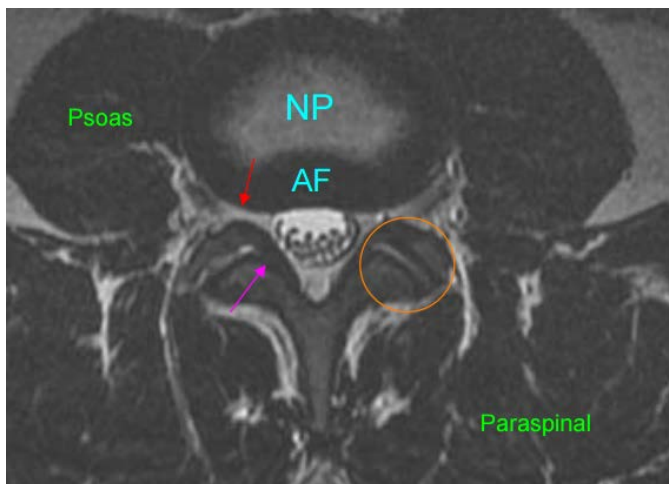
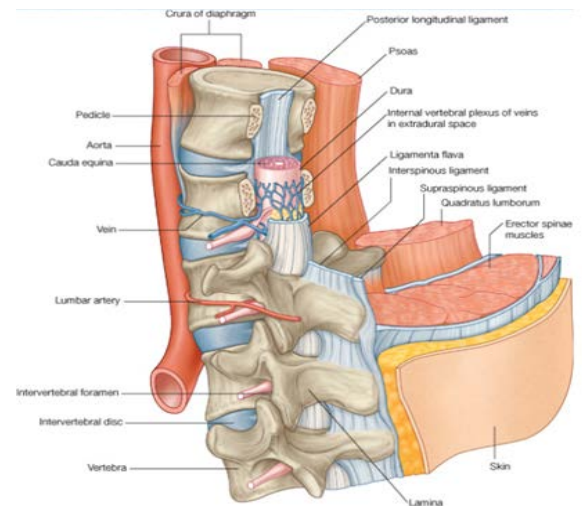


### Lumbar Spine Surgery: Decompression and Fusion



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Occasionally, some patients require further assessment and intervention beyond what a conservative program can offer. As such, we felt it was important to provide a better idea of those options and what they entail. Specifically, we wanted to review spinal decompression and fusion in the form of a case study. A pleasant 66-year-old retired male was referred to ISAEC with a six-month history of progressive bilateral lower leg pain. Examination revealed that the leg pain was immediately aggravated by extension, walking, and standing, and relieved by sitting and flexion. Neurological examination did not reveal any neurological deficits. He presented with no yellow flags and low chronicity risk scores. Based on his clinical presentation, he was diagnosed with intermittent leg dominant pain likely due to lumbar spine stenosis. I provided him with a flexion based exercise program, and after limited improvement with this conservative approach, he was referred for a surgical consultation. In the interim, he was advised to continue with his flexion based exercises and positions of relief to help alleviate symptoms. His ISAEC surgical consultation confirmed the clinical diagnosis. His MR imaging revealed evidence of spinal stenosis at L3-L4 and L4-L5 due to ligamentum flavum hypertrophy, facet arthrosis, and DDD. Due to his persistent symptoms and significant functional limitations he was deemed a good candidate for a 2-level lumbar decompression and fusion. This type of procedure provides space for the compressed nerves by opening up the posterior aspect of the spinal canal. The procedure involves a central incision which is retracted to expose the spinal posterior elements. The lamina and posterior elements at the affected levels are identified and removed preserving the facet joint articulations above and below the fusion at the unaffected



Review of normal anatomy of the lumbar spine on MRI in the transverse plane. The right side of the image corresponds to the left side of the body while the top of the image corresponds to the anterior aspect of the body.

NP = Nucleus Pulposus; AF = Disc Annular Fibres; Yellow Circle = Left Lumbar Spine Facet Joint; Purple Arrow = Mildly Thickened Ligamentum Flavum; Red Arrow = Right Lateral Recess (Exiting Spinal Nerves)

levels. Screws are then inserted into the pedicles of the vertebral segments to be fused and bridging rods are added to immobilize these segments. Bone autografts from the removed posterior elements are then inserted over decorticated bone to promote bony fusion. A gel foam is placed over the exposed dura to protect it. The area is copiously washed with sterile saline and the incision is closed in a layered manner. Following surgery, the patient did exceptionally well with no complications. His standing and walking tolerance improved and with the help of his community ISAEC practitioner, he was provided with strengthening and flexibility exercises to return him safely to his pre-surgical ADLs that helped. While the majority of patients with low back related leg symptoms do not require surgery, (approximately 10% go on to surgery) those that do can expect roughly a 90% improvement in their leg dominant symptoms. The ISAEC program is designed to provide rapid assessment and education regarding surgical candidacy and can help direct patients accordingly.

*Lumbar spine surgery is indicated for disabling, progressive, non-responsive or recurring leg dominant symptoms. Surgery for back dominant pain is rarely indicated in the absence of spinal deformity, instability, or other red flags.*