

Case Review:

14 year old female with Adolescent Idiopathic Scoliosis Treated with T3-L4 Posterior Spinal Fusion

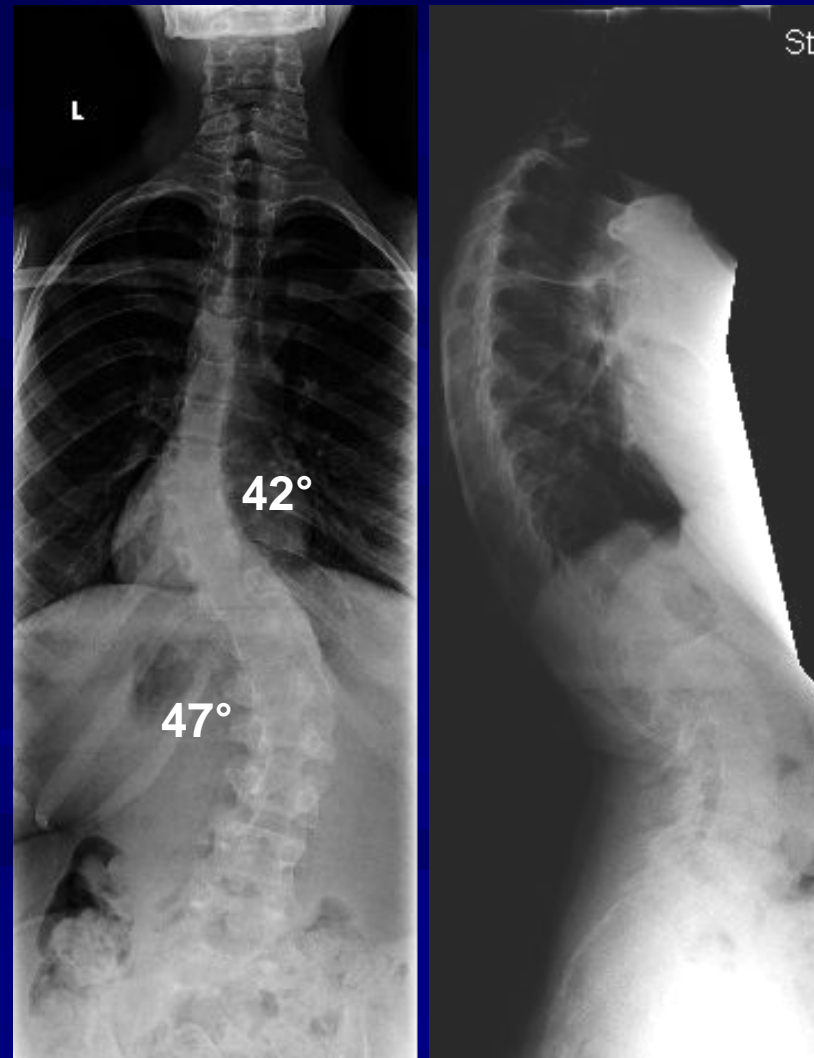
Robert S Pashman, MD

Scoliosis and Spinal Deformity Surgery
www.eSpine.com

Patient History

- 14-year-old female
- Adolescent Idiopathic Scoliosis
- Type 6 curve
- Patient was braced, and was noncompliant
- The past medical history is contributory for renal surgery as a child for hydronephrosis, but there are no other indications of relevant medical history as to non-idiopathic causes for scoliosis.
- Left thoracic rib hump, right lumbar fullness with some element of hyperkyphosis in the thoracic spine.
- Neurologically, she is intact.
- An MRI had been obtained does not show any significant segmentation development, defects in the cervical spine or problems and no significant non-idiopathic causes of scoliosis, such as a spinal cord tumor compression or non-segmentation in the thoracic spine.

Pre-op X-rays



On 36-x-14 x-rays, she has a structural 42° left thoracic curve and a 47° highly rotated thoracolumbar curve also.

On sagittal x-ray, the patient has a 57° thoracic kyphosis, with compensatory hyperlordosis of the lumbar spine. No spondylolisthesis is seen. Spina bifida occulta has been noted and the patient is balanced in the frontal and sagittal plane.

She has an element of a depressed right shoulder also. She is a Risser 4. The x-rays indicate to me that this is a type 6 C positive curve, with element of hyperkyphosis of the thoracic spine, correlating also with a thoracolumbar structural curve and a structural compensatory high thoracic curve also.

Bending X-rays



Right and left side bending x-rays indicate mobility to the distal lumbar curve, so the instrumentation levels would be set more proximally into the curve.

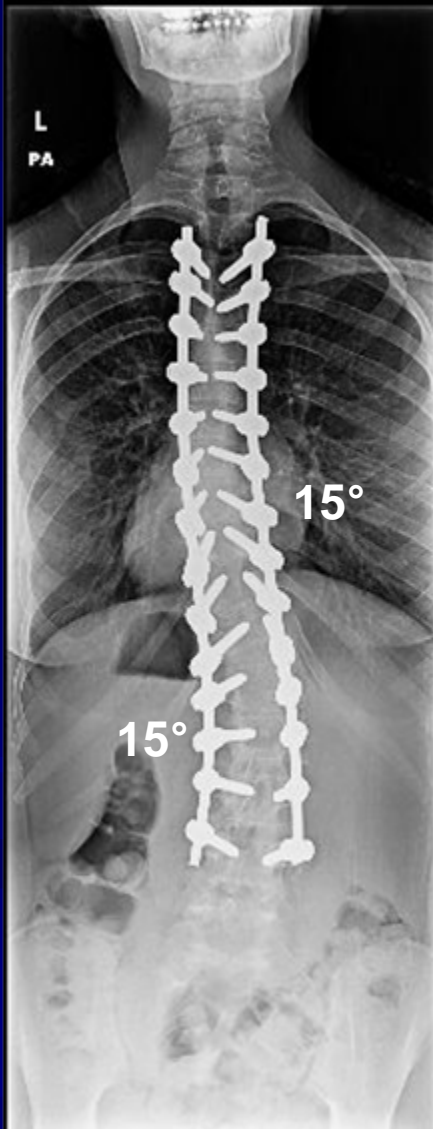
Indications for Surgery

- Progressive adolescent idiopathic scoliosis, type 6.
- Rigid structural curves in excess, 57° thoracolumbar, 47° thoracic, with significant rotation.
- Cosmetic deformity due to massive left rib hump and flank fullness.
- Failed conservative therapy.
- Kyphoscoliosis.

Surgical Strategy

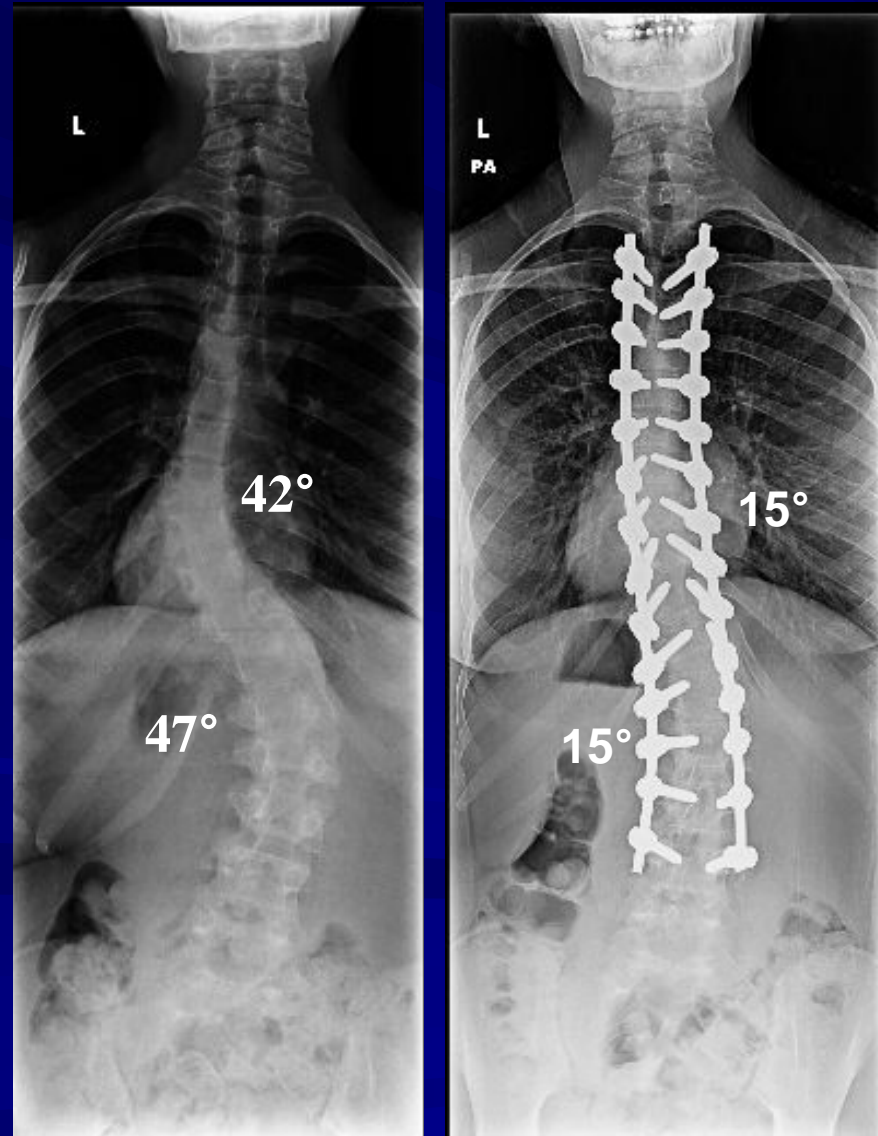
1. Segmental spinal instrumentation, thoracic 3 to lumbar 4, using 5.5 stainless steel screw-rod construct.
2. Multiple-level spinal osteotomy for mobilization of rigid thoracic and lumbar curve, T5 to T11 and T12 to L3.
3. Interlaminar decompression with takedown of mesial facet in midline for decompression of nerves and mobilization of lumbar curve, T12 to L4.
4. Posterior spinal fusion using a combination of harvested autogenous bone and left thoracoplasty rib bone, T3 to L4.
5. Takedown of chest wall multiple-level rib osteotomies, 5 levels, and thoracoplasty for removal of rib hump.
6. Repair of pleura incidental pleurotomy.
7. Intraoperative somatosensory evoked potentials and motor evoked potentials.
8. Intraoperative fluoroscopy.

Post-Op Films



The patient has done quite well. Incision is well-healed. She is very happy with the outcome of her surgery and the cosmetic results.

Pre-Op/Post-op Comparison



The patient's x-rays show an excellent correction. The curve was reduced 32°, her shoulders and hips are even, and she is well balanced in the sagittal plane.

Pre-Op/Post-op Comparison



The patient's rib hump deformity was significantly reduced during surgery.