

# Posterior MIS Spine Fixation-Fusion

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BUMC



# Key Points

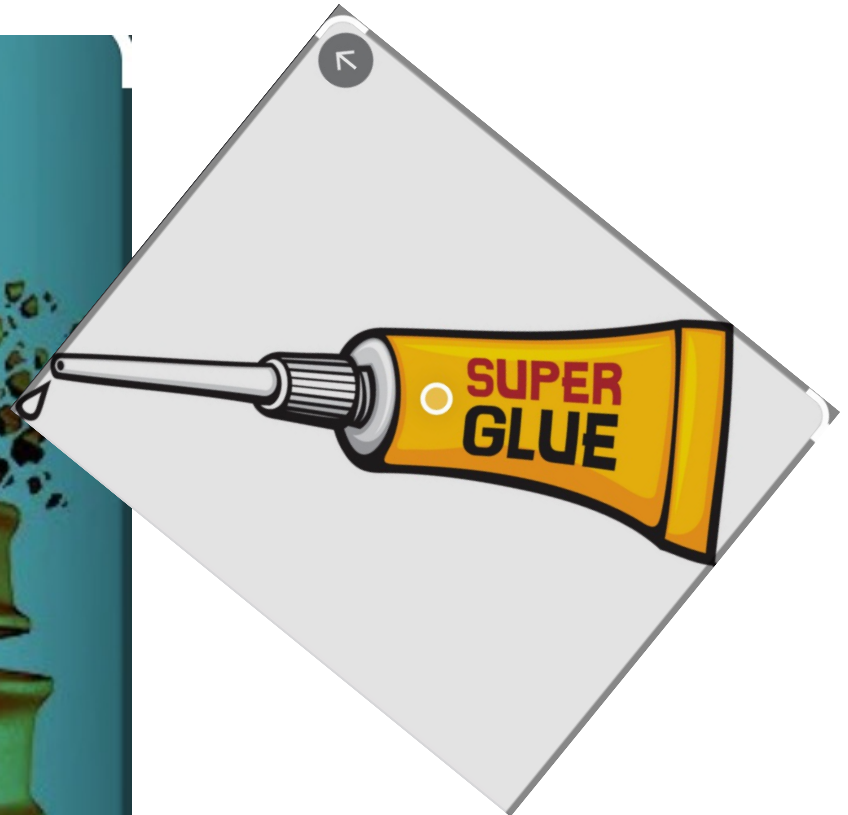
- WHAT?
- WHY?
- HOW?

# Key Points

- WHAT?
  - ✓ Define posterior fixation - fusion
- WHY?
  - ✓ Utility - applications
- HOW?
  - ✓ Technique – MISS vs Open Standard

# WHAT is Fusion?

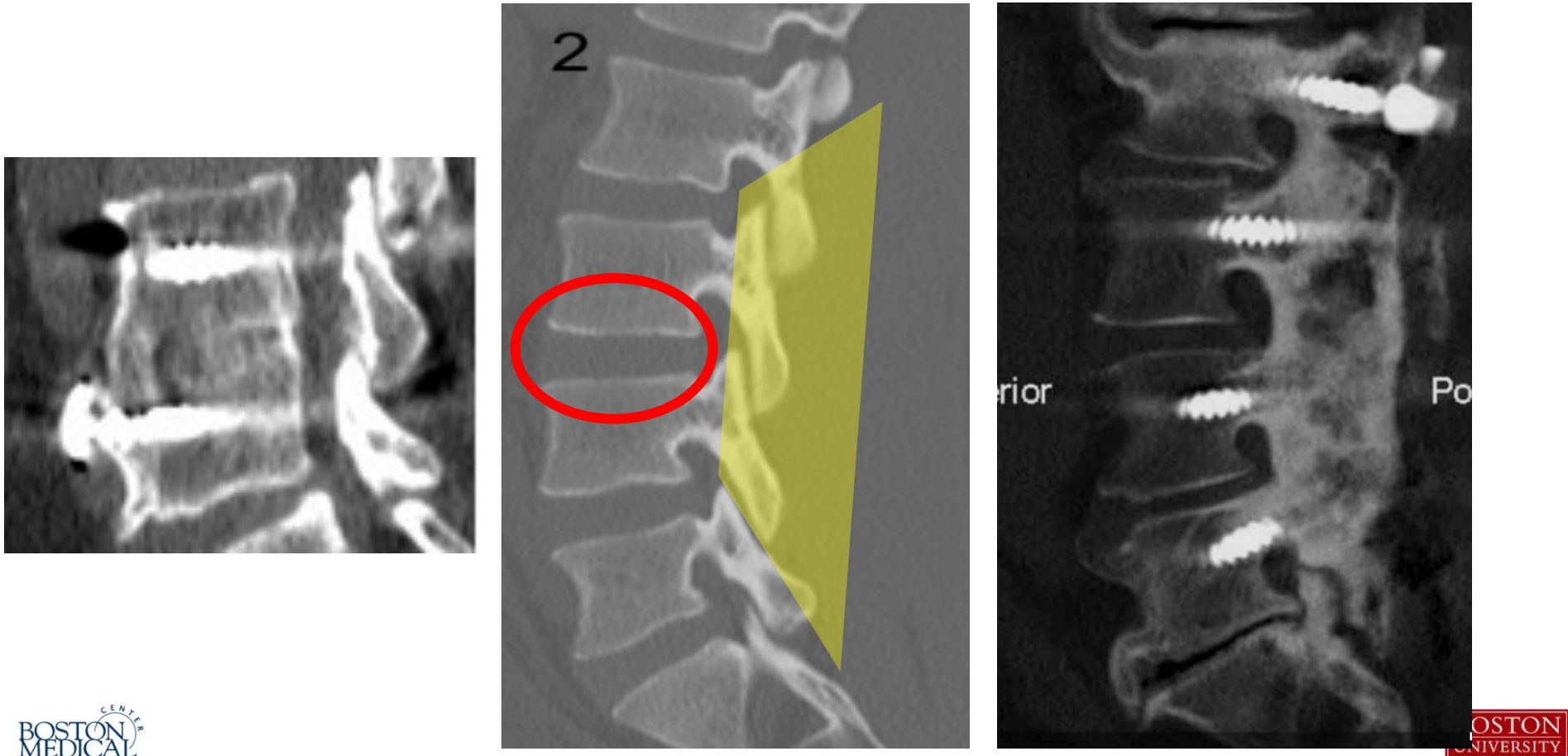
- Spinal Fusion: “weld-glue” the bone = Biologic process (evolving process)





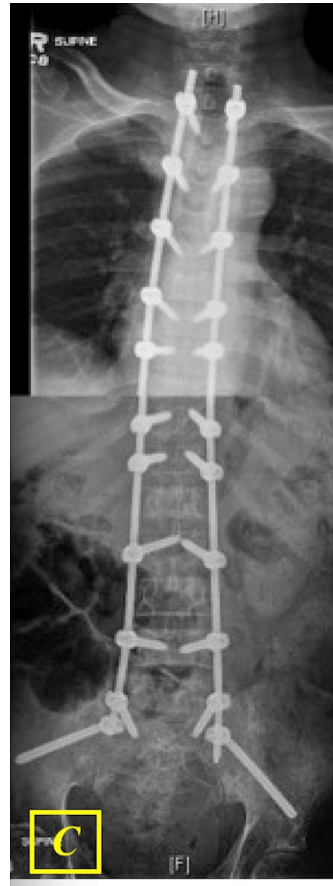
# WHAT are the main players - Fusion?

- Spinal Fusion: Cellular = Biologic process



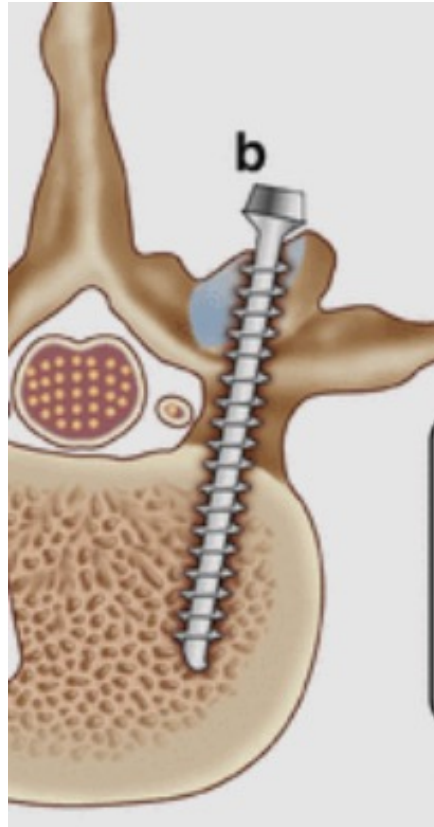
# WHAT is Fixation?

- Posterior Spinal Fixation: Braces & stabilizes the spine until the Biology succeeds in healing



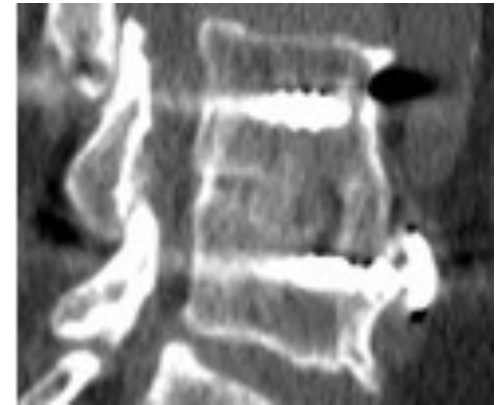
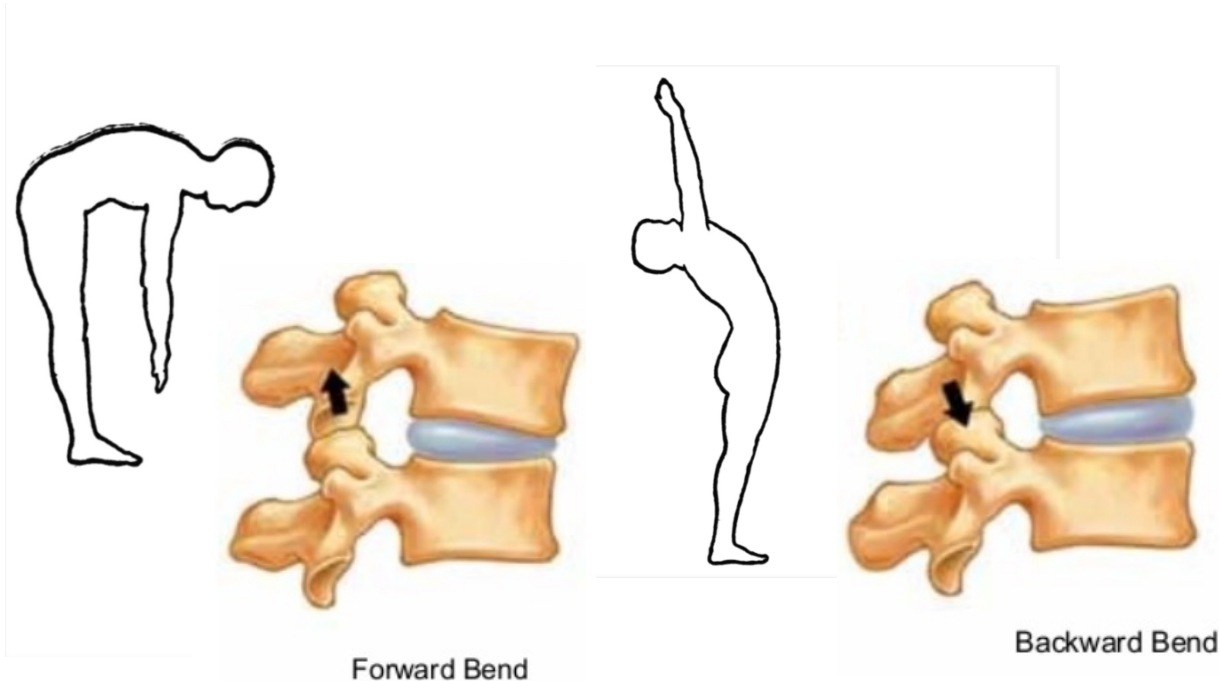
# WHAT are the main players - Fixation?

- Posterior Spinal Fixation: “Internal Brace”
  - ✓ Various Systems BUT similar concepts - Metal
    - Screws
    - Screw caps
    - Rods



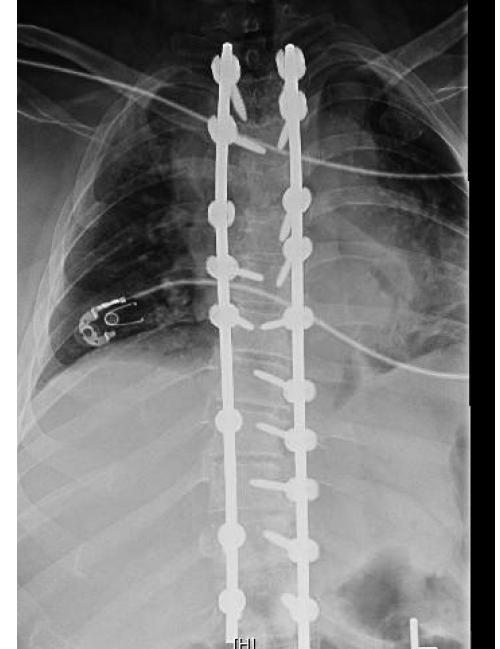
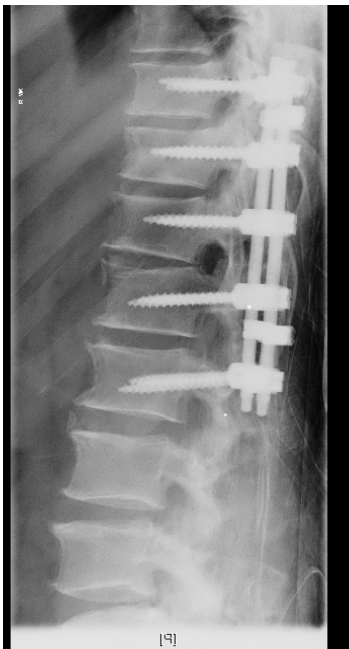
# WHY we do Fusion?

- Spinal Fusion: Eliminates motion across
  - ✓ A diseased painful joint (Degen disc-facet disease)
  - ✓ An unstable spinal segment



# WHY we do Fixation?

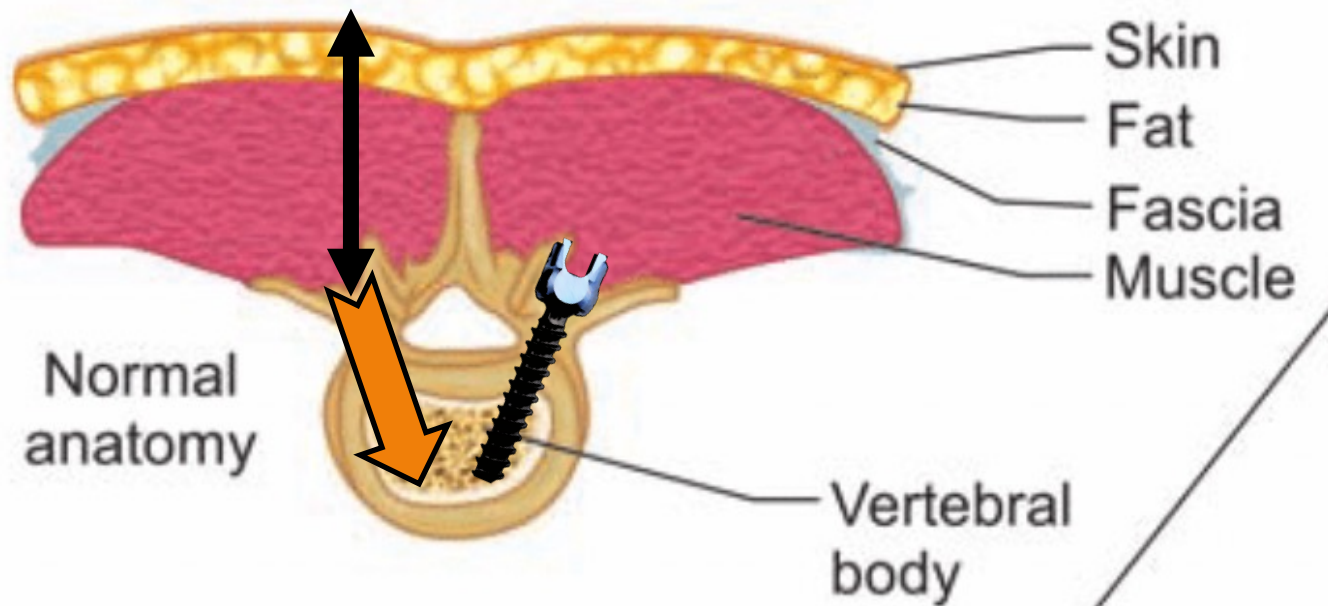
- Posterior Spinal Fixation:
  - ✓ Stabilize fractured spine – Frx healing
  - ✓ Correct deformity & maintain corrected alignment
  - ✓ Stabilize spine intended to fuse





# HOW?

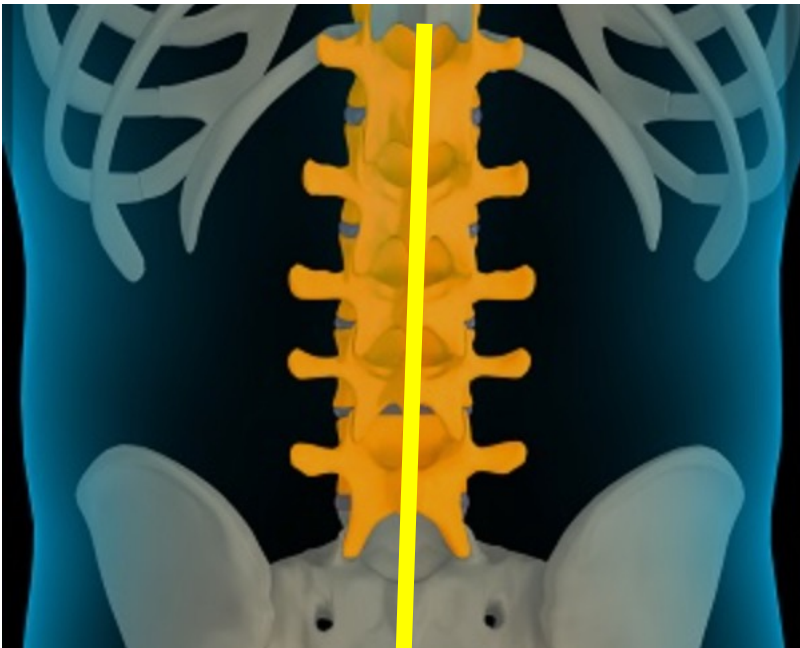
- Posterior Spinal Fixation - Fusion:



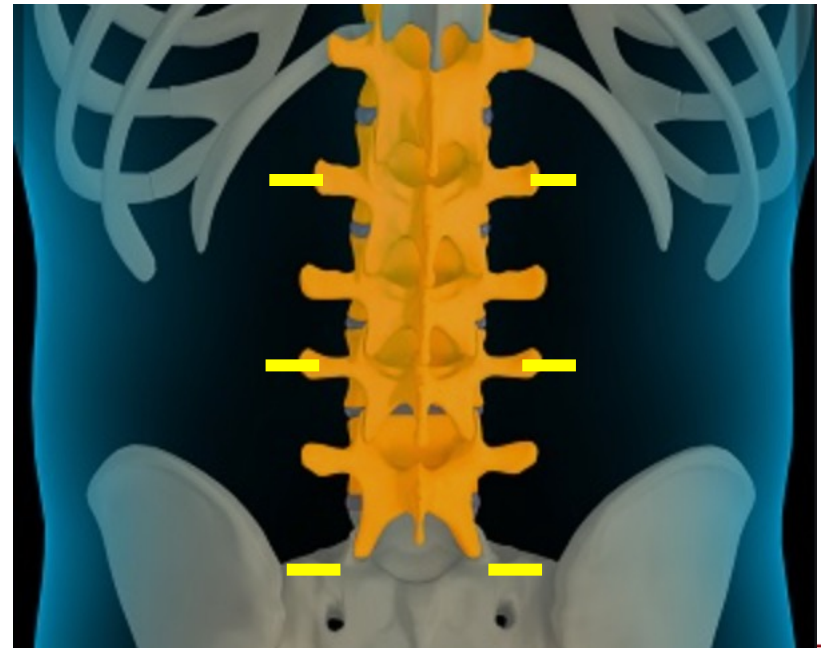
# HOW – Exposure?

- Posterior Spinal Fixation - Fusion:
  - ✓ Skin incision
  - ✓ Soft tissue exposure

OPEN

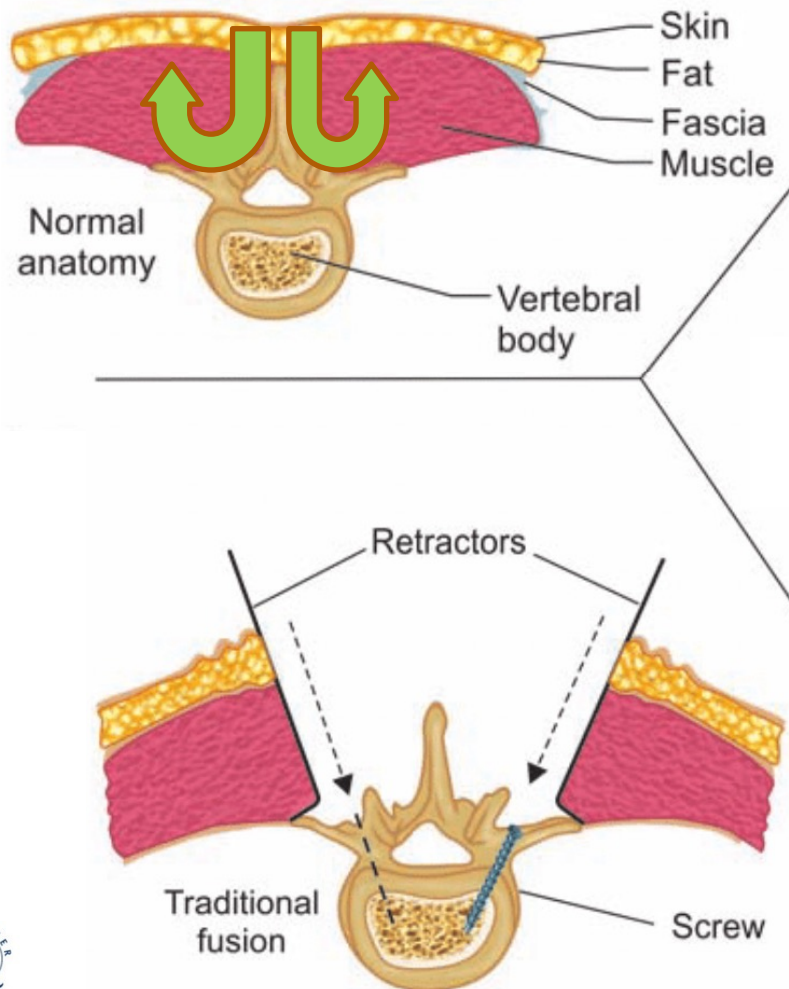


MIS



# HOW – Open Exposure?

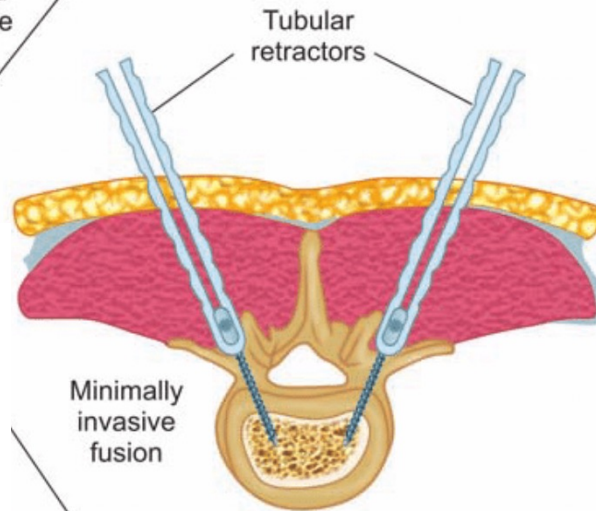
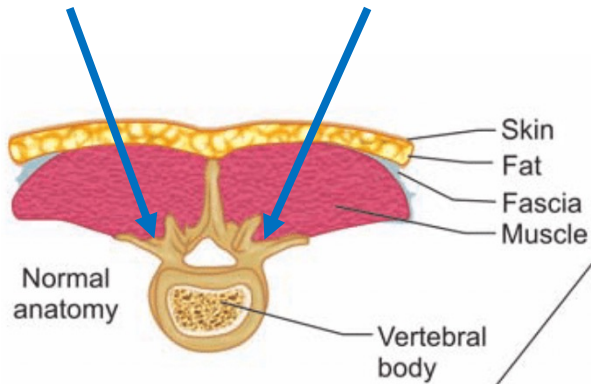
- Posterior Spinal Fixation - Fusion: Open





# HOW – MISS?

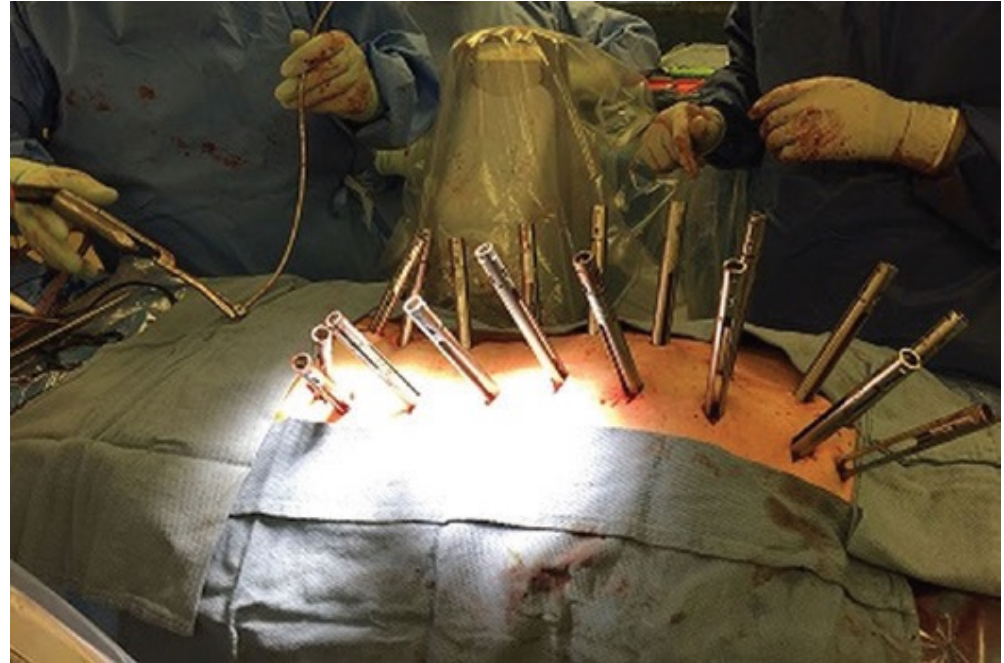
- Posterior Spinal Fixation - Fusion: MIS

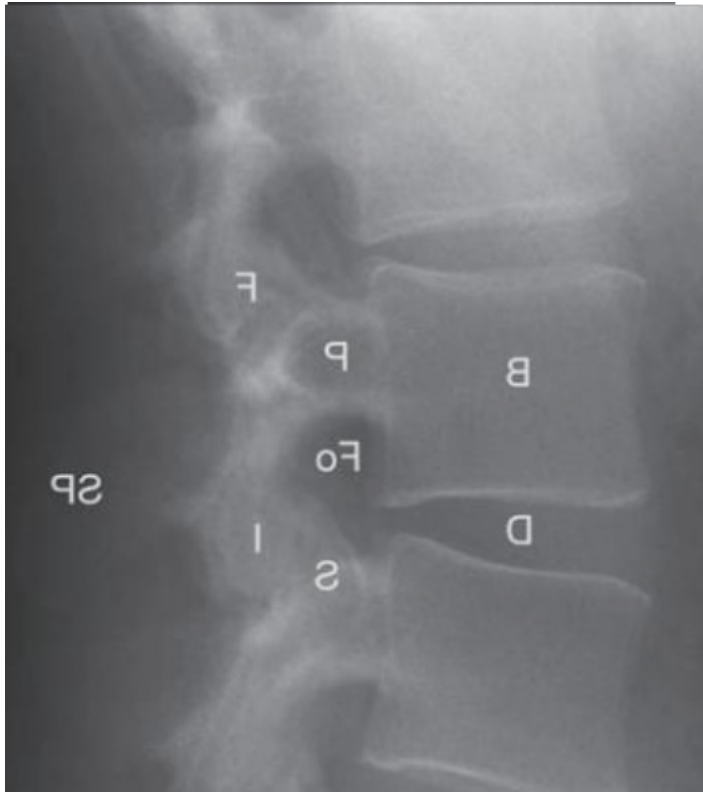


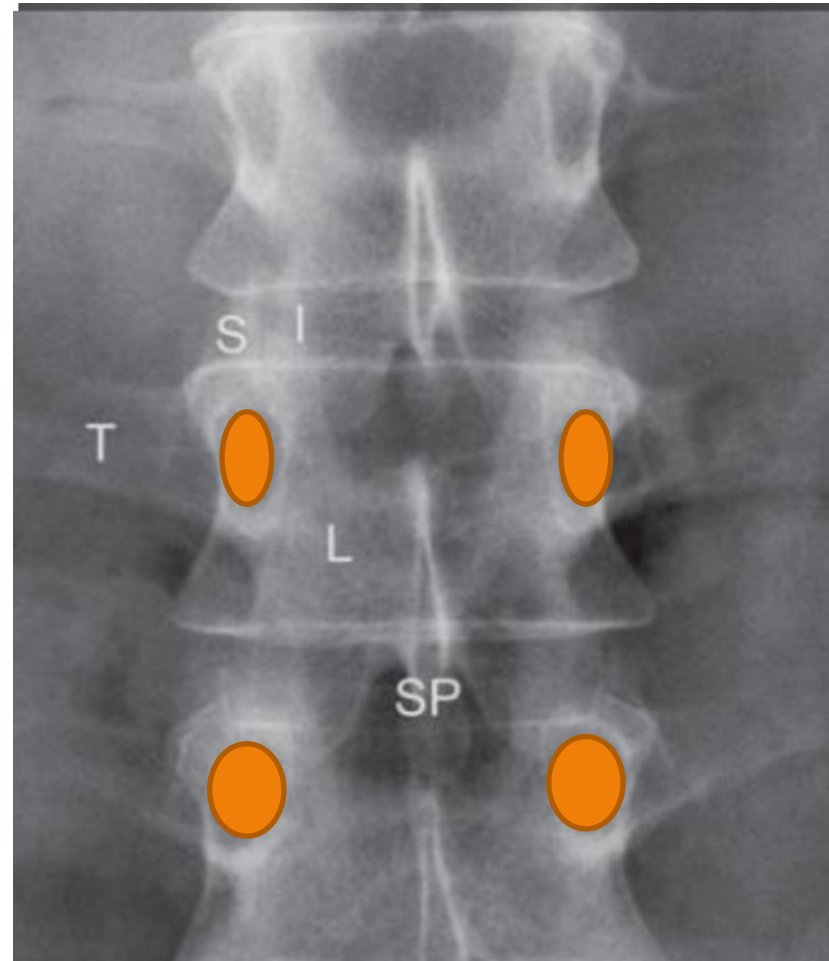
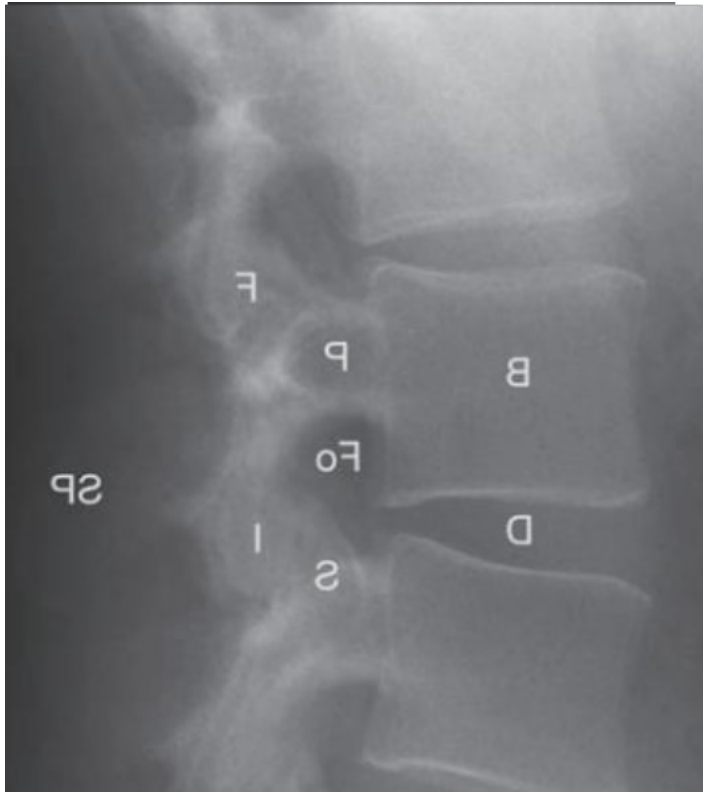
OPEN



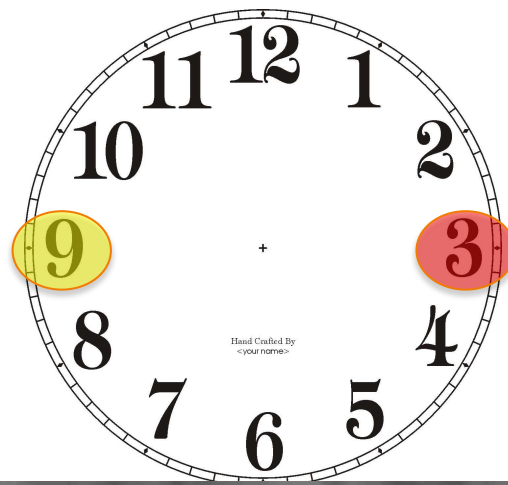
MIS



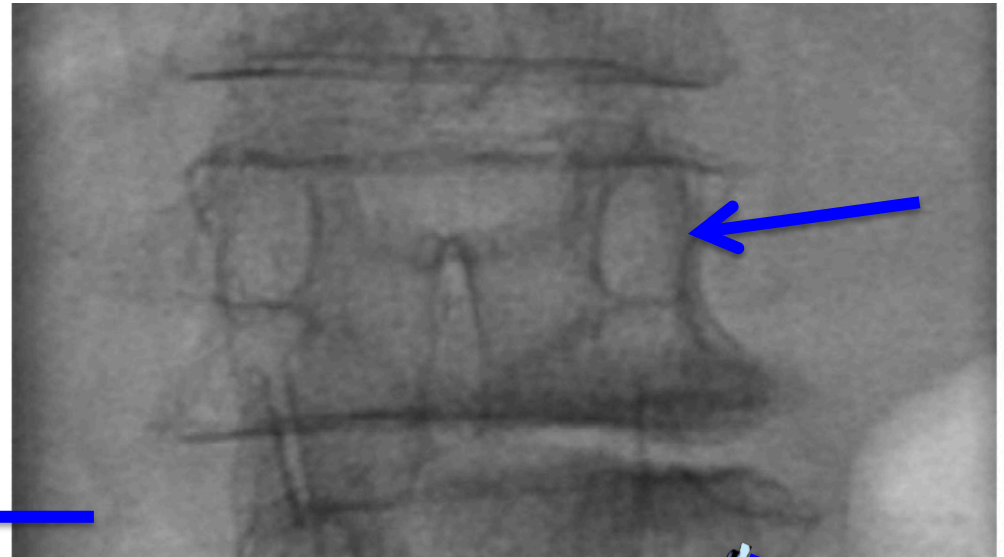




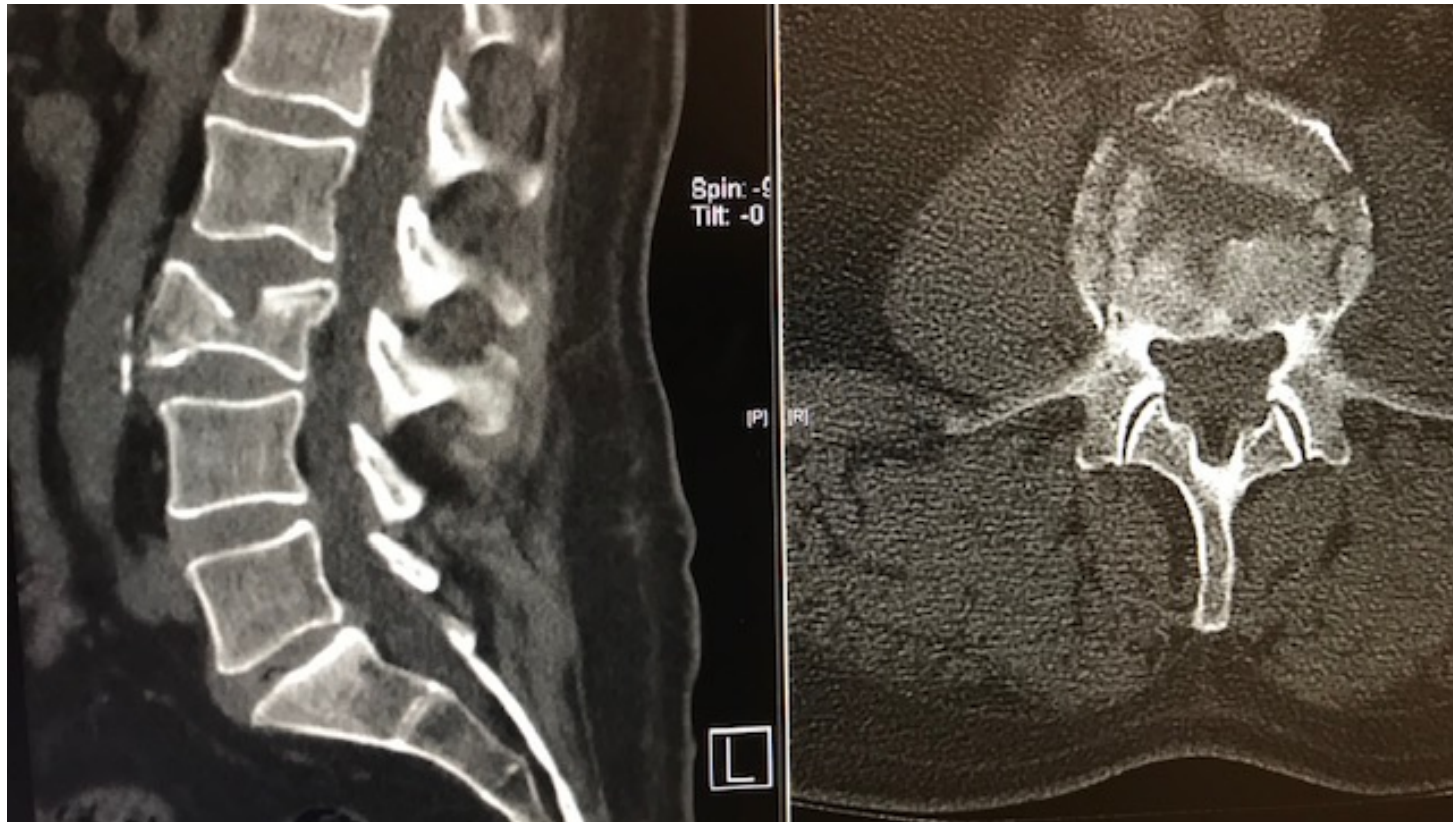


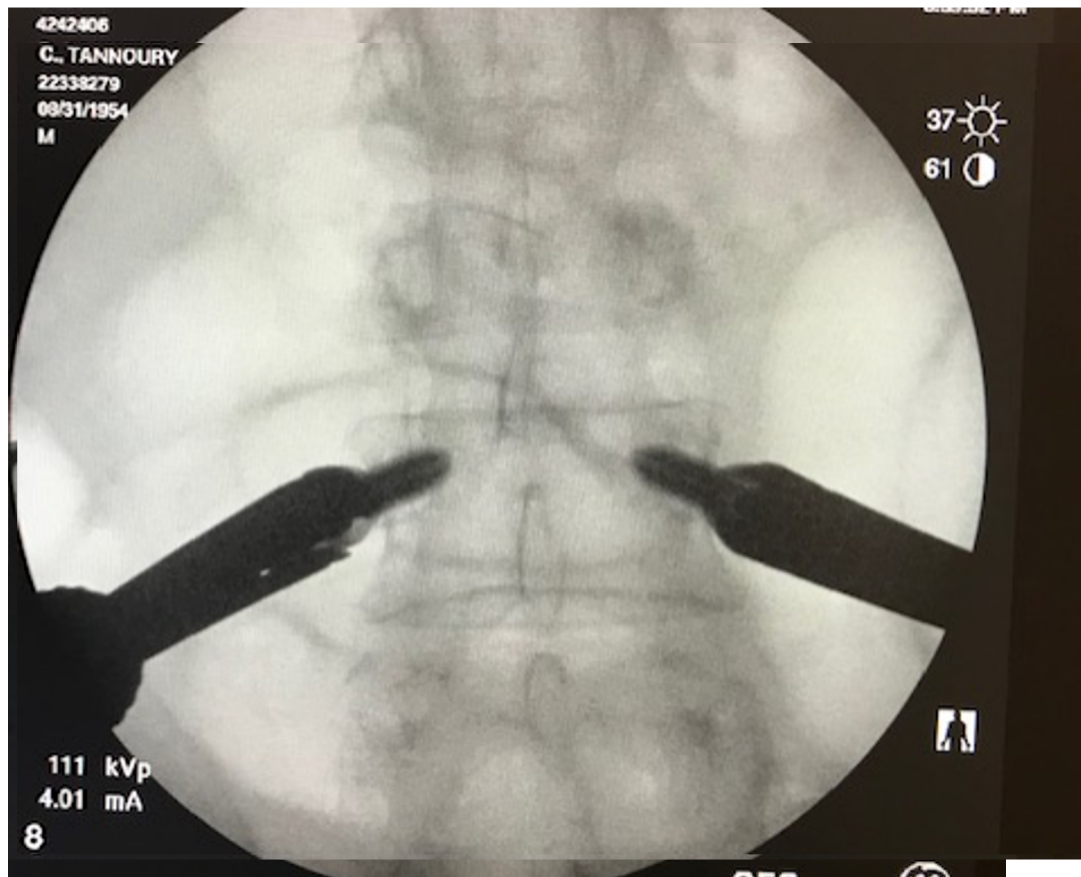


# IDEAL!

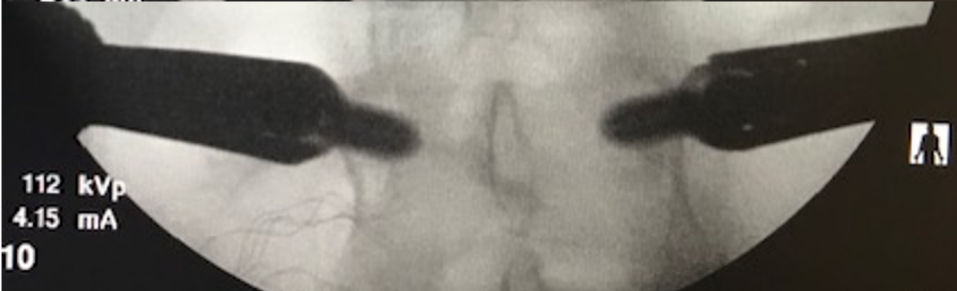


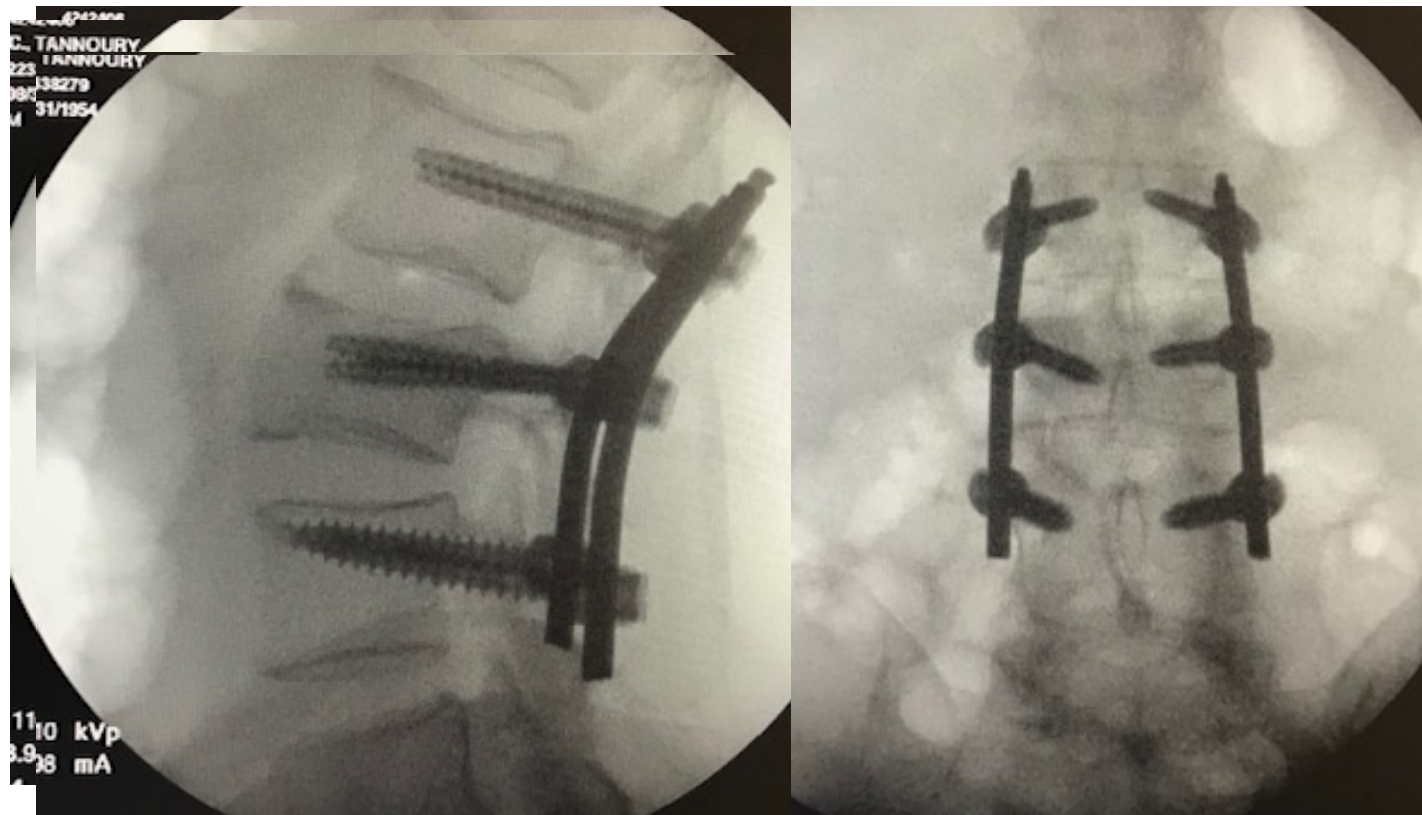
# Illustrative Case



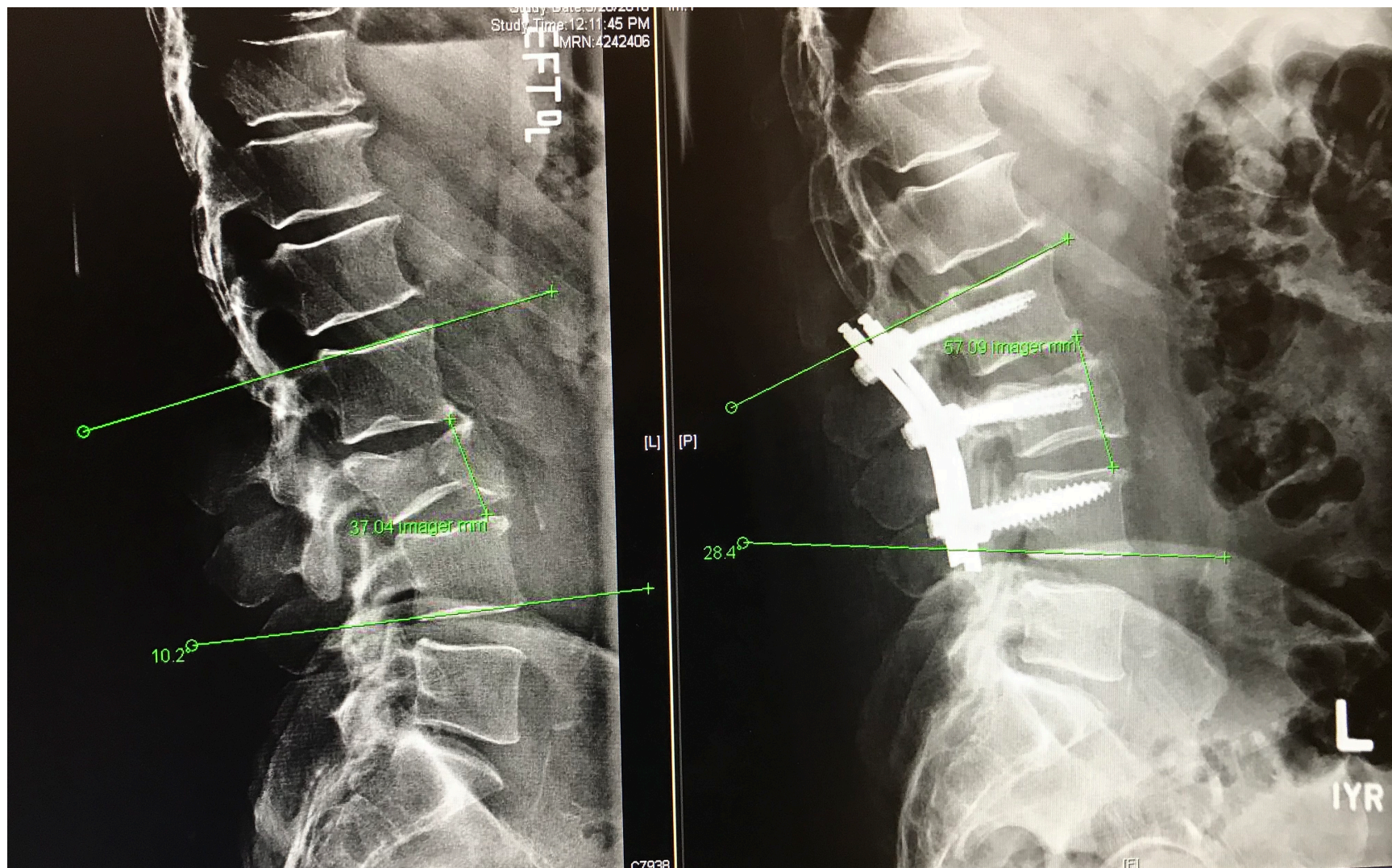




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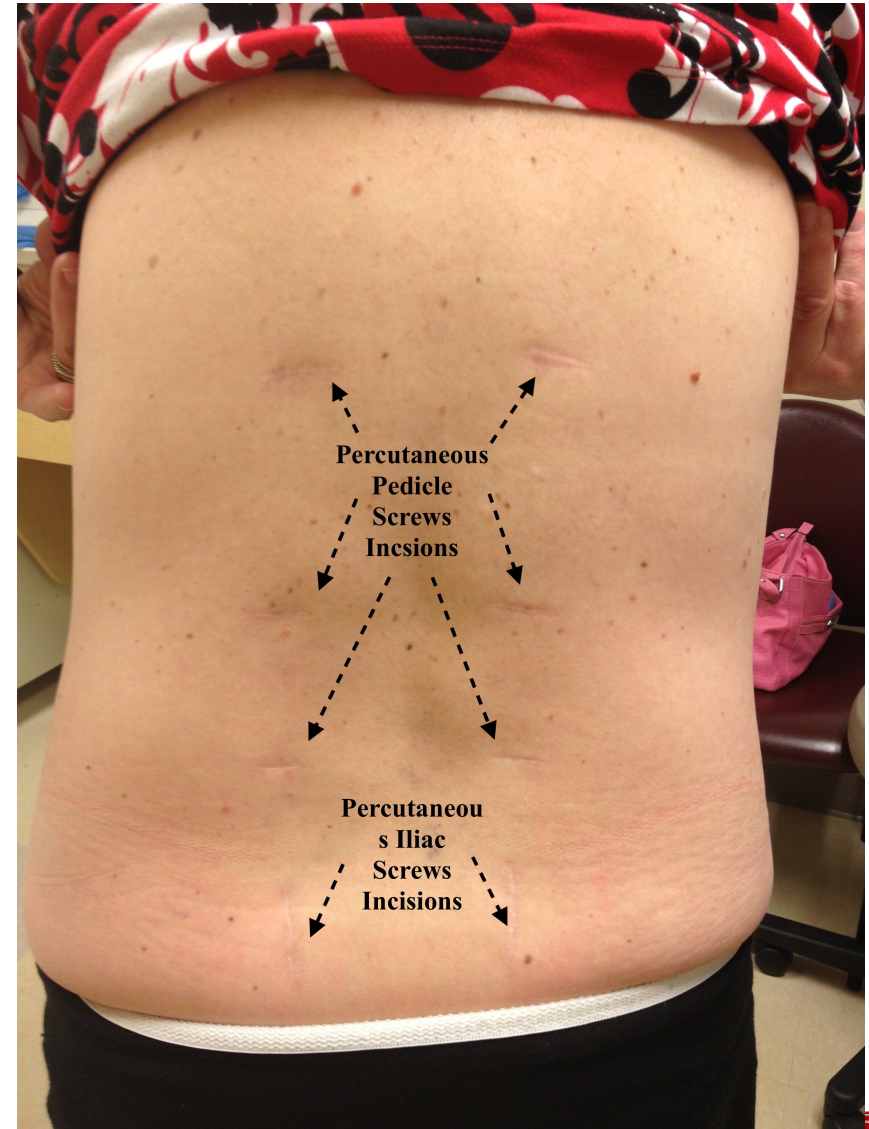






# MIS vs Open Spine Surgery

- MISS: LESS
  - ✓ Soft tissue dissection
  - ✓ Blood loss
  - ✓ Complications (infections, nerve injury, etc.)
  - ✓ Postoperative Pain
  - ✓ Opiates use
- ✓ Faster Recovery
- ✓ Faster return to activity: Productivity





# NEW Technology?

- “Value” driven healthcare: Focus on Quality
  - ✓ Safety: reducing complications
  - ✓ Cost sensitive
- Value =  $\frac{\text{Outcome}}{\text{Cost}}$

# New Technology?

- Computer Assisted Navigation: ~ “GPS”
  - ✓ Accuracy – Safety (Trackers)?
  - ✓ Radiation to patient (CT spin) > Fluoroscopy
  - ✓ Time/labor: OR set up > Fluoroscopy
  - ✓ Cost (upfront & per case) ++ > Fluoroscopy



# Thank You!

