

## Case Review:

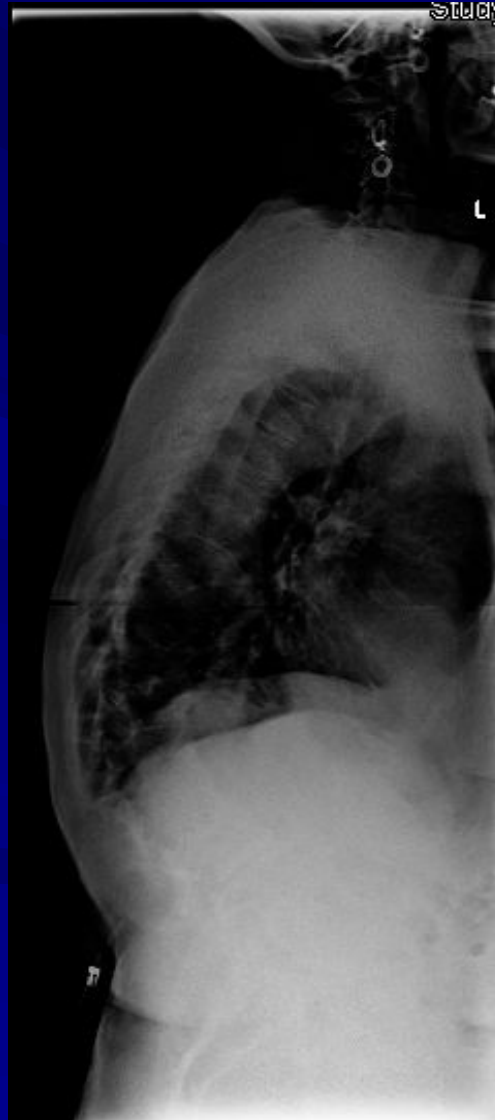
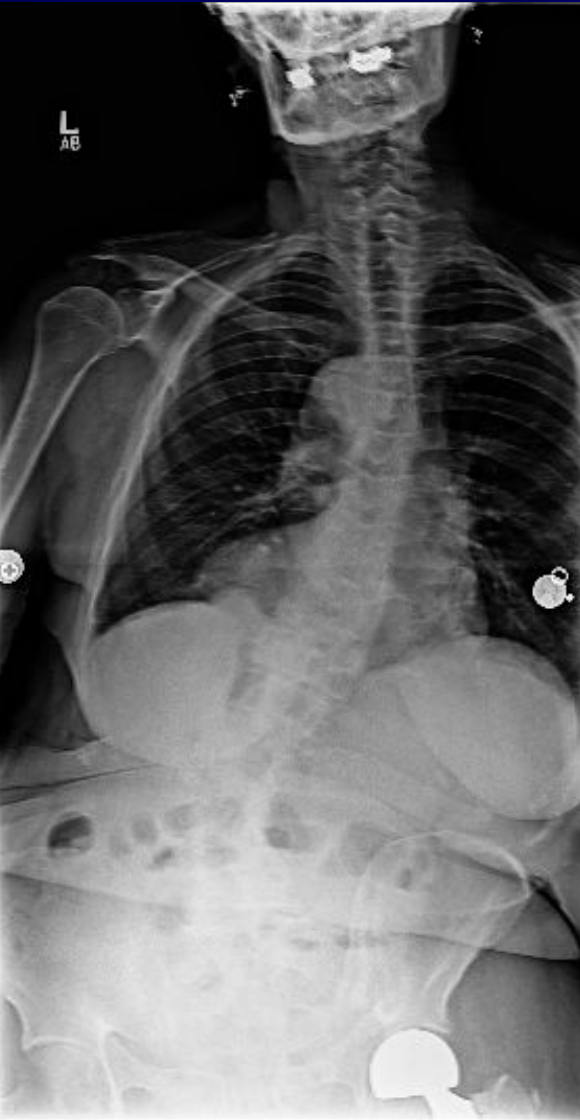
73 year old woman presented  
with Kyphoscoliosis

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# Patient History

- 73 year old with Kim/SRP type 3 kyphoscoliosis
- The patient has known that she has had collapsing spinal deformity originally diagnosed as scoliosis for many years, but over time it has become more disabling with increasing pain and fatigue associated type symptoms.
- 1<sup>st</sup> opinion was for XLIF staged, followed by posterior instrumentation from mid-thoracolumbar spine down to S1
- On physical examination, the patient has significant truncal deviation with what appears to be an elevated hip although this is from shortening of the trunk due to the spinal deformity. The patient seemed to be neurologically intact, ambulating, but has a significant forward decompensation greater than coronal decompensation.

# Pre-op X-rays



The patient has severe kyphoscoliosis with thoracolumbar kyphosis causing forward decompensation at approximately 7 cm and coronal decompensation of close to 6 cm. The kyphosis is centered around the upper lumbar/lower thoracic spine.

Although, the patient has a significant coronal plane displacement, the lion's share of the situation has to do with her kyphosis and a maybe a short angular scoliosis. That is because the patient's proximal thoracic spine is not significantly rotated indicating that this is not primary thoracic scoliotic deformity, and that the kyphosis is probably secondary to issue related into her mid-lumbar spine.

# Flexion/Extension X-Rays



# Indications for Surgery

1. Kim/SRP type 3 Kyphoscoliosis.
2. Degenerative scoliosis, lumbar spine.
3. Severe mid thoracolumbar kyphosis.
4. Multiple level lateral recess stenosis.
5. Spinal stenosis.
6. Severe degeneration, thoracolumbar spine.
7. Status post multiple operations, total hip replacement, knee replacement, multiple comorbidities including advanced age, hypertension.
8. Radiculopathy, low back, causing dysfunction.

# Surgical Strategy

- I would differ in my opinion from previous opinions that the patient would not benefit from any sort of anterior XLIF or interbody surgery prior to having a posterior instrumented fusion. Not only that, but according to the KIM SRP Classification, the patient's forward decompensation as well as thoracolumbar kyphosis has been shown to necessitate instrumentation of her whole spine, approximately T2 down to the pelvis.
- I told her that only through a principal application of well-proven strategies would, in the end, balance of her spine be induced. Newer procedures that involve so-called minimally invasive or XLIF interbody procedures were not devised for kyphosis and would be misapplied in this particular scenario.

# Surgical Strategy

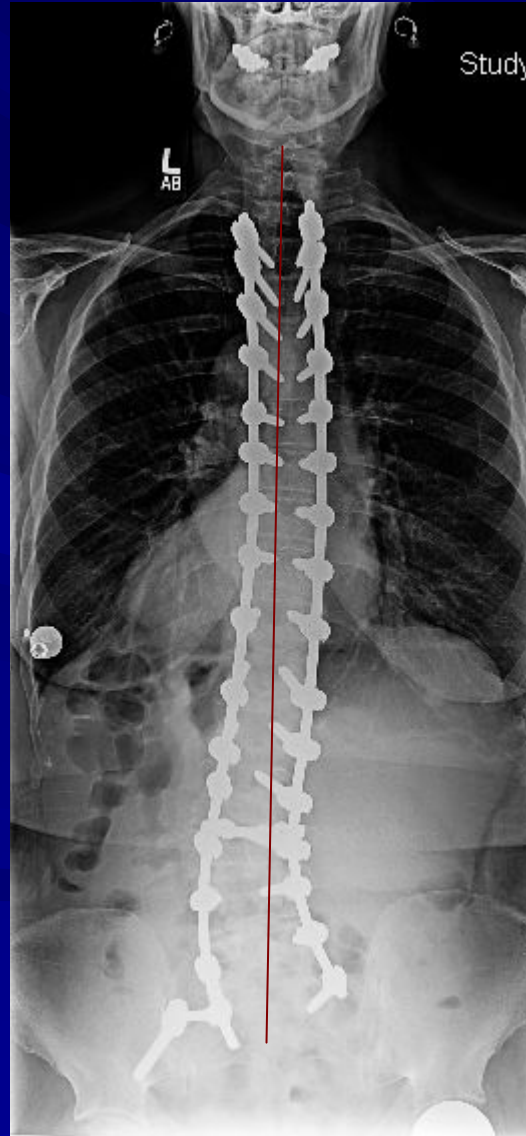
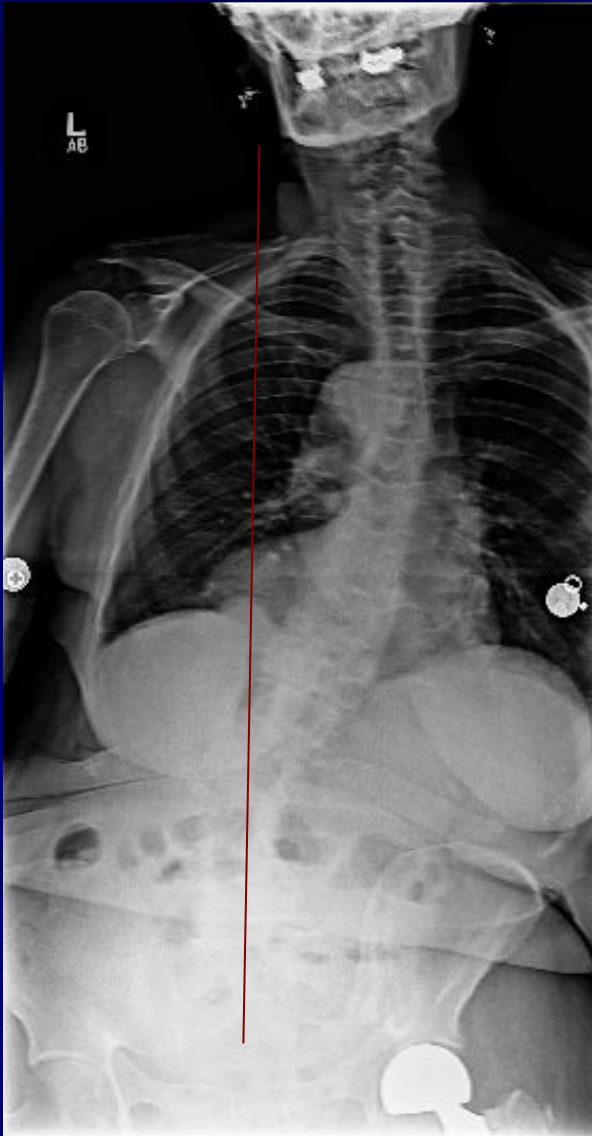
- T2 to sacral pelvis pedicle screw rod segmental spinal instrumentation.
- Posterior spinal fusion, T2 to sacral pelvis using locally- harvested autogenous bone and rhBMP.
- Multiple level spinal osteotomy including Ponte-Smith PEEK facetectomy from T5 to L4.
- Interlaminar decompression, T11 to L3 for spinal stenosis and spinal loosening.
- Sacral pelvic fixation through separate incision, right iliac crest.
- Intraoperative O-arm navigation for placement of spinal screws and decompression, lumbar spine.
- Intraoperative somatosensory-evoked potential management.

# Post-Op Films



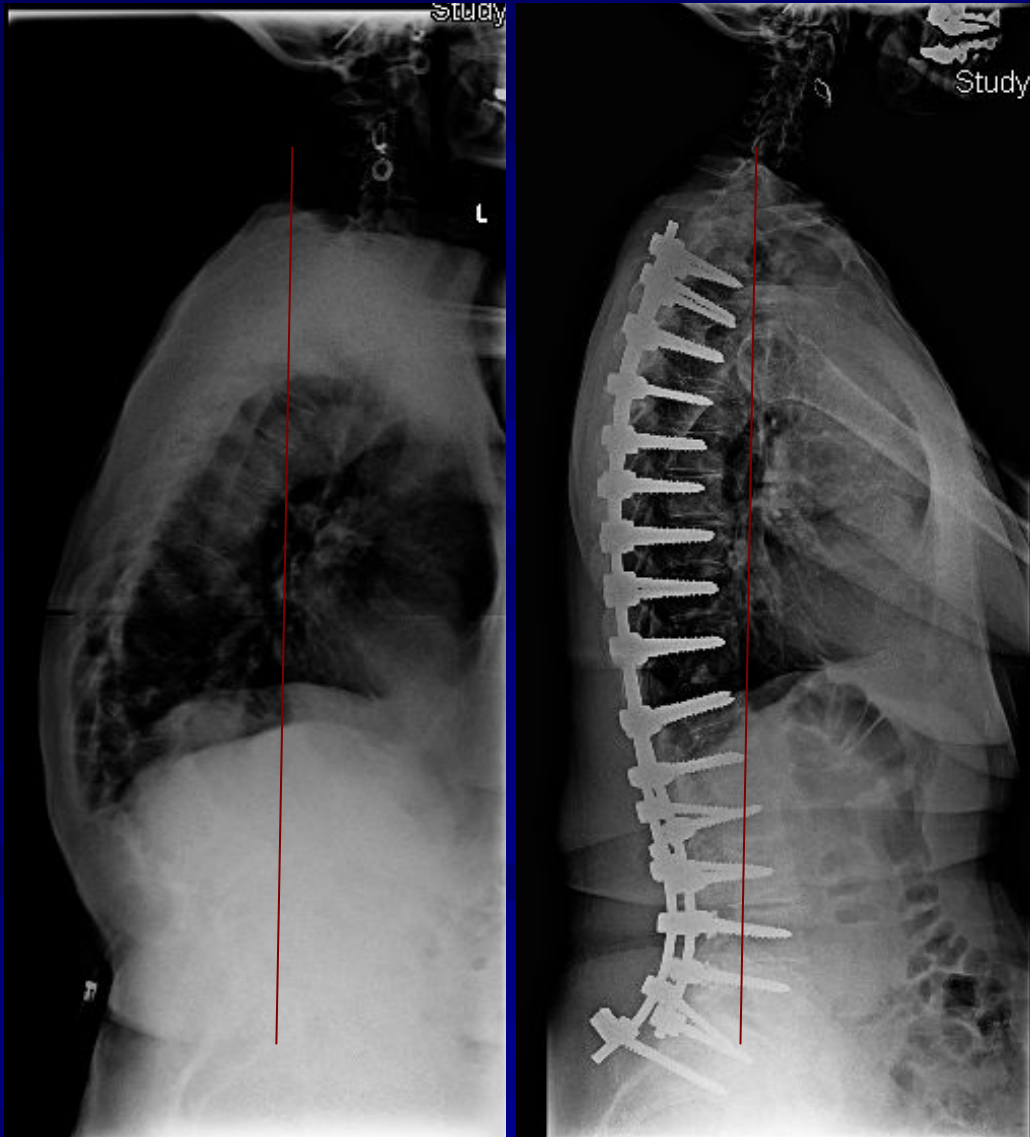
The patient is doing well. She is thrilled about her upright stance. Her kyphosis has been completely corrected. She has minimal pain. Her incision is perfectly well healed. The patient is ambulating, doing quite well, and her x-rays show excellent frontal and sagittal plane balance. The patient is doing well.

# Pre-Op/Post-op Comparison



The patient is perfectly balanced in the frontal plane. (her head is over her hips)

# Pre-Op/Post-op Comparison



The patient is perfectly balanced in the sagittal plane. (her head is over her hips)