PREOPERATIVE DIAGNOSIS: , Severe scoliosis.,ANESTHESIA: , General. Lines were placed by Anesthesia to include an A line.,PROCEDURES: ,1. Posterior spinal fusion from T2-L2.,2. Posterior spinal instrumentation from T2-L2.,3. A posterior osteotomy through T7-T8 and T8-T9. Posterior elements to include laminotomy-foraminotomy and decompression of the nerve roots.,IMPLANT: , Sofamor Danek (Medtronic) Legacy 5.5 Titanium system.,MONITORING: , SSEPs, and the EPs were available.,INDICATIONS: , The patient is a 12-year-old female, who has had a very dysmorphic scoliosis. She had undergone a workup with an MRI, which showed no evidence of cord abnormalities. Therefore, the risks, benefits, and alternatives were discussed with Surgery with the mother, to include infections, bleeding, nerve injuries, vascular injuries, spinal cord injury with catastrophic loss of motor function and bowel and bladder control. I also discussed _____ and need for revision surgery. The mom understood all this and wished to proceed.,PROCEDURE: , The patient was taken to the operating room and underwent general anesthetic. She then had lines placed, and was then placed in a prone position. Monitoring was then set up, and it was then noted that we could not obtain motor-evoked potentials. The SSEPs were clear and were compatible with the preoperative, but no preoperative motors had been done, and there was a concern that possibly this could be from the result of the positioning. It was then determined at that time, that we would go ahead and proceed to wake her up, and make sure she could move her

feet. She was then lightened under anesthesia, and she could indeed dorsiflex and plantarflex her feet, so therefore, it was determined to go ahead and proceed with only monitoring with the SSEPs.,The patient after being prepped and draped sterilely, a midline incision was made, and dissection was carried down. The dissection utilized a combination of hand instruments and electrocautery and dissected out along the laminae and up to the transverse processes. This occurred from T2-L2. Fluoroscopy was brought in to verify positions and levels. Once this was done, and all bleeding was controlled, retractors were then placed. Attention was then turned towards placing screws first on the left side. Lumbar screws were placed at the junction of the transverse process and the facets under fluoroscopic guidance. The area was opened with a high speed burr, and then the track was defined with a blunt probe, and a ball-tipped feeler was then utilized to verify all walls were intact. They were then tapped, and then screws were then placed. This technique was used at L1 and L2, both the right and left. At T12, a direct straight-ahead technique was utilized, where the facet was removed, and then the position was chosen under the fluoroscopy, and then it was spurred, the track was defined and then probed and tapped, and it was felt to be in good position. Two screws, in the right and left were placed at T12 as well, reduction screws on the left. The same technique was used for T11, where right and left screws were placed as well as T10 on the left. At T9, a screw was placed on the left, and this was a reduction screw. On the left at T8, a screw could

not be placed due to the dysmorphic nature of the pedicle. It was not felt to be intact; therefore, a screw was left out of this. On the right, a thoracic screw was placed as well as at 7 and 6. This was the dysmorphic portion of this. Screws were attempted to be placed up, they could not be placed, so attention was then turned towards placing pedicle hooks. Pedicle hooks were done by first making a box out of the pedicle, removing the complete pedicle, feeling the undersurface of the pedicle with a probe, and then seating the hook. Upgoing pedicle hooks were placed at T3, T4, and T5. A downgoing laminar hook was placed at the T7 level. Screws had been placed at T6 and T7 on the right. An upgoing pedicle hook was also placed at T3 on the right, and then, downgoing laminar hooks were placed at T2. This was done by first using a transverse process, lamina finders to go around the transverse process and then _____ laminar hooks. Once all hooks were in place, spinal osteotomies were performed at T7-T8 and T8-T9. This was the level of the kyphosis, to bring her back out of her kyphoscoliosis. First the ligamentum flavum was resected using a large Kerrisons. Next, the laminotomy was performed, and then a Kerrison was used to remove the ligamentum flavum at the level of the facet. Once this was accomplished, a laminotomy was performed by removing more of the lamina, and to create a small wedge that could be closed down later to correct the kyphosis. This was then brought out with resection of bone out to the foramen, doing a foraminotomy to free up the foramen on both sides. This was done also

between the T8-T9. Once this was completed, Gelfoam was then placed. Next, we observed, and measured and contoured. The rods were then seated on the left, and then a derotation maneuver was performed. Hooks had come loose, so the rod was removed on the left. The hooks were then replaced, and the rod was reseated. Again, it was derotated to give excellent correction. Hooks were then well seated underneath, and therefore, they were then locked. A second rod was then chosen on the right, and was measured, contoured, and then seated. Next, once this was done, the rods were locked in the midsubstance, and then the downgoing pedicle hook, which had been placed at T7 was then helped to compress T8 as was the pedicle screw, and then this compressed the osteotomy sites quite nicely. Next, distraction was then utilized to further correct at the spine, and to correct on the left, the left concave curve, which gave excellent correction. On the right, compression was used to bring it down, and then, in the lower lumbar areas, distraction and compression were used to level out L2. Once this was done, all screws were tightened. Fluoroscopy was then brought in to verify L1 was level, and the first ribs were also level, and it gave a nice balanced spine. Everything was copiously irrigated, _____. Next, a wake-up test was performed, and the patient was then noted to flex and extend the knees as well as dorsiflex and plantar flex both the feet. The patient was then again sedated and brought back under general anesthesia. Next, a high-speed burr was used for decortication. After final tightening had been accomplished,

and then allograft bone and autograft bone were mixed together with 10 mL of iliac crest aspirate and were placed into the wound. The open canal areas had been protected with Gelfoam. Once this was accomplished, the deep fascia was closed with multiple figure-of-eight #1's, oversewn with a running #1, _____ were then placed in the subcutaneous spaces which were then closed with 3-0 Vicryl, and then the skin was closed with 3-0 Monocryl and Dermabond. Sterile dressing was applied. Drains had been placed in the subcutaneous layer x2. The patient during the case had no changes in the SSEPs, had a normal wake-up test, and had received Ancef and clindamycin during the case. She was taken from the operating room in good condition.