Case Review:

45 year old female with Iatrogenic Flatback after several spine surgeries for Adolescent/Adult Idiopathic Scoliosis

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Patient History

- 45-year-old female.
- Iatrogenic flat back due to multiple posterior instrumented and non-instrumented fusions for adolescent idiopathic scoliosis.
- The patient is Opioid dependant and is a smoker.
- Has had multiple non-unions despite many attempts at posterior instrumented fusion and anterior interbody fusion with allograft to thoracotomy.
- The patient had a teratoma, and had chemotherapy in the past.
- The patient has weakness in the lower extremities, pain in the lower extremities.

Pre-op X-rays

It is impossible for the patient to stand up straight.

Flat back syndrome is incompatible with daily function because, as time goes on, the back musculature gets strained as it tries to compensate from having your had the neck and previously fusion out of balance well in front of the pelvis.

Indications for Surgery

1. Iatrogenic flat back.
2. Status post multiple operations for adolescent and adult idiopathic scoliosis, including an in situ posterior non-instrumented fusion
3. Now with unremitting low back and leg pain with clinical loss of lumbar lordosis and forward decompression.
4. Multiple motor sensory deficits due to multiple past surgery.
5. Multiple co-morbidities, including status post removal of teratoma, status post chemotherapy, radiation and has ongoing opioid dependence.

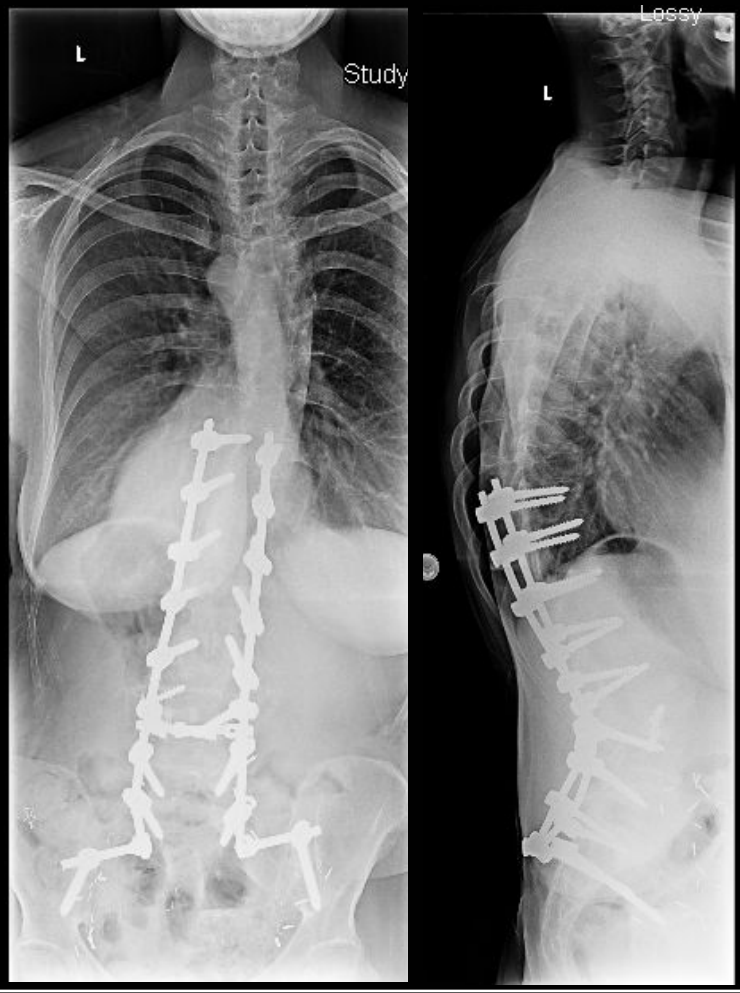
Surgical Strategy

- Segmental spinal instrumentation, T10 to sacral pelvis, using 5.5 stainless steel pedicle screw rod construct.
- Pedicle subtraction osteotomy, kyphectomy and complete vertebrectomy L3 for induction of lordosis.
- Complete laminectomy, L2, 3 and 4, re-exploration decompression under the microscope during complete vertebrectomy and pediculectomy.
- Interlaminar decompression, L2-3 bilaterally and L4-5 bilaterally, for freeing of nerve root preoperative to pedicle subtraction osteotomy.

Surgical Strategy – cont.

- Posterolateral intertransverse fusion and pseudarthrosis repair, L2- 3, 3-4, 4-5 and 5-1.
- Intraoperative use of O-arm with CT scan
- Intraoperative somatosensory-evoked potential and motor-evoked potential evaluation.

Post-op Films



- The sagittal plane balance was restored with the pedicle subtraction osteotomy and a T2 to pelvic fusion.
- There is a slight amount of coronal plane imbalance. Some of this is due to a truncal shift which means that the upper thoracic spine which was fused in an incompletely corrected position is shifted to the right also.
- Our long- term studies show that less than 4cm of coronal plane imbalance is usually associated with a good functional outcome.

Pre-Op/Post-op Comparison