



## Case Review:

Ankylosing Spondylitis  
treated with Pedicle  
Subtraction Osteotomy  
(PSO) and Posterior Spinal  
Fusion from T10-L5

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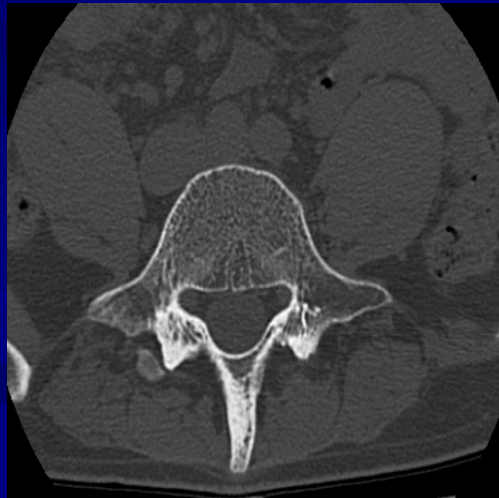
# Patient History

- 34-year-old male from Arizona
- 4-year history of fulminant ankylosing spondylitis in the inflammatory phase and now has forward-flexed gait and decompensation.
- The patient has decreased lumbar lordosis and has articular cartilage in his hip joints.
- His SI joints appear to be fused.
- The patient has significant disability from slower flexed gait which is non-passively corrected.

# Pre-op Films



# Pre-Op Films



The patient has severe forward decompensation with thoracolumbar kyphosis, lumbar kyphosis and coronal plane imbalance.

The patient has no passive extension as the CT scan has shown almost complete ankylosis of the facet joint in the thoracolumbar spine.

The patient's cervical spine is mobile and he has some hip flexion contractures. The SI joints are in partial fusion and hips are mobile.

The patient has severe sagittal plane decompensation and requires spinal osteotomy with instrumentation.

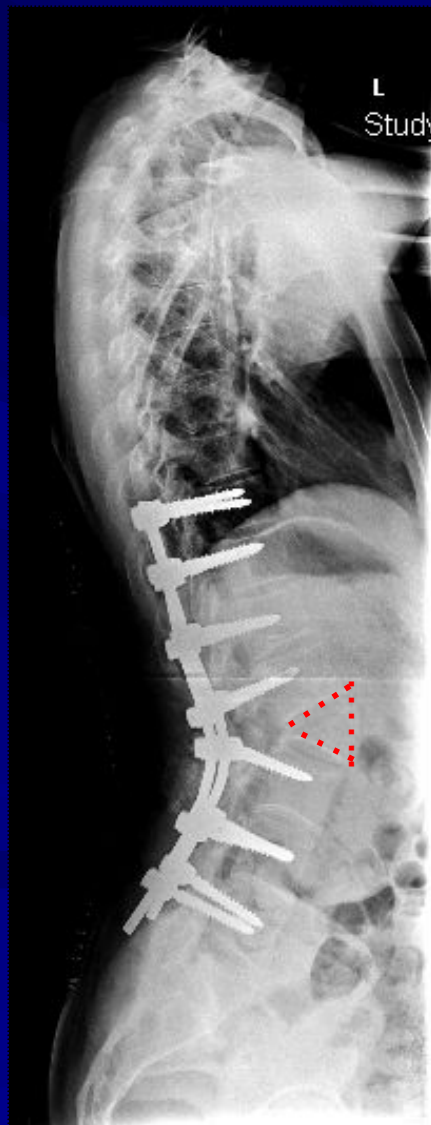
# Indications for Surgery

- Ankylosing spondylitis.
- Severe sagittal plane decompensation due to ankylosing spondylitis.
- Lumbar and thoracolumbar kyphosis.
- Low back pain due to L4 decompensation.
- Osteopenia.

# Surgical Strategy

1. Kyphectomy, pedicle subtraction osteotomy and vertebrectomy, L2.
2. Laminectomy, L1 and L3, nerve root decompression bilaterally and spinal osteotomy. (PSO)
3. Segmental spinal arch instrumentation using Alphatec stainless steel screw-rod construct at T10-L5.
4. Posterolateral fusion, T10 to L5 using locally-harvested autogenous bone and kyphectomy bone.
5. Microdecompression, nerve roots bilaterally, all microdecompressions under loupe magnification.
6. Intraoperative SSEPs.
7. Intraoperative fluoroscopy.
8. Mayfield pin fixation, cranium.

# Post-Op Films



← Pedicle Subtraction Osteotomy (PSO)

# Pre-Op/Post-op Comparison



The patient's balance was restored, and he can now stand up straight.

His posture is excellent, and he is very happy with the results.