



# First Year Experience with Lipogems

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# Polaris

POLARIS

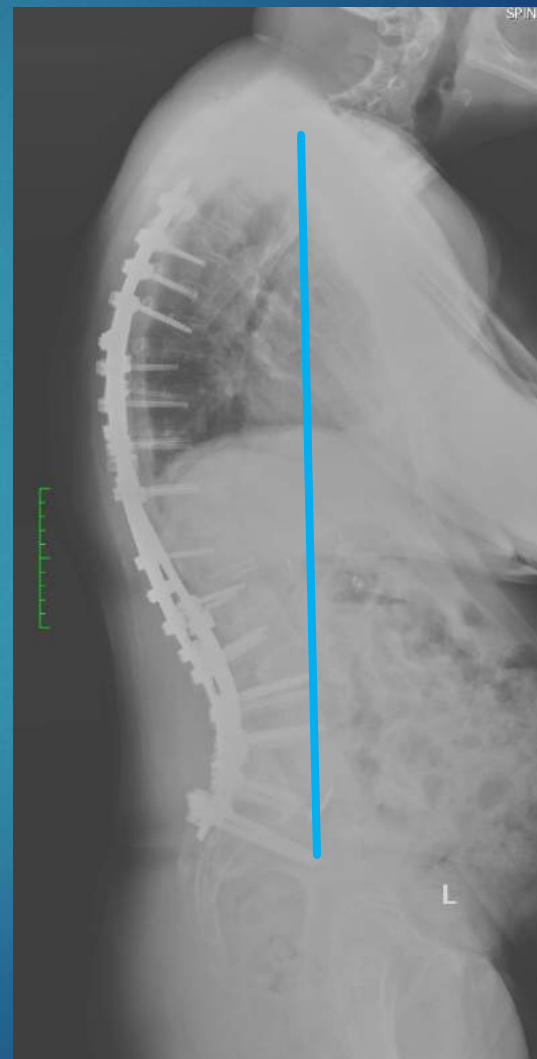
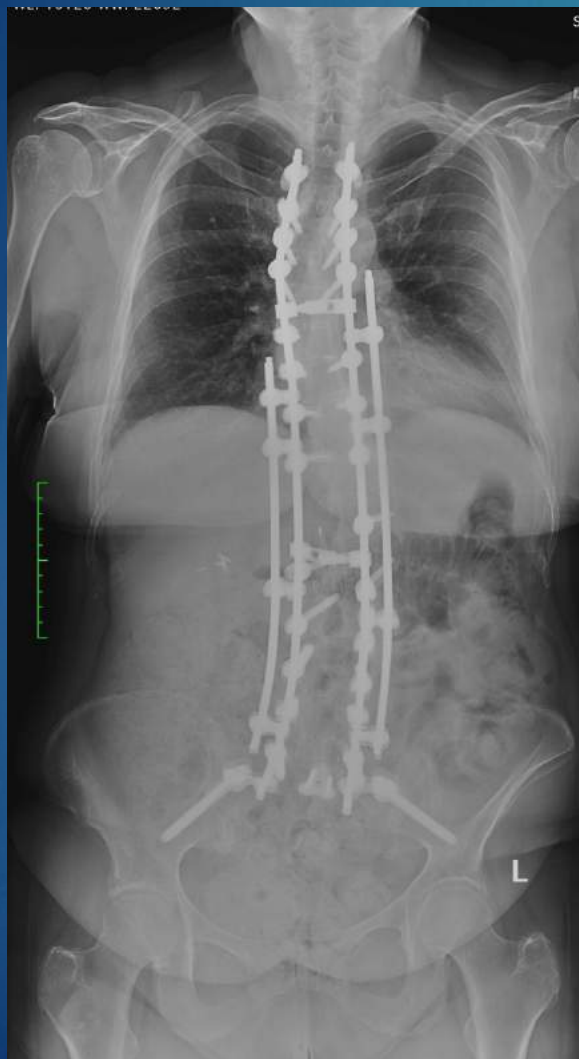
Spine & Neurosurgery Center



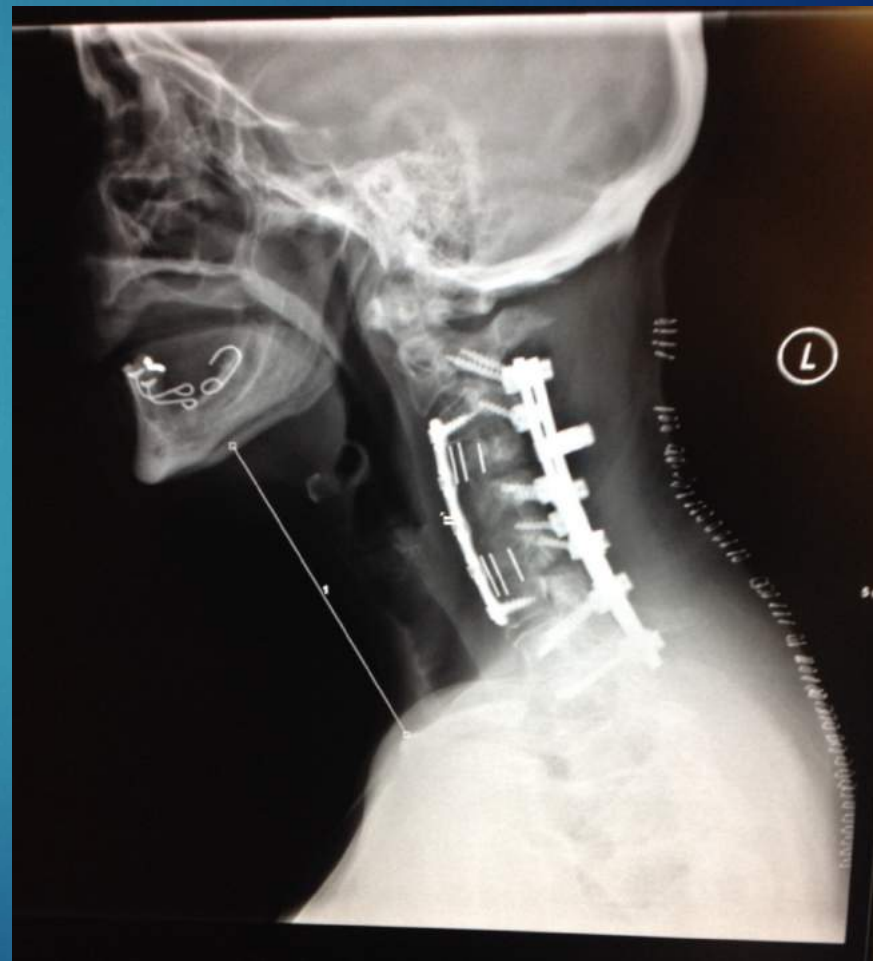
# Adult Deformity



# Adult Deformity



# Cervical Deformity



# Overview of Lipogems

## Experience at Polaris

- ▶ Total of 74 patients
  - ▶ Osteoarthritis of the Knee
    - ▶ 33 patients (49 knees)
  - ▶ Degenerative Joint Disease of the Spine
    - ▶ 26 patients (45 levels)
  - ▶ Other joints with Osteoarthritis treated
    - ▶ Intra-op adjacent segment spine (2)
    - ▶ Foot/ankle (2)
    - ▶ Shoulder (5)
    - ▶ Hip (3)
    - ▶ Elbow (2)
    - ▶ Thumb (1)

# Brief Analysis of Other Joints Treated

Success was subjective and required 60% improvement at 6 months

- ▶ Foot/ankle (2)
  - ▶ Patient 1 100%
  - ▶ Patient 2 75%
- ▶ Shoulder (5)
  - ▶ Patient 1 100%
  - ▶ Patient 2 0%
  - ▶ Patients 3-5 improvement but less than 6 months

# Brief Analysis of Other Joints Treated

Success was subjective and required 60% improvement at 6 months

- ▶ Hip (3)
  - ▶ Patient 1 80%
  - ▶ Patients 2-3 improvement but less than 6 months
- ▶ Elbow (2)
  - ▶ Patient 1 98%
  - ▶ Patient 2 improvement but less than 6 months
- ▶ Thumb (1)
  - ▶ Improvement but less than 6 months



# Overview of Degenerative Joint Disease in the Knee

- ▶ Osteoarthritis of the knee
  - ▶ 33 patients (49 knees)
  - ▶ 17 patients with 6 months follow up
  - ▶ 6 month success rate 83%
  - ▶ Criteria was subjective, relief greater than 60% at 6 months
  - ▶ Since patient number 12
    - ▶ have been tracking with WOMAC and VAS

# Overview of Lipogems

## Experience in the Lumbar Spine

- ▶ Degenerative Joint Disease of the Spine
  - ▶ 26 Patients treated
  - ▶ 45 Levels treated
  - ▶ 70% of all 20 patients at 6 months show improvement
  - ▶ 80% of patients without prior surgery show improvement at 6 months
  - ▶ 25% (1 of 4) of patients with prior fusion show improvement at 6 month follow up when adjacent segment is treated with Lipogems

# Lipogems/Spine

- ▶ We began injections with Lipogems for degenerative lumbar spine disease on November 12, 2015
- ▶ All procedures have been performed at the Polaris Outpatient Spine Center in Atlanta, Georgia under my guidance

# Lipogems Spine Protocol

- ▶ All patients have had the entire spine joint treated with Lipogems disc (3cc) and facets (1cc each)
- ▶ All injections have been performed with the guidance of fluoroscopy
- ▶ All patients have been given 1 gm of Ancef prior to the procedure because of the injection of the disc
- ▶ All patients have been sent home the same day with an as need prescription of narcotics, muscle relaxants and medrol dose pack

# Lipogems Spine Protocol

- ▶ All patients are being followed with VAS and Oswestry Disability Index scores
  - ▶ Pre-op
  - ▶ 2 weeks post-op
  - ▶ 6 weeks post-op
  - ▶ 3 months post-op
  - ▶ 6 months post-op
  - ▶ 12 months post-op
  - ▶ 18 months post-op
  - ▶ 24 months post-op
- ▶ Post-procedure MRI at 6 months

# Lipogems Spine Results

- ▶ These results are for spine and all other joints injected with Lipogems
  - ▶ No infections
  - ▶ No hematomas
  - ▶ No neurologic or vascular injuries
  - ▶ No scars

# Lipogems Spine Results

- ▶ 50% of patients did have a significant increase in pain after the procedure lasting about 5-7 days
- ▶ Only additional treatment for this increased pain was a medrol dose pack and it was effective
- ▶ The pain that patients experienced in these cases is similar to the pain after a discogram
- ▶ The pain lasted longer than pain from a discogram probably because the disc is full from the 3cc of Lipogems and under some increased pressure

# Lipogems Spine Results

- ▶ All 7 patients at 1 year follow up
  - ▶ Average VAS pre-Lipogems 6
  - ▶ Average VAS post-Lipogems 2.8
  - ▶ Average ODI pre-Lipogems 50%
  - ▶ Average ODI post-Lipogems 30%
- ▶ All 20 patients at 6 months or greater follow up
  - ▶ Average VAS pre-Lipogems 5.2
  - ▶ Average VAS post-Lipogems 3.1
  - ▶ Average ODI pre-Lipogems 45.2%
  - ▶ Average ODI post-Lipogems 29.3%



# Lipogems Spine Results

- ▶ No prior spine surgery 10 patients with 6 months follow up
  - ▶ Average VAS pre-Lipogems 4.7
  - ▶ Average VAS post-Lipogems 2
  - ▶ Average ODI pre-Lipogems 43.8%
  - ▶ Average ODI post-Lipogems 25.4%
- ▶ No prior spinal fusion surgery 16 patients at 6 months follow up
  - ▶ Average VAS pre-Lipogems 5
  - ▶ Average VAS post-Lipogems 2.7
  - ▶ Average ODI pre-Lipogems 44.3%
  - ▶ Average ODI post-Lipogems 27.4%

# Lipogems Spine Results

- ▶ Prior spinal fusion surgery at the adjacent segment  
4 patients with 6 months follow up
  - ▶ Average VAS pre-Lipogems 6.3
  - ▶ Average VAS post-Lipogems 5.3
  - ▶ Average ODI pre-Lipogems 50%
  - ▶ Average ODI post-Lipogems 40%
  - ▶ Only 1 of 4 patients saw improvement at 6 months with Lipogems at the adjacent segment
    - ▶ His adjacent segment disease was the most mild

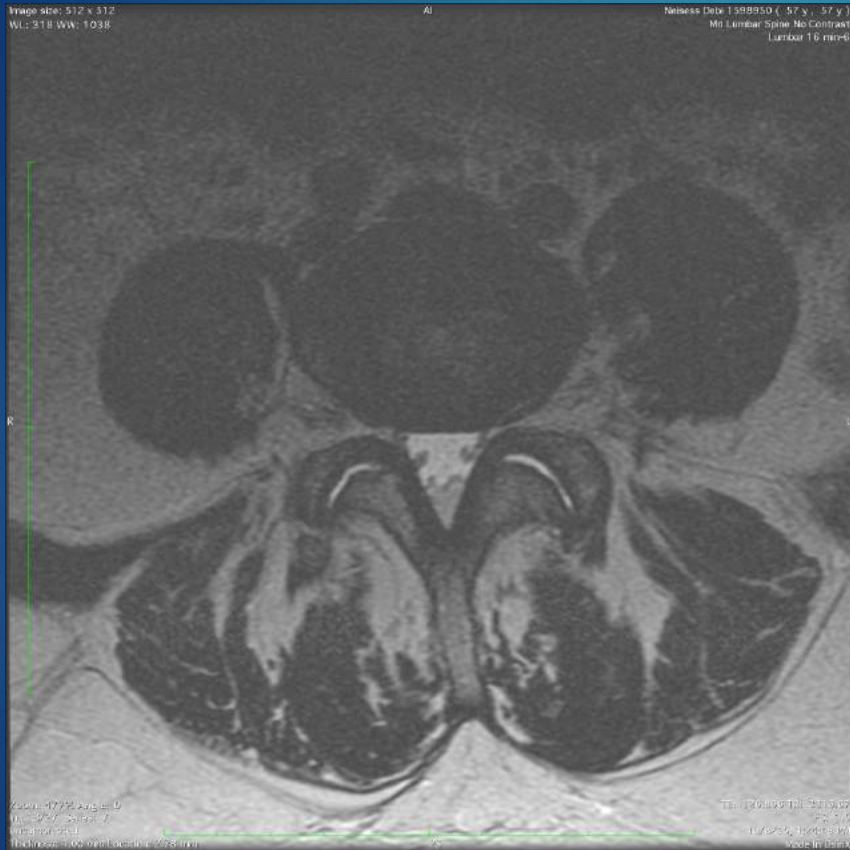
# Lipogems Spine Results

- ▶ Results of the 70% of patients who are improved with at least 6 months follow up
  - ▶ Average VAS pre-Lipogems 6.5
  - ▶ Average VAS post-Lipogems 2.4
  - ▶ Average ODI pre-Lipogems 46.6
  - ▶ Average ODI post-Lipogems 21.6

# Case Example 1

- ▶ 57 y/o female with five year history of back pain
  - ▶ Treated with extensive non-operative management
    - ▶ PT
    - ▶ Injections
    - ▶ NSAIDs
    - ▶ Narcotics and muscle relaxants
- ▶ She found no lasting benefit from non-operative management
- ▶ Her imaging on the next slide shows mild disc disease with moderate facet arthropathy seen by the increased T2 signal intensity in the facets bilaterally at L4-5

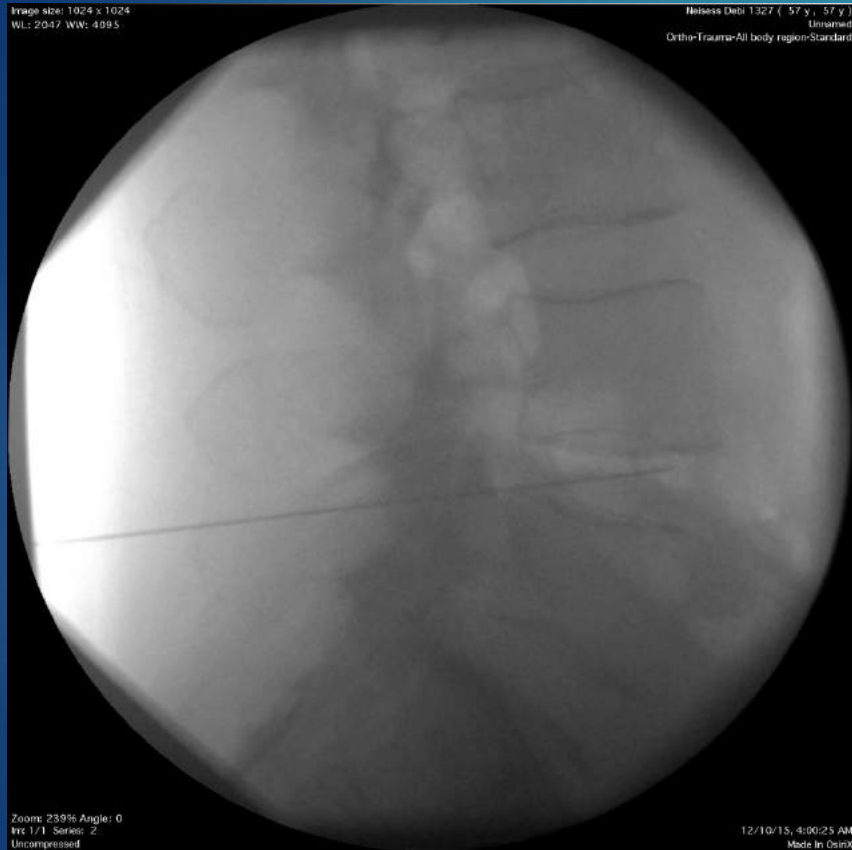
# Case Example 1



# Case Example 1

- ▶ The patient was treated with Lipogems at L4-5
  - ▶ 3cc in the disc
  - ▶ 1cc in each facet
- ▶ Imaging on following slide shows disc injection on the left with 1cc being placed anterior in the disc with a 22gauge spinal needle.
- ▶ Then we moved the needle slightly posterior and injected another cc followed by more posterior movement of the needle with injection of the third cc
- ▶ The image on the next slide on the right shows one cc being injected into the facet joint

# Case Example 1



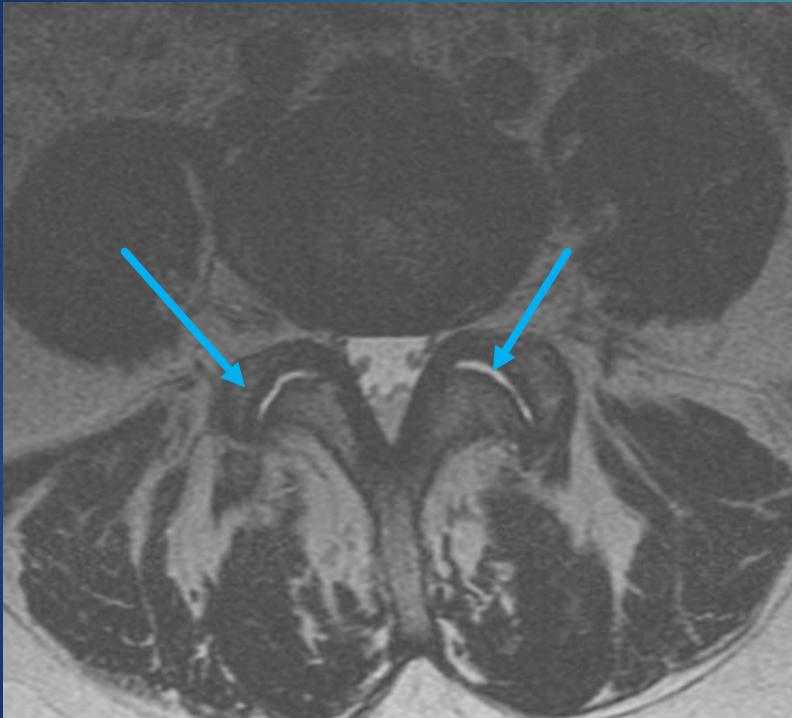
# Case Example 1

- ▶ Patient suffered no complications
- ▶ Patient was significantly improved at 2 week follow up
- ▶ Pre-Lipogems
  - ▶ VAS 4
  - ▶ ODI 40%
- ▶ Post-Lipogems 1 year follow up
  - ▶ VAS 1
  - ▶ ODI 10%

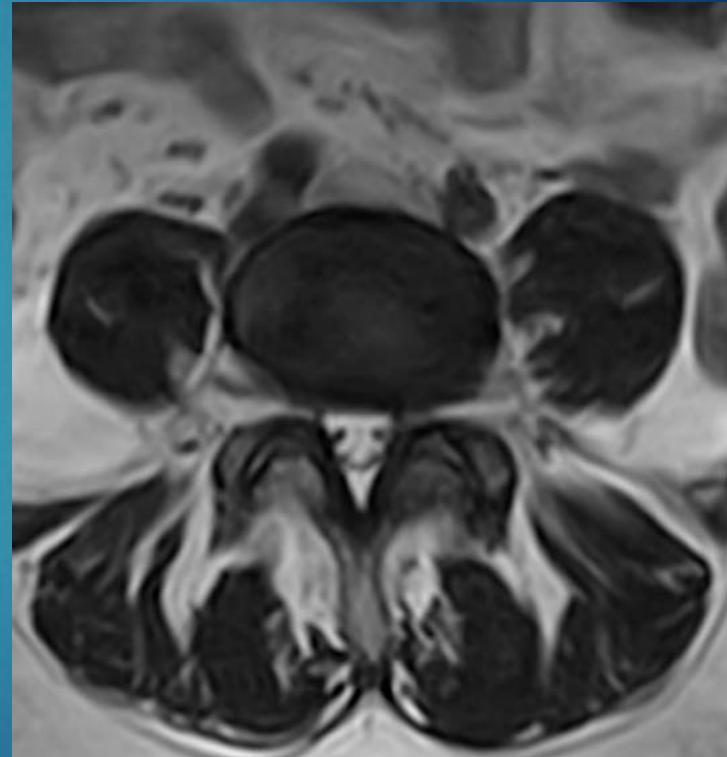


# Case Example 1

Pre Lipogems



6 Months Post Lipogems



# Case Example 2

- ▶ 45 y/o female with multiple year history of low back pain radiating into the posterior thighs bilaterally
- ▶ She has been through extensive non-operative management with PT and Injections
- ▶ Prior workup by previous physicians
  - ▶ Positive Discogram at L4-5
  - ▶ Another surgeon recommended an arthroplasty at L5-S1
  - ▶ Imaging on the next slide shows mild to moderate disc and facet disease at L4-5 and L5-S1

# Case Example 2

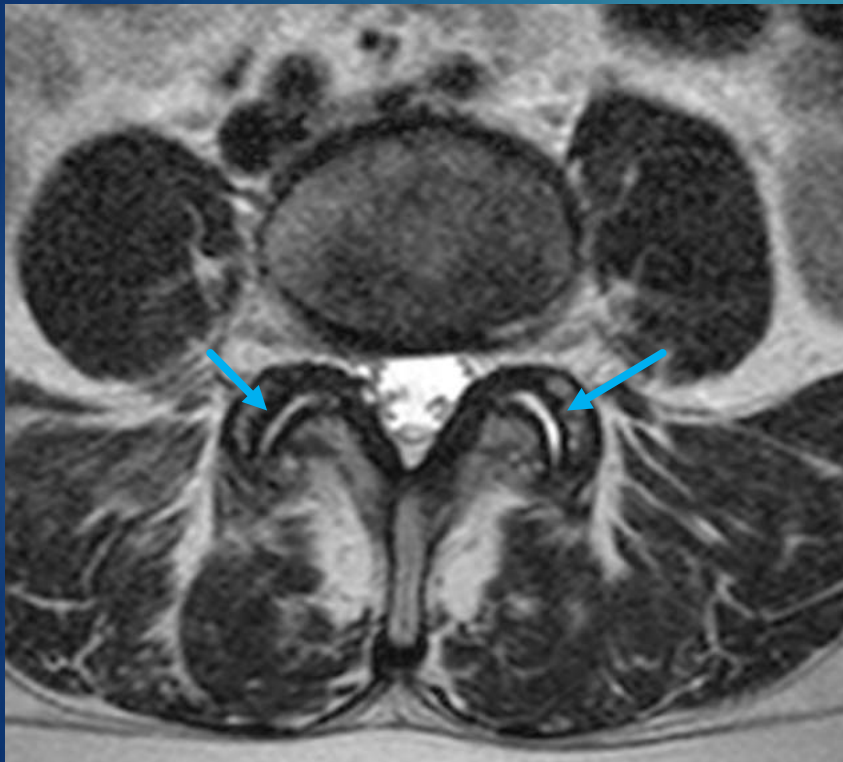


# Case Example 2

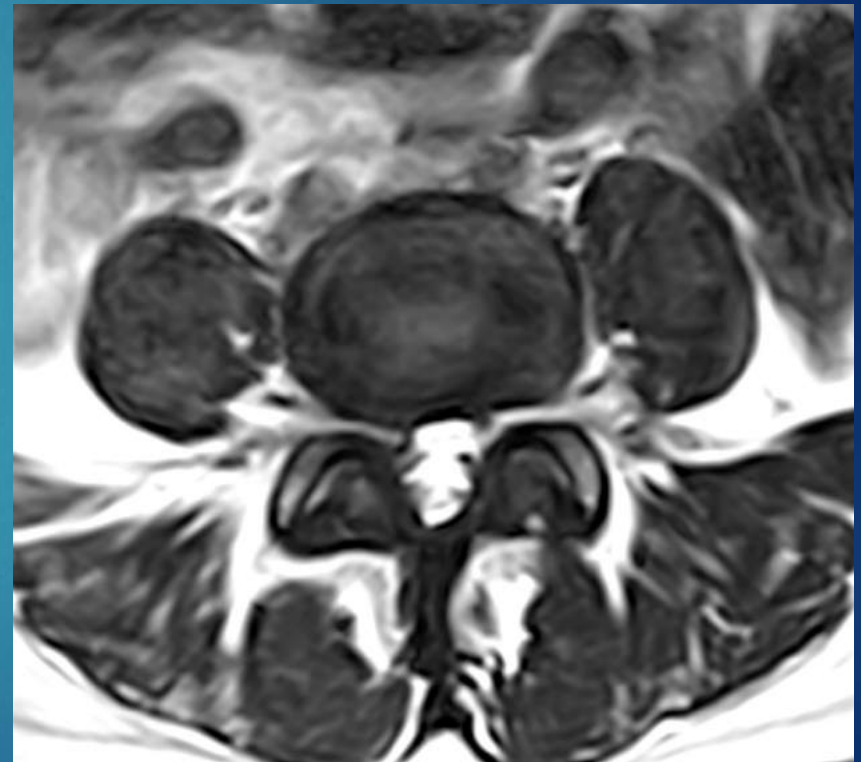
- ▶ Patient was treated with Lipogems at L4-5 and L5-S1
  - ▶ 3cc in each disc
  - ▶ 1cc in each facet
- ▶ Initially increased pain for about 7 days
  - ▶ Started medrol dose pack on post-op day 3

# Case Example 2

Pre Lipogems



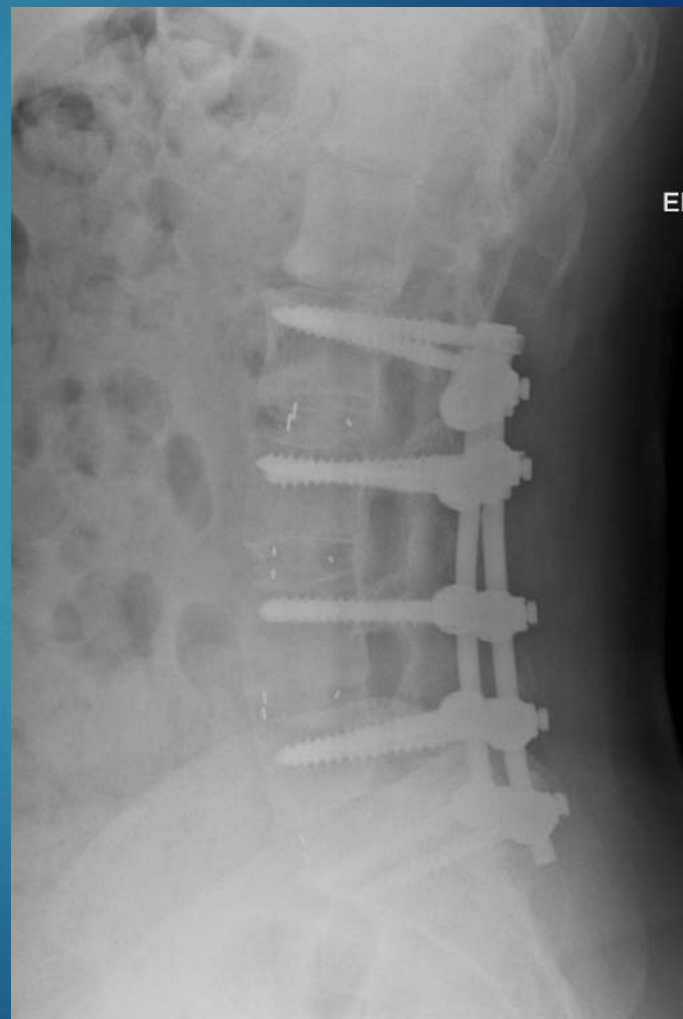
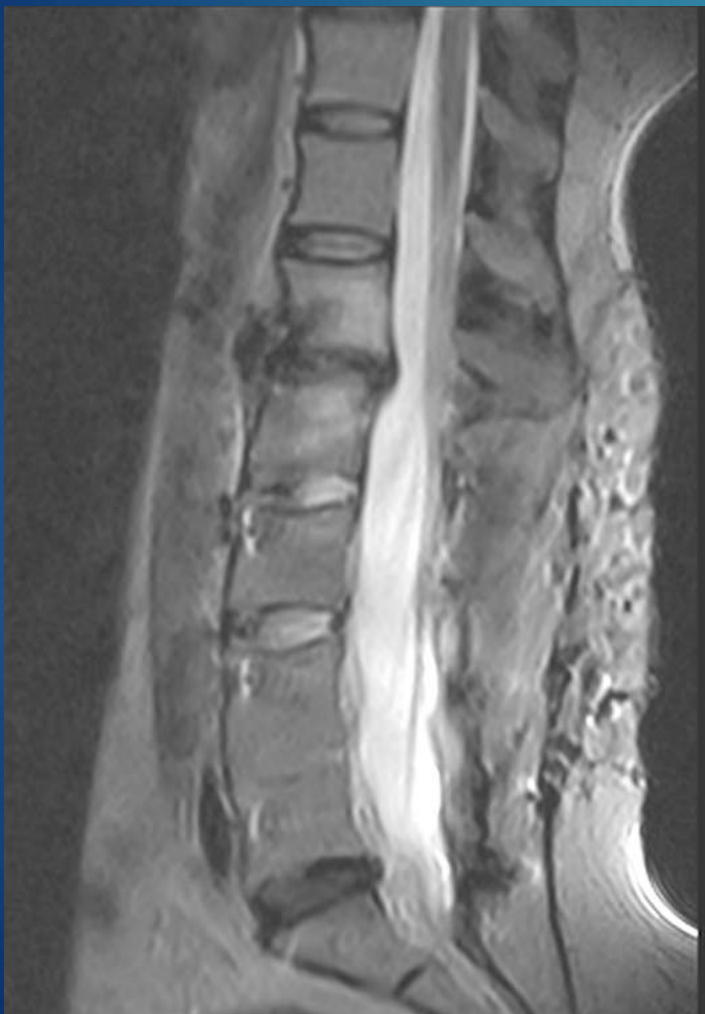
6 months Post Lipogems



# Case Example 2

- ▶ Pre-Lipogems
  - ▶ VAS 7
  - ▶ ODI 58%
- ▶ Post-Lipogems 1 year follow up
  - ▶ VAS 2
  - ▶ ODI 38%

# Case Example 3



# Case Example 3

- ▶ Pre-Lipogems
  - ▶ VAS 7
  - ▶ ODI 46%
- ▶ Post-Lipogems 6 months follow up
  - ▶ VAS 7
  - ▶ ODI 40%



# Case Example 4



# Case Example 4

- ▶ Pre-Lipogems
  - ▶ VAS 8
  - ▶ ODI 74%
- ▶ Post-Lipogems 6 months follow up
  - ▶ VAS 8
  - ▶ ODI 66%

# Case Example 5



# Case Example 5

- ▶ Pre-Lipogems
  - ▶ VAS 6
  - ▶ ODI 30%
- ▶ Post-Lipogems 6 months follow up
  - ▶ VAS 2
  - ▶ ODI 12%

# Conclusion of Early Results of Lipogems

- ▶ Safe and Efficacious treatment of Osteoarthritis in multiple joints
- ▶ Significant improvement at 6 months and a year in a small group of patients with spinal disease
- ▶ Clear improvement in facet disease of the lumbar spine in limited cases
- ▶ Concern for effectiveness in post fusion patients with advanced adjacent segment OA
- ▶ Still need more patients and follow up to determine the best spinal candidates