

Update on the Treatment of Lumbar Spondylolisthesis

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Spondylolisthesis is a condition that usually affects the lumbar spine. It occurs when one of the vertebrae slips forward over the one below it. As the bone slips forward, the nearby tissues and nerves may be pulled or pinched causing nerve irritation and pain.

Over the past 20 years, the treatment of spondylolisthesis has evolved. Fusion remains the gold standard in the management of moderate to severe spondylolisthesis. Newer methods and technologies such as bone substitutes for the graft site and stabilization devices are being studied.

In this review article, the pathophysiology, evaluation, and natural history of degenerative spondylolisthesis are presented. This type of spondylolisthesis occurs in adults age 50 and older.

The disc starts to thin out and the disc space gets smaller. As the disc and vertebra start to collapse, pressure increases on the adjoining *facet* (spine) joints. Arthritic changes at the joint and buckling of the ligament along the length of the spine add to the progress of this condition.

Women are affected most often. Scientists think this may be because of greater joint laxity and influence of estrogen in women. For about one-third of the patients with spondylolisthesis, the condition rarely gets worse. Back pain may even get better as the spine stabilizes itself.

Three-fourths of the patients without neurologic signs remain stable and don't need surgery. But for the patients with buttock pain and/or numbness down the legs, surgery may be the best option. Conservative care is always advised first. This may include antiinflammatory drugs, activity modification, and Physical Therapy.

When surgery is recommended, the procedures available include *decompression* with fusion and fusion with or without *instrumentation*. Decompression involves removing a piece of bone to take pressure off the spinal cord or spinal nerve root. Instrumentation refers to the use of metal plates, screws, or wires to hold the spine in place.

The authors review results of each of these operations based on studies published in the last 20 years. More recently, fusion with *transforaminal lumbar interbody graft* and fusion with *biologics* are being used. The interbody fusion increases the fusion surface area creating a more stable segment. Biologics refers to growth factors that are able to increase bone growth.

Currently under investigation is the use of motion sparing technology. These devices are inserted between the *spinous processes* of the vertebrae to distract (separate) the bones and stop motion. The spinous process is the bump you feel along the back of your spine. By preventing spinal extension, the nerves are protected from further pinching or pressure.

Kamran Mijid, MD, and Jeffrey S. Fischgrund, MD. Degenerative Lumbar Spondylolisthesis: Trends in Management. In *Journal of the American Academy of Orthopaedic Surgeons*. April 2008. Vol. 16. No. 4. Pp. 208-215.