Strategies to Avoid Complications

DePuy Spine Inc.
a Johnson & Johnson company

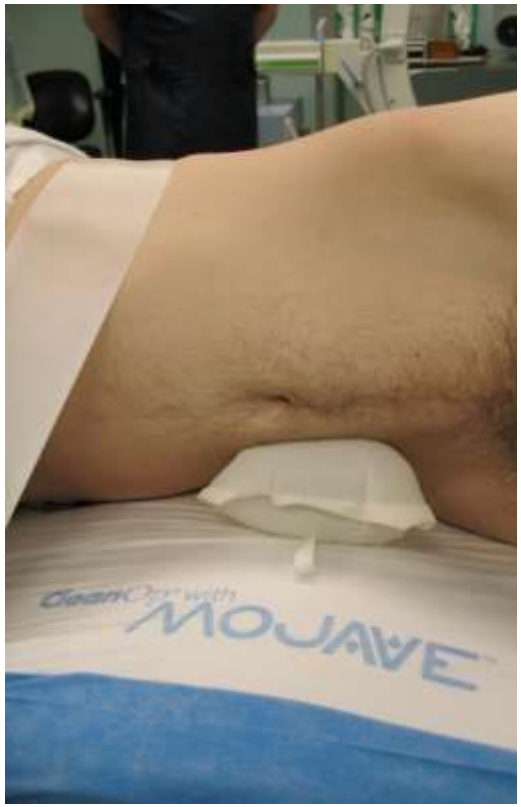
never stop moving™

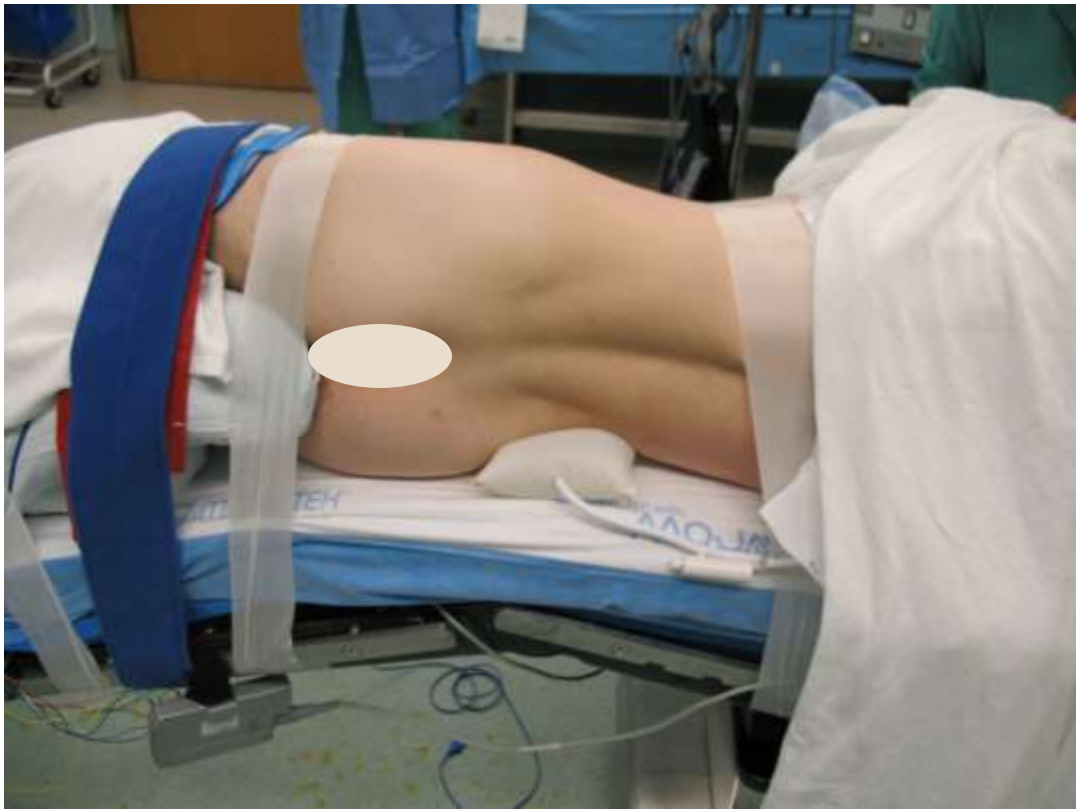
Be Mindful of…

- Bad patient / fluoro positioning
- Patient Anatomy
  - Anomalous vascular anatomy
  - High iliac crest
  - L4-5 lumbar plexus
- Retroperitoneal scarring
- High grade spondylolisthesis
  - L4-5 spondy – caution with L4 nerve roots
- Neurologic
- Bone
  - Osteoporosis
  - Excessive bone removal

Patient / Fluoro Positioning

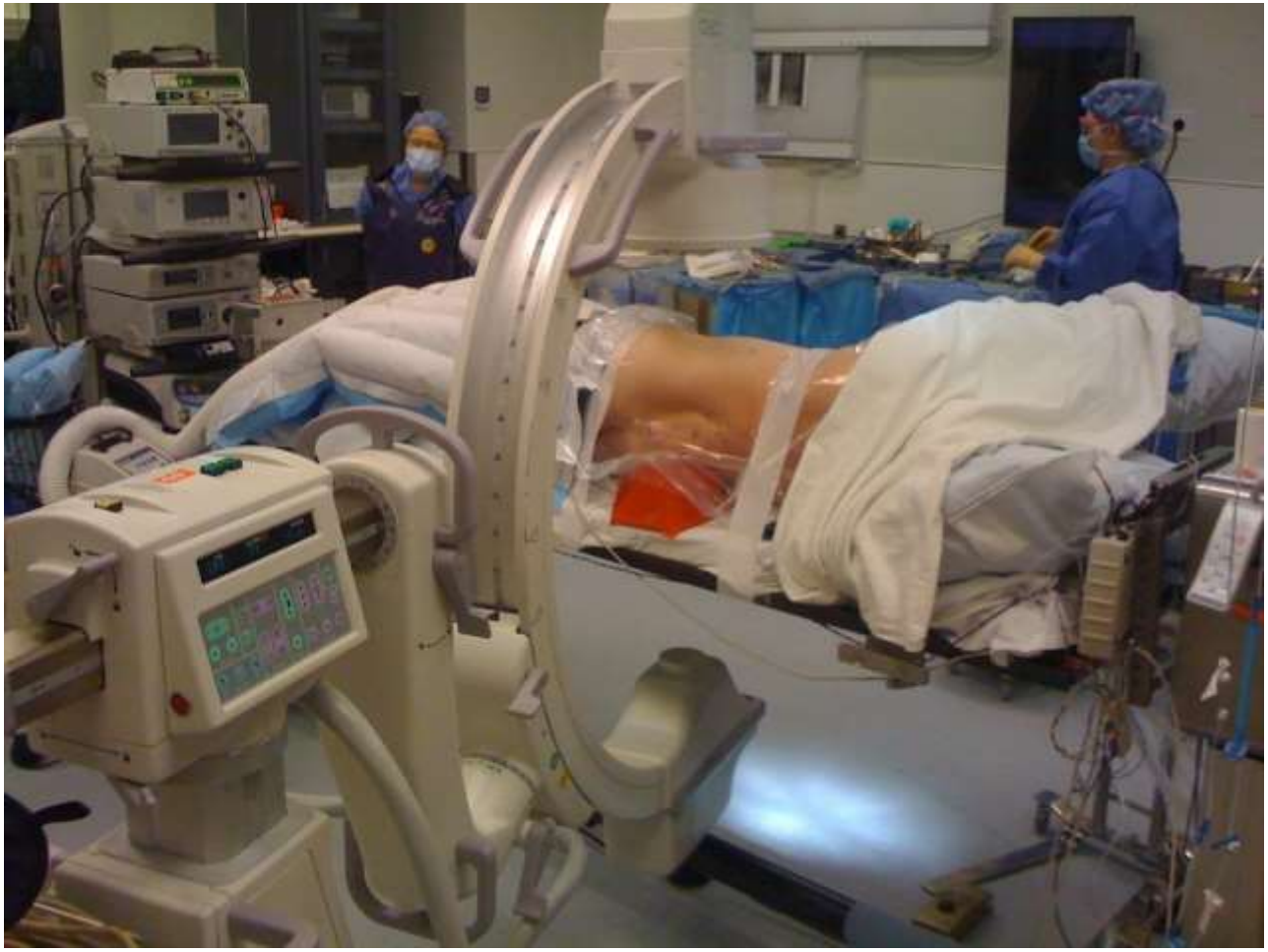
- Starts with good positioning & good fluoro images





Patient / Fluoro Positioning

- Cannot overemphasize the importance of good fluoroscopic images



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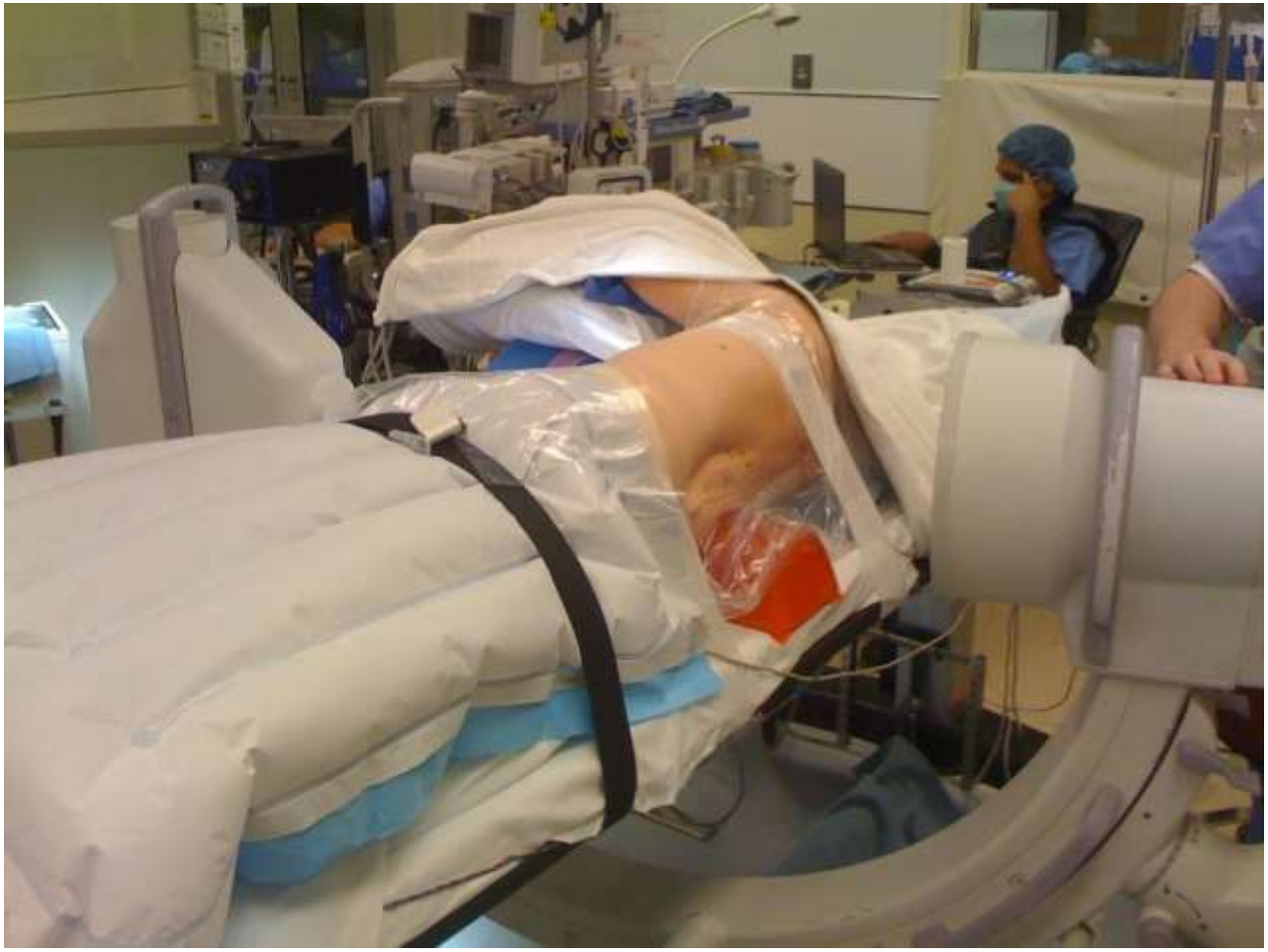
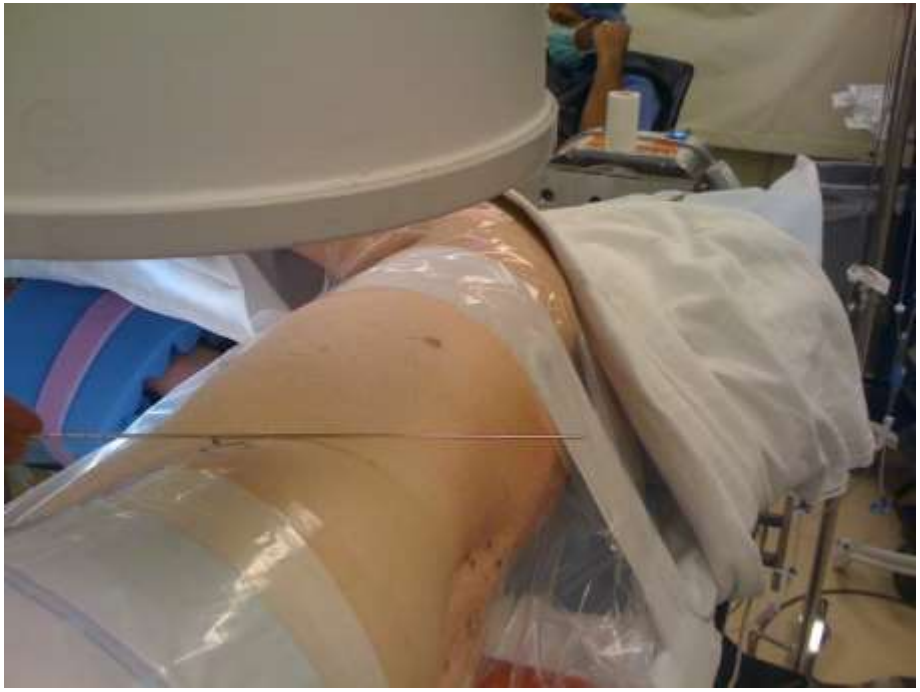
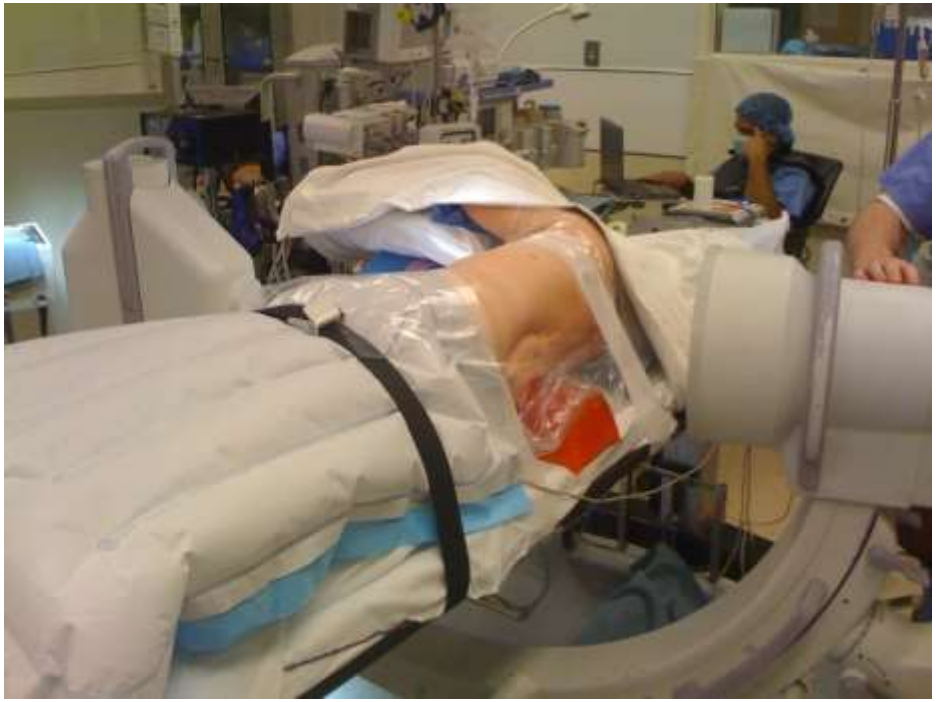


Patient / Fluoro Positioning

- Maintain orthogonal imaging
  - Move **patient** rather than C-arm to obtain square images
  - Avoid parallax



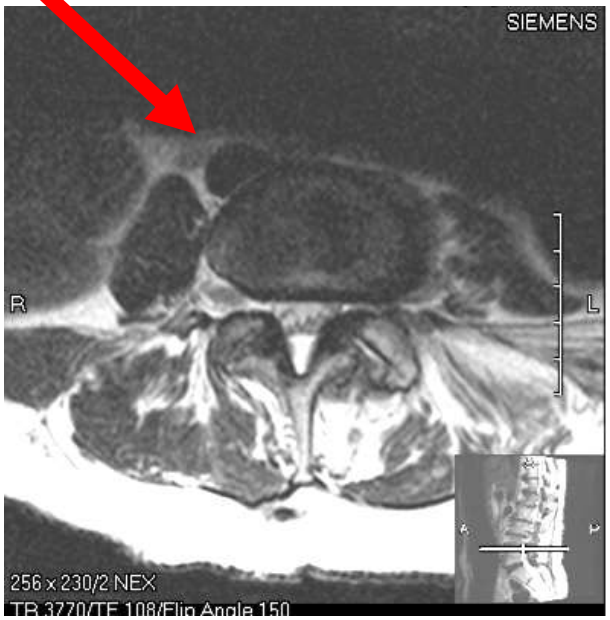


Patient Anatomy

- When selecting patients, it is important to perform a reality check
  - Where is the iliac crest?
    - Important for L4-5 approaches
  - Where are the ribs?
    - Important for approaches above L2-3
  - Does the patient have any malalignment or deformity?
    - Rotational deformity can change the approach angle
    - Spondy can make it difficult to place an optimum graft

Anomalous Vascular Anatomy

- Significant risk of the patient exsanguinating
- Be aware of the vascular anatomy
  - Particularly in the presence of deformity



- Overdistraction leading to vascular injury of calcified and stiff vessels

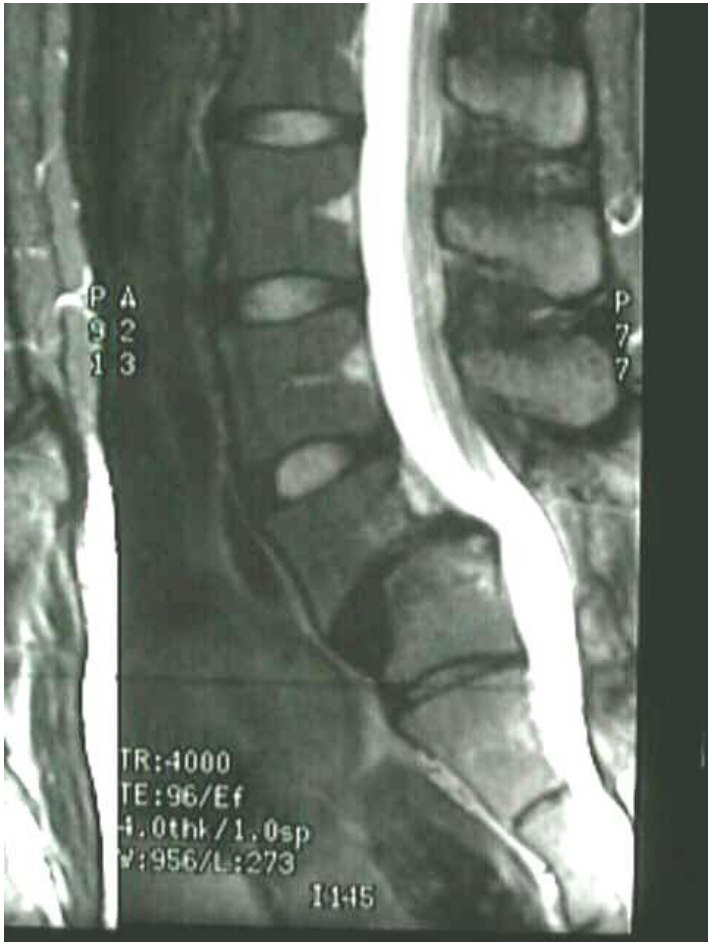
Retroperitoneal Scarring

- Have they had previous retroperitoneal surgery?
  - Scarring, abnormal anatomy
  - If the patient is very thin, they may not have much retroperitoneal fat

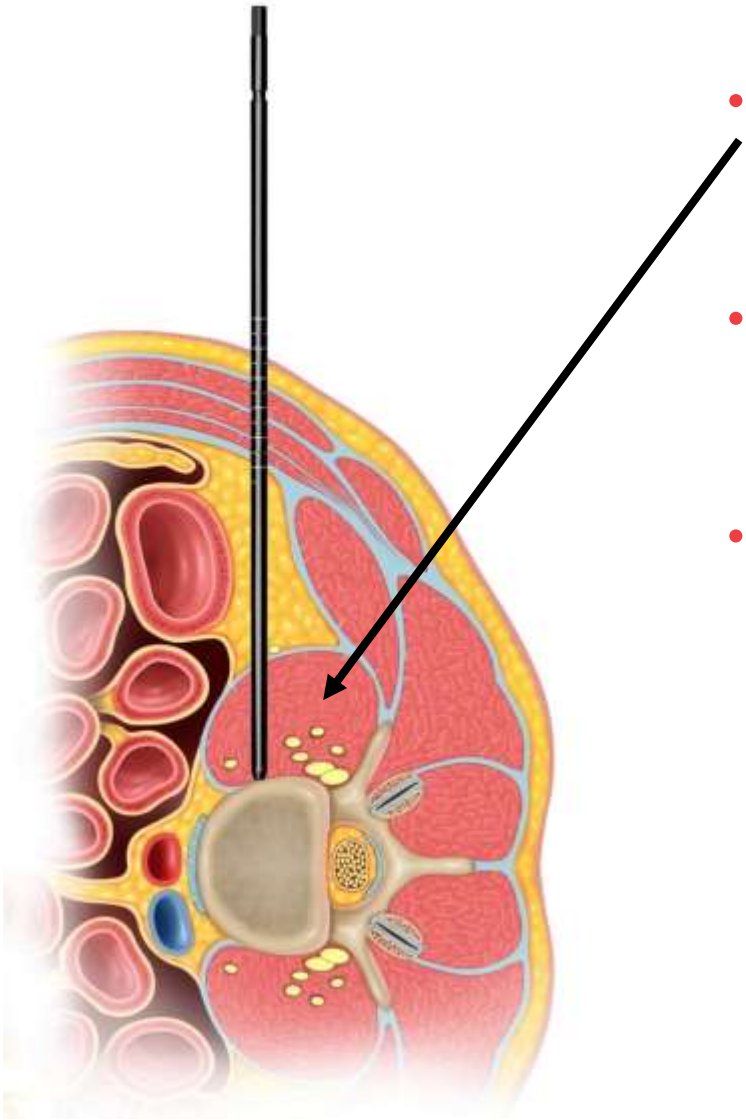
- Remove retractor under direct visualization to examine for retroperitoneal bleeding

High Grade Spondylolisthesis

- Difficult to find center of disc on lateral view
  - Exiting nerve is more anterior



Neurologic



- Be aware of your location within the psoas muscle
- The lumbar plexus is located posteriorly
- Genitofemoral nerve is at L2-3 on surface of psoas
  - Look for it on MRI

Psoas & Neurologic

- Be gentle with psoas muscle
  - Avoid significant bleeding
  - No “Wanding”
  - Do not use mono-polar cautery
- Plexus damage by either not inspecting during dissection or not monitoring
- The danger zone is the posterior portion of the psoas
  - Check where you are with fluoro!
- If you can’t figure out where the nerve is, dissect under direct visualization or abort

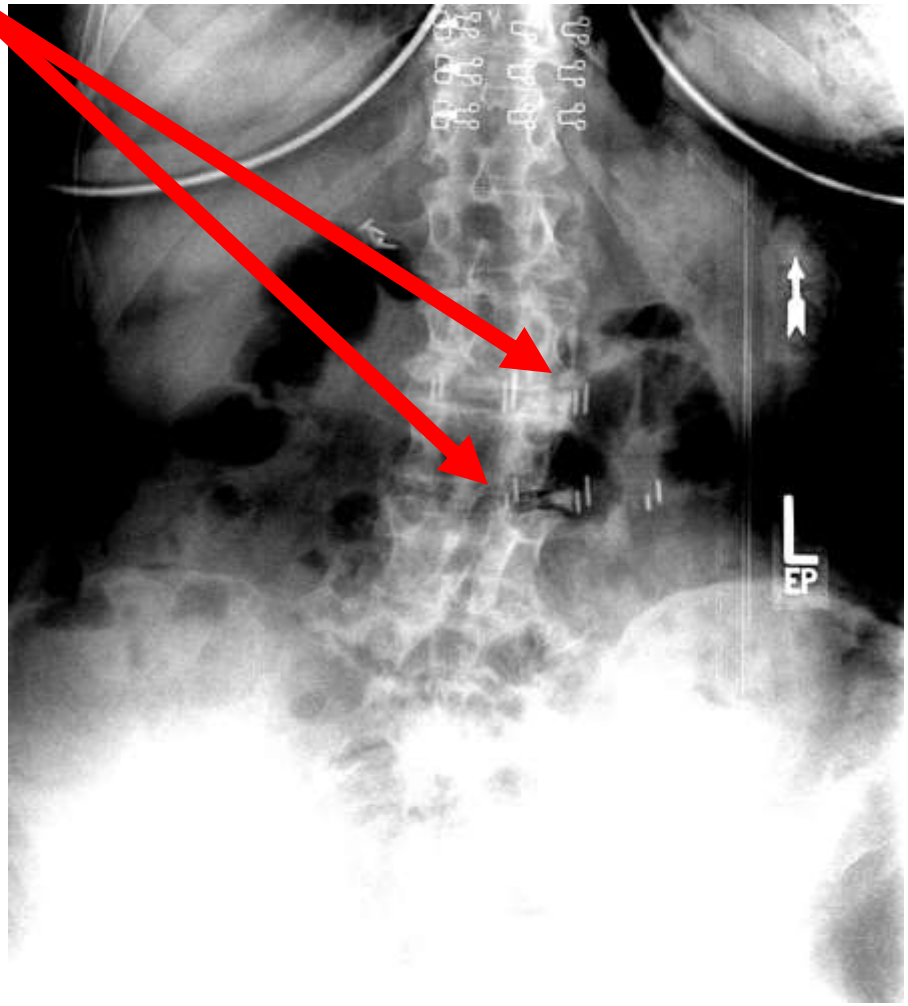
Bone

- Excessive bone removal
  - Can lead to bleeding or hematoma

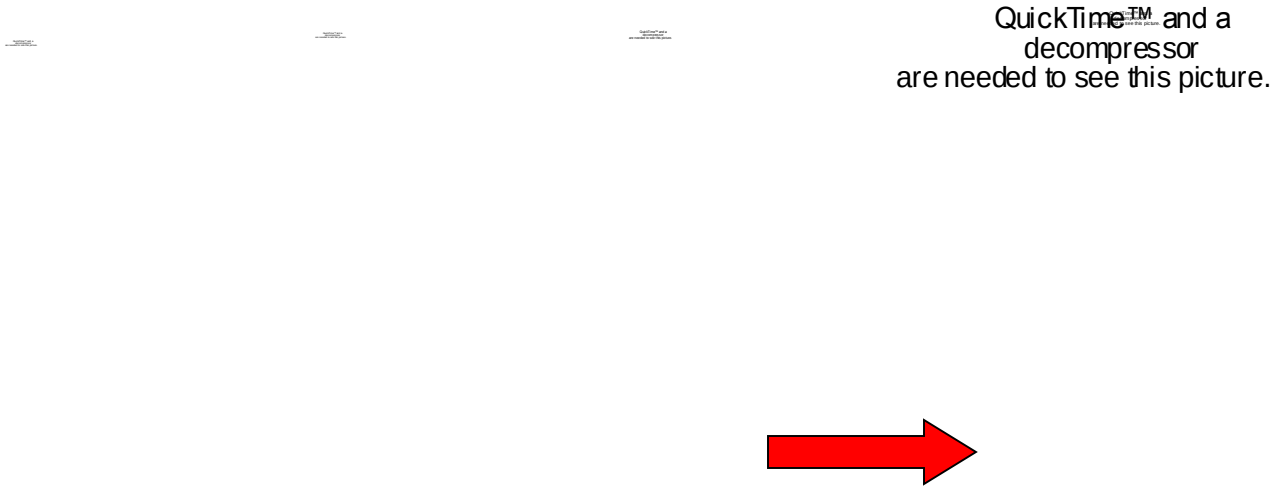
- Osteoporosis can lead to scalloping of vertebrae, inability to distract, settling

Posterior Fixation

- Backup the lateral fusion with posterior fixation, otherwise…



Complication: case 1 scoliosis



Case 2: 46 yo female, failed TDR, Post-op infection, DVT; severe back and leg pain

QuickTime™ and a
decompressor
are needed to see this picture.

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Case 2: *46 yo female, failed TDR, Post-op infection, DVT; severe back and leg pain*

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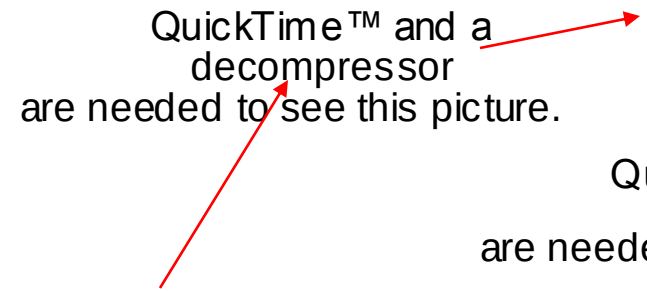
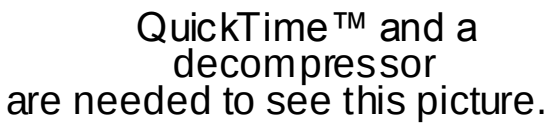
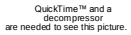
Complication: Case 3 Coronal Fx.







Complication - Case 4

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Questions?