

ISTHMIC SPONDYLOLISTHESIS

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Spondylolisthesis refers to one vertebra slipping upon another. The most common form of spondylolisthesis in the pediatric age group is the isthmic type which refers to defects in the pars interarticularis which is part of the posterior neural arch. This is in contrast to degenerative spondylolisthesis, discussed in a prior issue of MD News, which is typically found in the aging adult. Isthmic spondylolisthesis occurs in approximately 5-10% of the population. The defect occurring in the pars interarticularis is thought to be due to a stress or fatigue fracture. It is more often seen in children involved in sports where there is repetitive hyperextension of the lumbar spine (for example, gymnastics). In approximately 15% of individuals, the spondylolisthesis may be progressive. Slippage rarely progresses in the adults. The mildest form is called spondylolysis in which there is minimal slippage of the vertebra. The most advanced severity of spondylolisthesis is called spondyloptosis in which the upper vertebra is essentially dislocated forward from the lower vertebra. In children, the most common presentation of spondylolisthesis is low back pain, and spondylolisthesis is one of the more common diagnosis for low back pain. Some patients may also have radiculitis in an L5 distribution at presentation. On examination, patients may have a shortened trunk, a palpable lumbosacral stepoff of a spinous process, a heart-shaped buttock appearance with hamstring tightness, or a radiculopathy.

The most common form of treatment is activity modification. This may be enforced with bracing. In patients who have progressive spondylolisthesis or high-grade spondylolisthesis (greater than 50% of the vertebra slipped over the adjacent vertebra), surgery should be considered. Surgery is to stabilize the slippage. Additionally, if there is a high slip angle; that is, if L5 vertebra is pointing down into the pelvis, correction of the slip angle is recommended. If there is nerve root compression, typically at the L5 neural foramen, a decompression is usually performed. The actual surgical technique will depend upon the severity of spondylolisthesis, the slip angle, the degree of nerve compression and the surgeon's experience. Although most children with spondylolisthesis do not require surgical intervention, many are at risk for early disc degeneration. This, in turn, may become symptomatic in adulthood, with some advanced cases needing intervention such as spinal steroid injections or fusion/decompression surgery. For patients with severe symptoms, surgical outcomes are very gratifying.