PREOPERATIVE DIAGNOSIS: , Recurrent degenerative spondylolisthesis and stenosis at L4-5 and L5-S1 with L3 compression fracture adjacent to an instrumented fusion from T11 through L2 with hardware malfunction distal at the L2 end of the hardware fixation.,POSTOPERATIVE DIAGNOSIS: , Recurrent degenerative spondylolisthesis and stenosis at L4-5 and L5-S1 with L3 compression fracture adjacent to an instrumented fusion from T11 through L2 with hardware malfunction distal at the L2 end of the hardware fixation.,PROCEDURE: , Lumbar re-exploration for removal of fractured internal fixation plate from T11 through L2 followed by a repositioning of the L2 pedicle screws and evaluation of the fusion from T11 through L2 followed by a bilateral hemilaminectomy and diskectomy for decompression at L4-5 and L5-S1 with posterior lumbar interbody fusion using morselized autograft bone and the synthetic spacers from the Capstone system at L4-5 and L5-S1 followed by placement of the pedicle screw fixation devices at L3, L4, L5, and S1 and insertion of a 20 cm fixation plate that range from the T11 through S1 levels and then subsequent onlay fusion using morselized autograft bone and bone morphogenetic soaked sponge at L1-2 and then at L3-L4, L4-L5, and L5-S1 bilaterally.,DESCRIPTION OF PROCEDURE: ,This is a 68-year-old lady who presents with a history of osteomyelitis associated with the percutaneous vertebroplasty that was actually treated several months ago with removal of the infected vertebral augmentation and placement of a posterior pedicle screw plate fixation device from T11 through L2. She

subsequently actually done reasonably well until about a month ago when she developed progressive severe intractable pain. Imaging study showed that the distal hardware at the plate itself had fractured consistent with incomplete fusion across her osteomyelitis area. There was no evidence of infection on the imaging or with her laboratory studies. In addition, she developed a pretty profound stenosis at L4-L5 and L5-S1 that appeared to be recurrent as well. She now presents for revision of her hardware, extension of fusion, and decompression.,The patient was brought to the operating room, placed under satisfactory general endotracheal anesthesia. She was placed on the operative table in the prone position. Back was prepared with Betadine, iodine, and alcohol. We elliptically excised her old incision and extended this caudally so that we had access from the existing hardware fixation all the way down to her sacrum. The locking nuts were removed from the screw post and both plates refractured or significantly weakened and had a crease in it. After these were removed, it was obvious that the bottom screws were somewhat loosened in the pedicle zone so we actually tightened one up and that fit good snugly into the nail when we redirected so that it actually reamed up into the upper aspect of the vertebral body in much more secure purchase. We then dressed the L4-L5 and L5-S1 levels which were profoundly stenotic. This was a combination of scar and overgrown bone. She had previously undergone bilateral hemilaminectomies at L4-5 so we removed scar bone and actually cleaned and significantly decompressed the dura at

both of these levels. After completing this, we inserted the Capstone interbody spacer filled with morselized autograft bone and some BMP sponge into the disk space at both levels. We used 10 x 32 mm spacers at both L4-L5 and L5-S1. This corrected the deformity and helped to preserve the correction of the stenosis and then after we cannulated the pedicles of L4, L5 and S1 tightened the pedicle screws in L3. This allowed us to actually seat a 20 cm plate contoured to the lumbar lordosis onto the pedicle screws all the way from S1 up to the T11 level. Once we placed the plate onto the screws and locked them in position, we then packed the remaining BMP sponge and morselized autograft bone through the plate around the incomplete fracture healing at the L1 level and then dorsolaterally at L4-L5 and L5-S1 and L3-L4, again the goal being to create a dorsal fusion and enhance the interbody fusion as well. The wound was then irrigated copiously with bacitracin solution and then we closed in layers using #1 Vicryl in muscle and fascia, 3-0 in subcutaneous tissue and approximated staples in the skin. Prior to closing the skin, we confirmed correct sponge and needle count. We placed a drain in the extrafascial space and then confirmed that there were no other foreign bodies. The Cell Saver blood was recycled and she was given two units of packed red blood cells as well. I was present for and performed the entire procedure myself or supervised.