

Spondylolysis

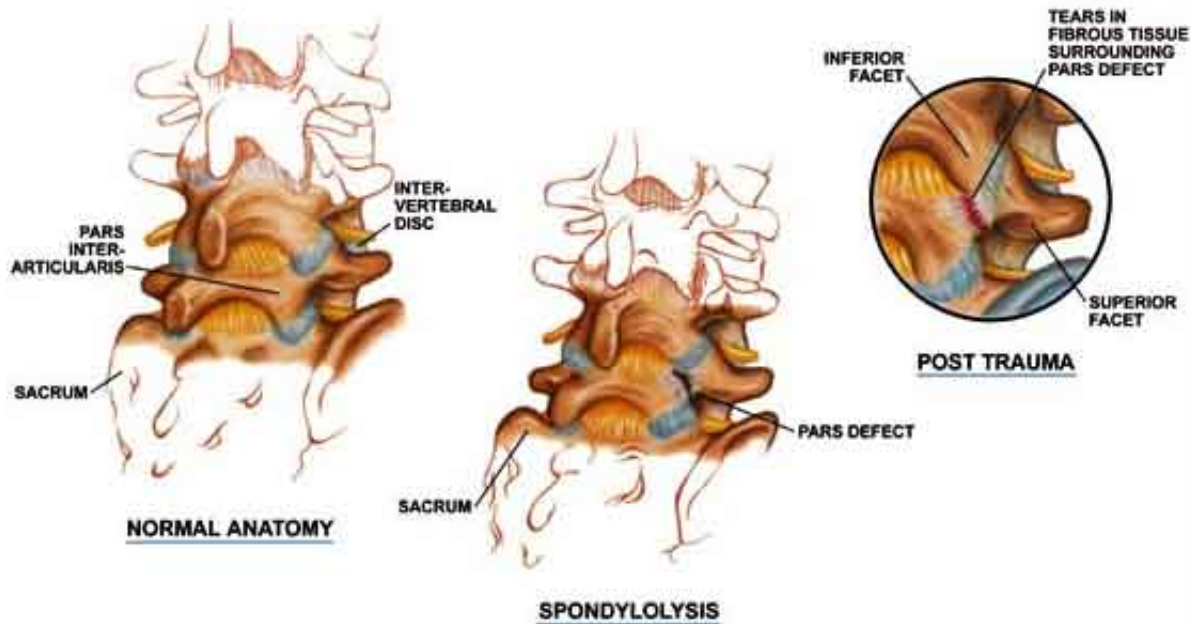
Introduction

Spondylolysis and Spondylolisthesis aren't your everyday terms that are thrown around by people who suffer from back pain, but for some of those people the words do have meaning. These two conditions affect about 5-6% of the population, and can lead to chronic back pain.

Anatomy

Spondylolysis refers to a defect in one of the vertebra in the lower back, usually the last vertebra of the lumbar spine. The area of the vertebra called the pedicle is affected. The pedicle is part of the bony ring that protects the spinal nerves, and is the portion that connects the vertebral body to the facet joints. When a spondylolysis is present, the back part of the vertebra (and the facet joints) simply aren't connected to the vertebral body - except by soft tissue. Its almost as if the back portion had been broken off and tried to heal back - but never did. Actually, there is good evidence to suspect that this is exactly what has occurred. Spondylolysis isn't something people are born with, but it appears that it first shows up sometime in childhood. Interestingly, boys who are football linemen and girls who are gymnasts seem to be affected the most. The current thought is that the spondylolysis is probably a stress fracture that never completely healed.

Spondylolisthesis is the term used to describe when one vertebra slips forward on the one below it. This usually occurs because there is a spondylolysis in the vertebra on top. There are two main parts of the spine that keep the the vertebrae aligned - the disk and the facet joints. When a spondylolysis occurs, the facet joint can no longer hold the vertebra back. The intervertebral disk may slowly stretch under the increased stress and allow the upper vertebra to slide forward. In the vast majority of cases, the stretching only allows a small amount of forward slip and there is no real danger in an adult that the slipping will continue until the upper vertebra slips off. (There is a special type of spondylolisthesis in teenagers where the forward slipping is extremely severe and can lead to the upper vertebra slipping completely off the lower vertebra.)



Symptoms

Spondylolysis and Spondylolisthesis are important because they can be a cause of low back pain. Just because you have one of these conditions, does not mean that you will necessarily ever have problems with your back, but you are at a higher risk of developing chronic low back pain than the normal population. These conditions can cause typical mechanical back pain symptoms, or they can cause compressive (or neurogenic) type symptoms - or both. (If you have not reviewed A Patient's Guide to Low Back Pain, you may want to now). The mechanical symptoms occur primarily because the spinal segment affected by the spondylolysis is unstable resulting in segmental instability. The compressive symptoms can arise because the nerves at the segment involved are pinched. There is usually a lump of tissue in the area of the spondylolysis - probably where the fracture tried to heal itself. This lump of tissue may press on the nerve roots as they leave the spine. The forward slip of the vertebra also makes the spinal canal smaller, leaving less room for the nerve roots.

There is usually pain across the small of the back and into the buttocks. If there are compressive symptoms, there may be pain down the leg to the foot, numbness in the foot and possibly weakness in trying to raise the foot.

Diagnosis

The diagnosis of Spondylolysis and Spondylolisthesis is dependent on seeing the abnormality on either X-rays, CAT scan or MRI scan. In most cases it is easily seen on regular X-rays of the low back. The symptoms are really no different from other causes of low back pain. On the other hand, just because you have a Spondylolysis or Spondylolisthesis on your X-ray doesn't mean your symptoms are from the defect. You may still have a herniated disk or some other condition that is causing your pain, so your doctor will carefully look for other causes of your pain.

Treatment

Treatment for Spondylolysis and Spondylolisthesis is not really much different than for other causes of mechanical and/or compressive back pain. In most cases, surgery will not be

necessary. The mechanical symptoms that are a result of the segmental instability can be reduced by strengthening the back muscles. A physical therapist will probably be recommended to help you with a series of exercises designed to help stabilize the spine by strengthening the back and abdominal muscles. Medications may be used for short periods of time to control pain, ease muscle spasm, and help regain a normal sleep pattern if you are having trouble sleeping. Short periods of bed rest may help with acute painful episodes. A back brace, or corset, may reduce pain.

Surgery is necessary only if all of the above treatments fail to keep your pain at a tolerable level. Surgical treatment for Spondylolysis and Spondylolisthesis must address both the mechanical symptoms and the compressive symptoms if they are present. This usually means that the nerves that exit the spine must be freed of all pressure and irritation. This is usually done by performing a complete laminectomy.

Laminectomy means remove the lamina. Removing the lamina allows more room for the nerves, and enables the surgeon to remove lump of tissue surrounding the spondylolysis defect that is irritating the nerves. This allows more room for the nerves of the spine and reduces the irritation and inflammation on the nerves.

Once the nerves are freed, a spinal fusion is usually performed to control the segmental instability.