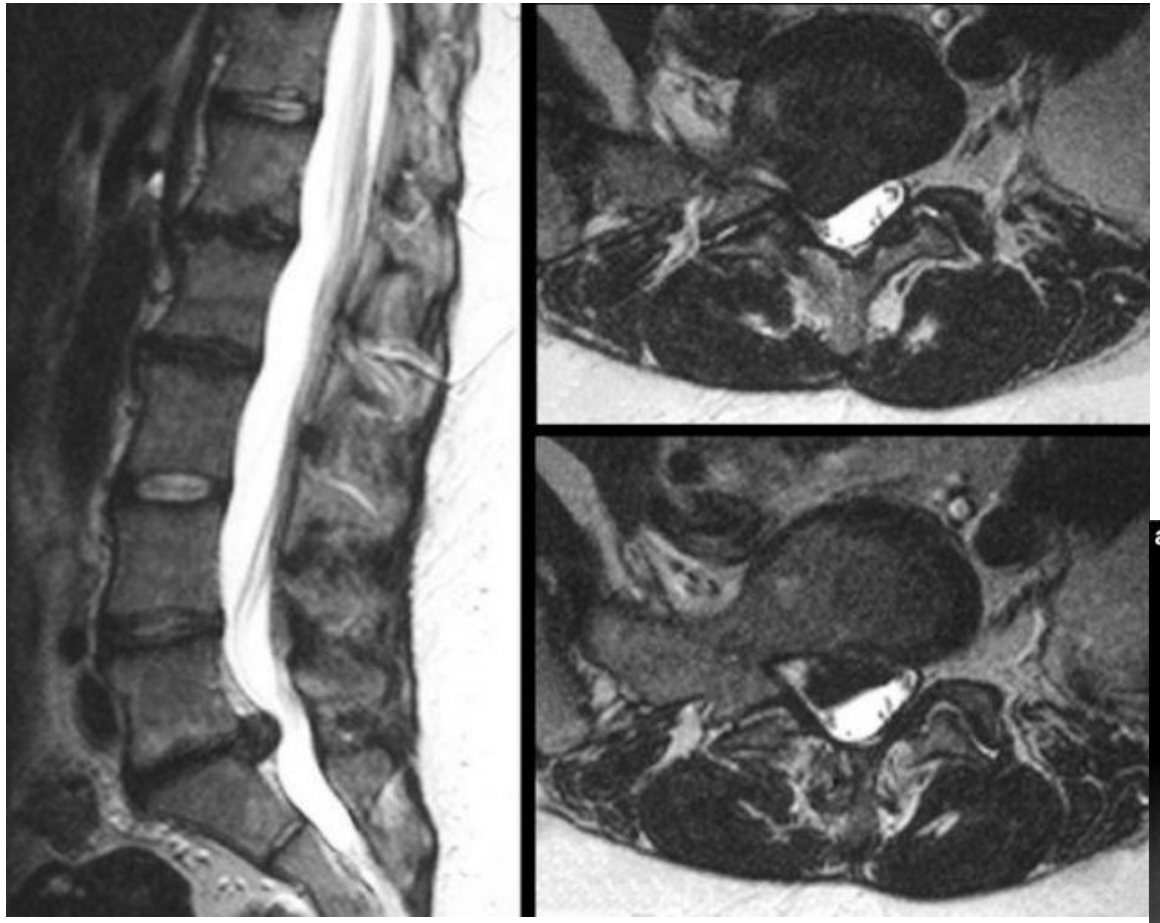
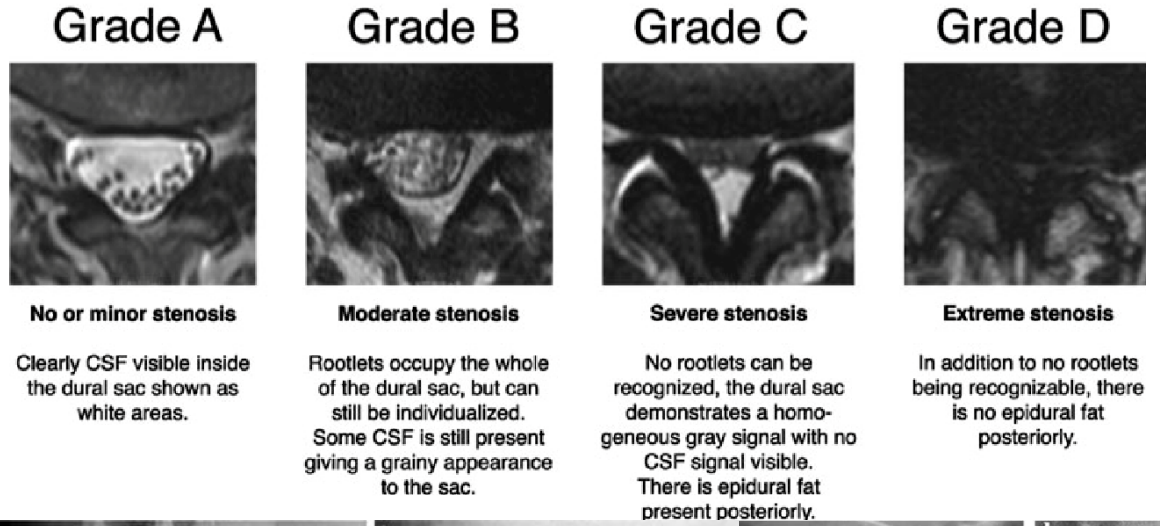
PRIMARY BACK PAIN

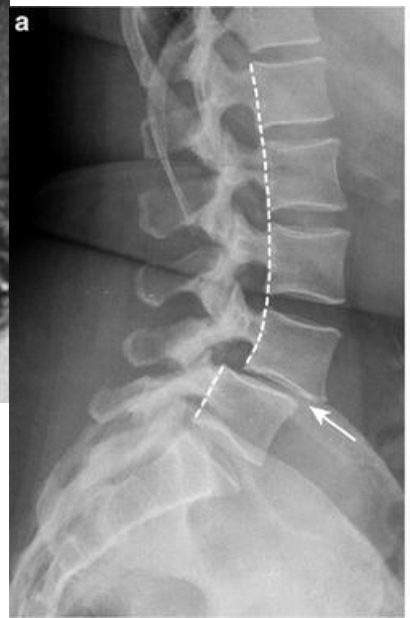


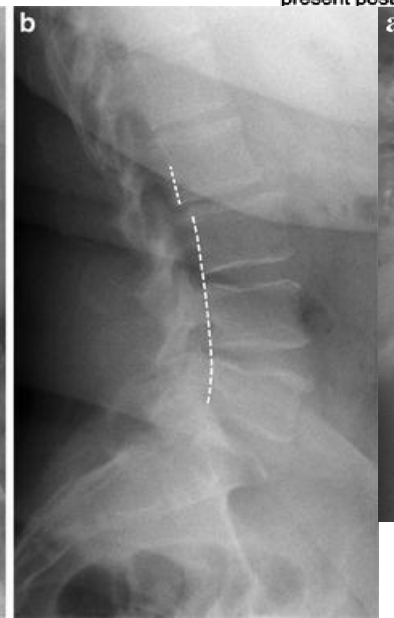


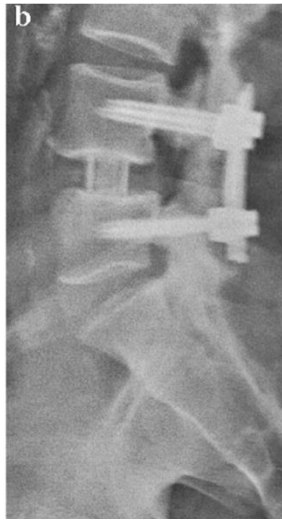
SECONDARY BACK PAIN





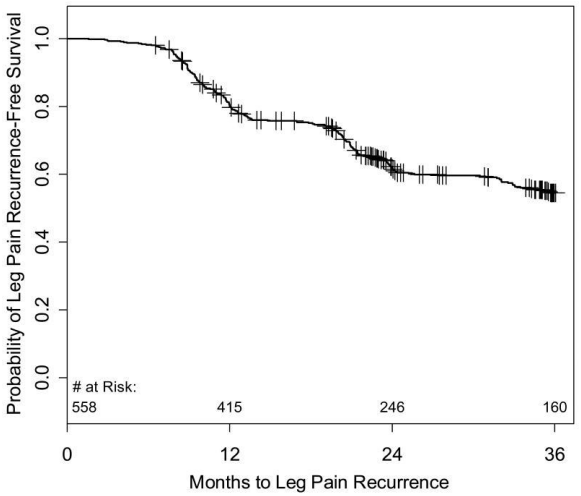


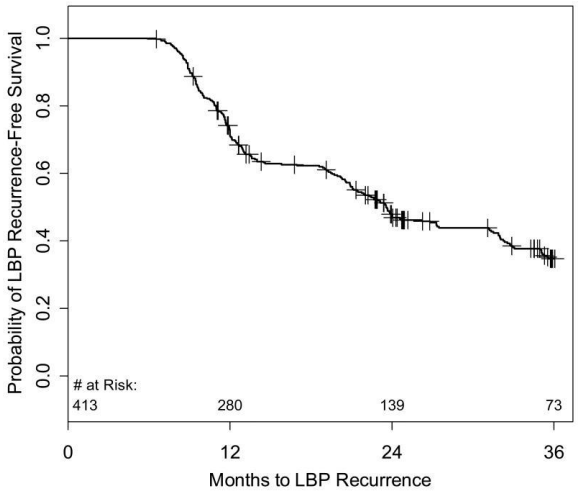




Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Eight-Year Results for the Spine Patient Outcomes Research Trial (SPORT)

Resolution of leg pain better than back pain in short term and long term





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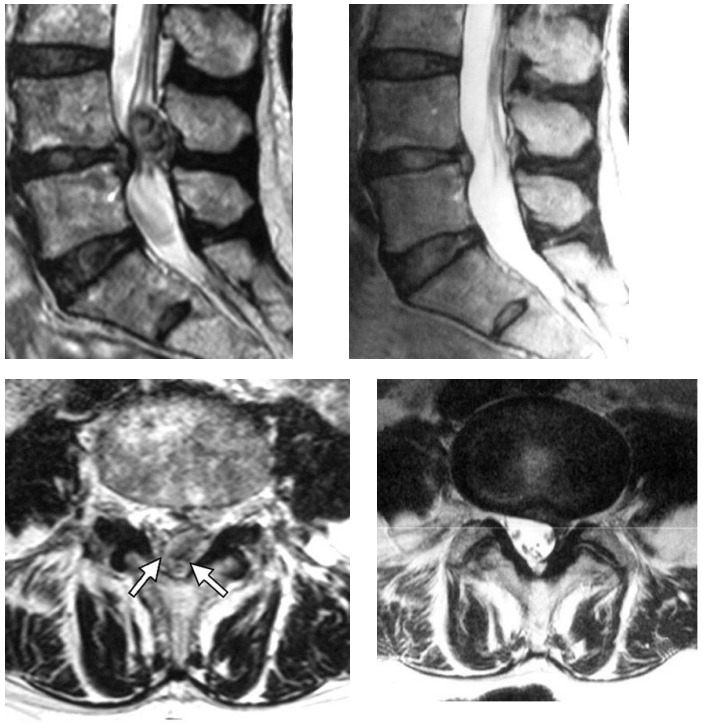
Lumbar Disc Herniation-Natural History



- **Observations on the natural history of massive lumbar disc herniation**
- G. L. Cribb
- , D. C. Jaffray
- , V. N. Cassar-Pullicino
- **Published Online:**1 Jun 2007https://doi.org/10.1302/0301-620X.89B6.18712
- **Sections**
- **View Article**
- **Tools**
- **Share**
- We have treated 15 patients with massive lumbar disc herniations non-operatively. Repeat MR scanning after a mean 24 months (5 to 56) showed a dramatic resolution of the herniation in 14 patients. No patient developed a cauda equina syndrome.

Spinal Stenosis- Natural History

NATURAL HISTORY OF LUMBAR SPINAL STENOSIS: P59.

Frennered, Karin;

Spine Journal Meeting Abstracts: October 2011 - Volume - Issue - [no page #]
ORAL PRESENTATIONS

•**Author Information**

Department of Orthopaedics, Sahlgren University Hospital, Gothenburg, Sweden

INTRODUCTION: Surgery has been shown to give superior results compared to natural history in lumbar spinal stenosis (LSS), although some patients are unchanged or slightly improved even without surgery. The aim of the present study was to further study natural history and factors potentially influencing clinical picture and development.

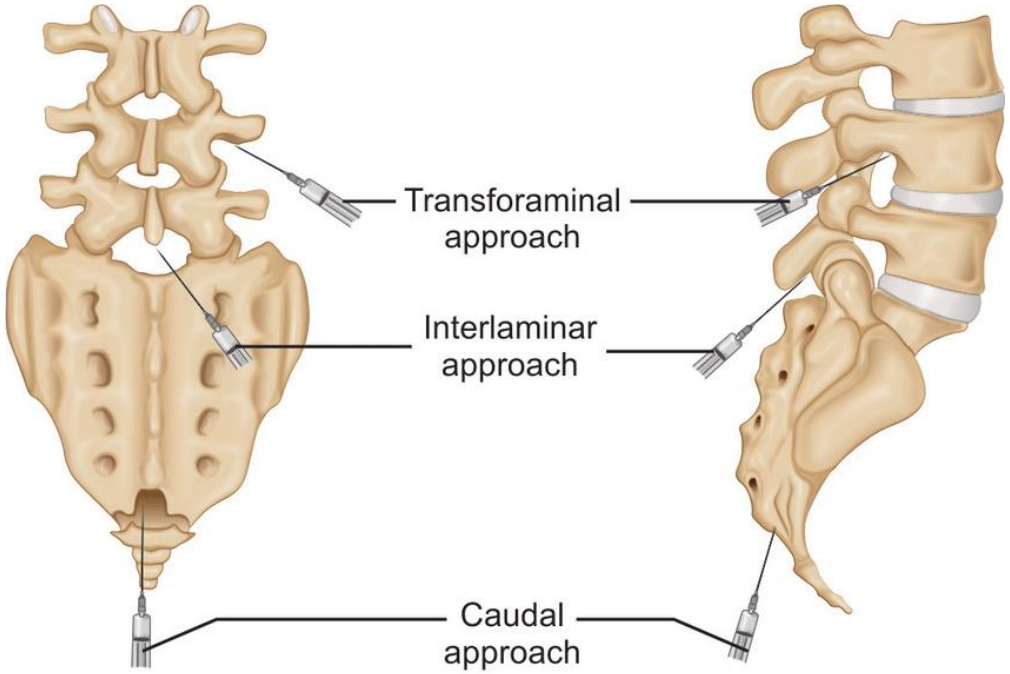
MATERIAL AND METHODS: 240 patients with clinical and radiological signs of LSS, referred for surgical evaluation answered a computerized interview including, leg and back pain (VAS, 0—100), walking distance, depressive symptoms (Zung, 0—100) and quality of life (EQ5D, -48—100). 146 were not selected for surgery. They were prospectively followed 3.4 years (2.1—5.2), at which time, 107 of 120 eligible were re-evaluated. 58% were female. Mean age was 68 (21—91). 47% had two or more level stenosis. L4-L5 was affected in 79%. Mean dural sac area was 50 mm2. 26% had a lumbar deformity and 26% had a degenerative spondylolisthesis.

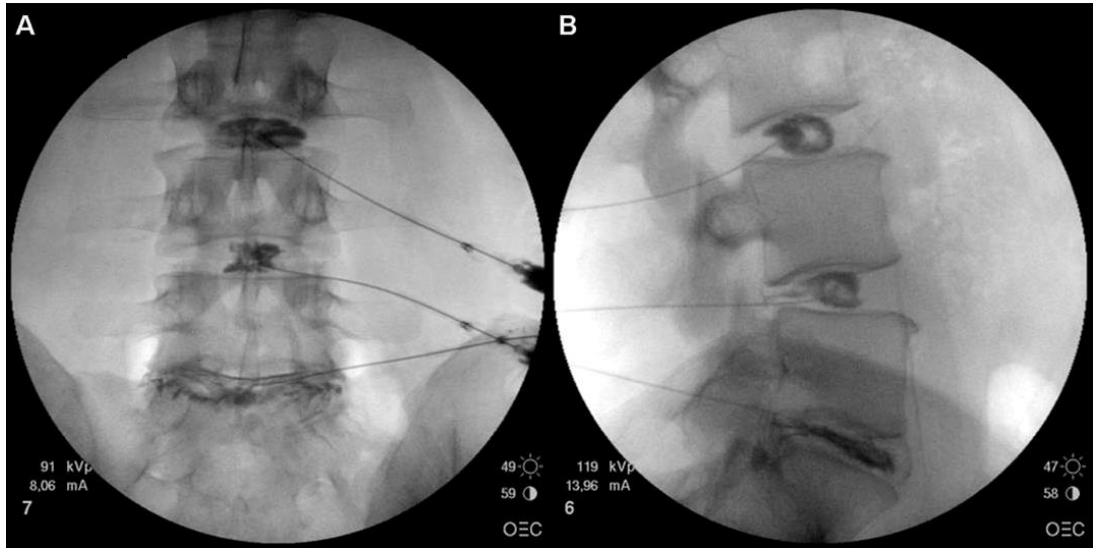
RESULTS: At baseline, leg pain was 56 and back pain was 61. Walking distance was < 500m in 56%. EQ5D was 38 and Zung 38. At FU, VAS (leg and back) and EQ5D showed significant improvement (˜10 units). Comparing leg pain, 55% were unchanged, 32% improved and 13% deteriorated. Cases with lumbar deformities had more back pain (79 and 64) and less EQ5D (15 and 31) at baseline and FU. A change in pain level or EQ5D could not be predicted by degree of stenosis, number of levels affected, presence of degenerative spondylolisthesis or lumbar deformity.

DISCUSSION: The natural history of LSS from other studies is confirmed. Since worsening is rare, reluctance towards surgery in patients with tolerable levels of pain and function is warranted. Presence of a lumbar deformity implies a partially different pathology with considerably higher symptom levels. Radiological findings does not influence clinical development

Role of Spinal Injections

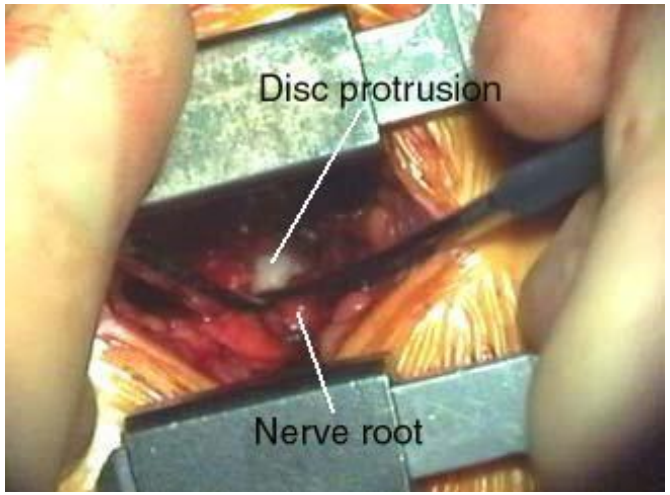
- Diagnostic & Therapeutic

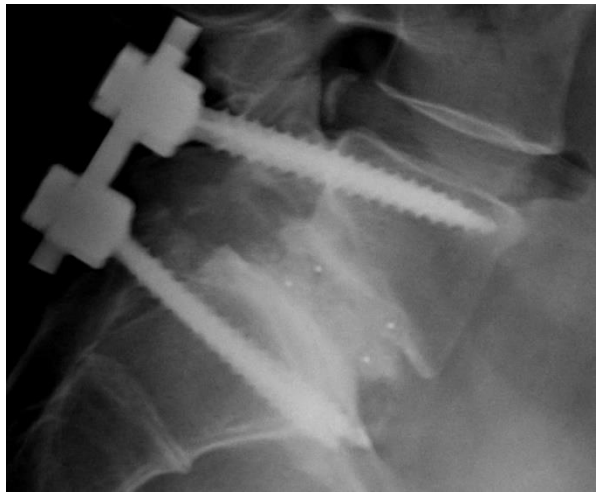




Radicular pain

- BEST INDICATION FOR SURGERY

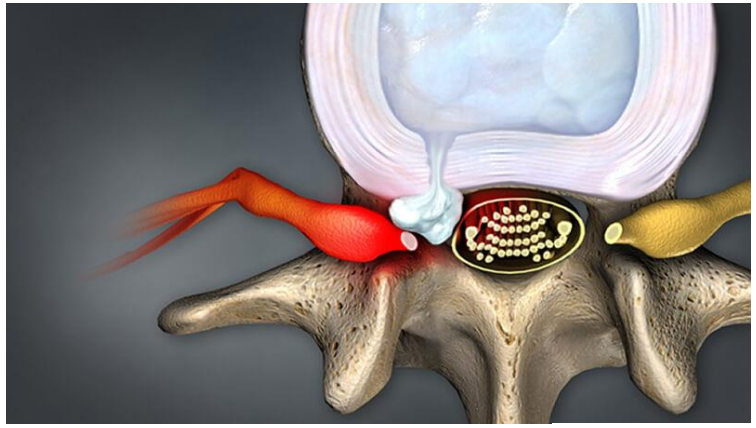


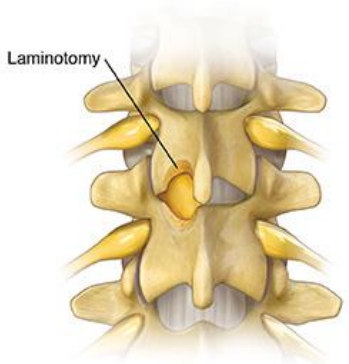


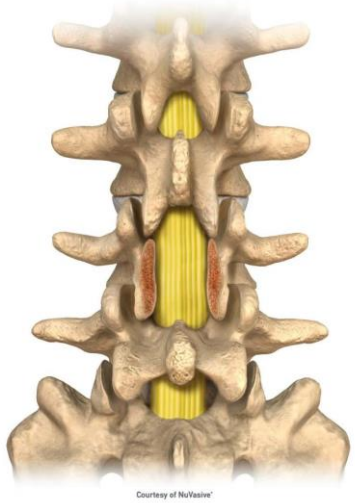
Surgical Options

- Discectomy/Decompression vs. Indirect Decompression
- Disc replacement vs. Fusion

Microdiscectomy /decompression

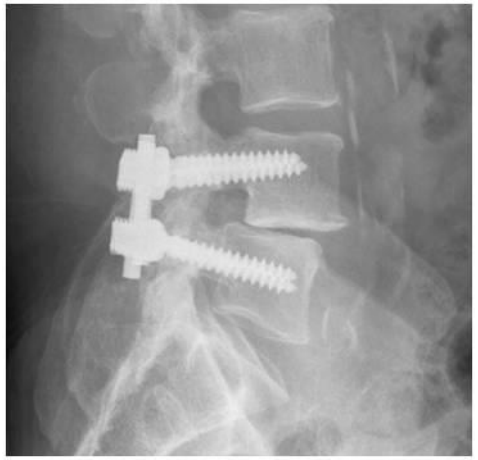


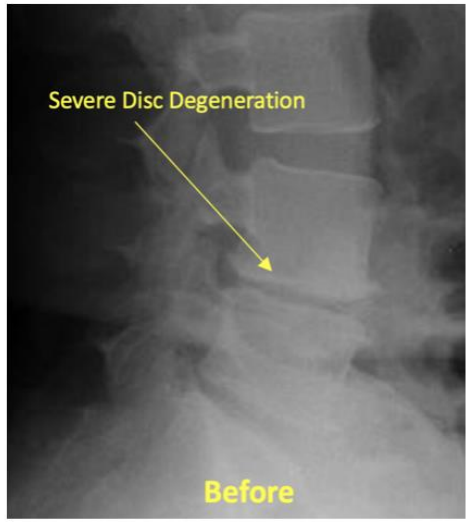


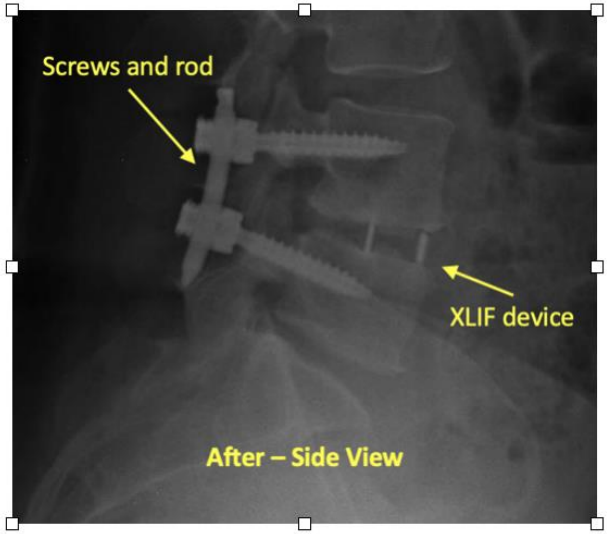


- 1 inch incision per level
- 1 – 2 day admission
- 6 weeks return to work
- Recurrence rate 4%
- Dural tear rate 1%
- Infection/nerve damage/ cauda equina syndrome < 1%

Spinal Fusion

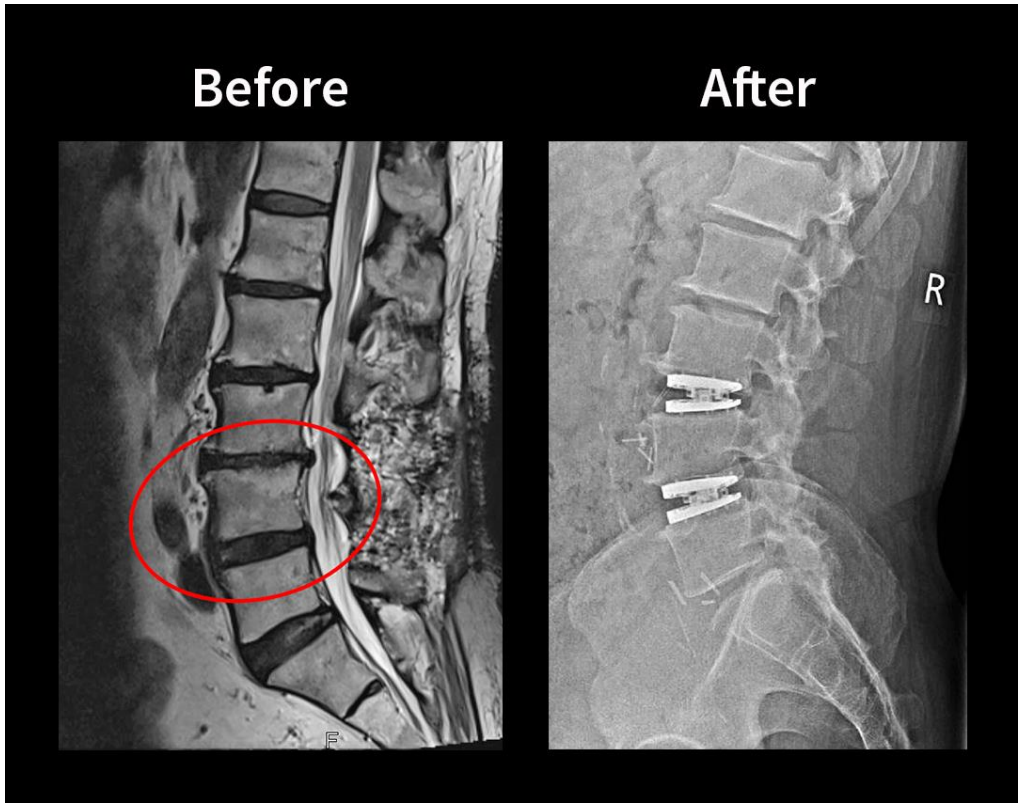


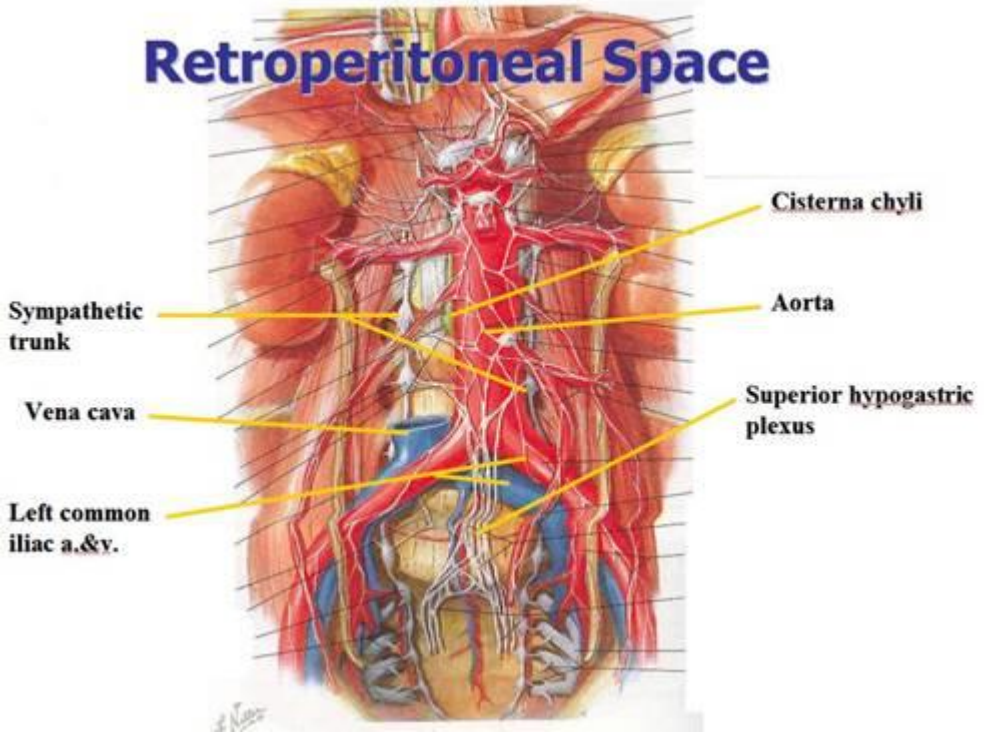




Adjacent Level Disease

Lumbar Disc Replacement





Cervical Disc Replacement

SUMMARY

- Radiculopathy best indication for surgery
- Radiculopathy can be self-limiting but surgical results best at every endpoint
- Surgical complications can be catastrophic
- Axial pain vs. Limb pain the crux (Buttock/Shoulder- watershed)
- Limb pain responds better to surgery than axial pain
- Primary axial pain vs. secondary axial pain