Grade I Bilateral Degenerative Spondylolisthesis of L5-S1 With a L5 Pars Articularis Defect in a Collegiate Women’s Volleyball Player
Rodman S, DiStefano P, Cleaves G, Wujciak D: Kean University, Union, NJ

**Background:** A 19 year-old female Division III collegiate volleyball player suffers from a bilateral L5 pars articularis defect. Athlete also presents with a 5mm anterolisthesis of L5 on S1, resulting in spondylolisthesis. Athlete complained of radiating low back pain for a few months in high school. Athlete stated she could not sit for more than an hour before having a sharp, radiating pain run down her leg into her knee from her low back. Initial assessment showed a normal lumbar curve/lordosis and the right iliac crest/right PSIS was elevated. An MRI showed that the athlete had a degenerative disc disease and above L5-S1 was benign, a grade I spondylolisthesis, mild facet arthrosis, and slight scoliosis. X-rays showed a bilateral L5 pars articularis defect with a 5mm anterolisthesis of L5 on S1 and at the first spinal segment a spina bifida occulta. Sitting root test and Slump test were both positive. As a collegiate player, athlete’s initial complaint was low back pain that was a continuation since high school. William’s Flexion was positive for pain, along with Quadrants test. FABER’s test was negative for pain. **Differential Diagnosis:** Lumbar strain, sciatic nerve impingement, bone spur, herniated disc, scoliosis, muscle spasm of the psoas major, postural abnormality, tight tensor fasciae latae, weak abdominal rectus, vertebral fracture, spondylolysis. **Treatment:** While in high school, 440 mg of Aleve was prescribed along with heat, massage, and cold as tolerated. An increase of water intake was also advised and was to be terminated as soon as there was any stomach irritation. A core stabilizing and back strengthening routine was advised along with physical therapy. Physical therapy included resistance running, tensor fasciae latae myofacial release, leg strengthening, and balance exercises. The current goals are managing pain and increasing muscular strength and flexibility. Tensor fasciae latae myofacial release, resistance running, leg strengthening, and balance exercises are used to meet goals. Core stabilizing and back strengthening exercises along with E-stim tetany and ice have also been applied. **Uniqueness:** Spondylolisthesis is a displacement of a vertebra either anteriorly (anterolisthesis) or posterior (posterolisthesis). There are four grades: Grade I is a 1-25% slip, Grade II is a 26-50% slip, Grade III is 51-75% slip and Grade IV is a 76-100% slip. Spondylolisthesis has six major types: dysplastic (congenital), isthmic, degenerative, traumatic, post-surgical, and pathologic. Degenerative spondylolisthesis is more common in elderly patients in ages over 50, even more so in individuals over 65. It also is typically found in the L4-L5 (most common) and the L3-L4 levels. It is relatively rare in other levels of the spine. Athlete stated that her mother had a grade III spondylolisthesis and had a lumbar spinal fusion at age 17. **Conclusion:** Athlete continues to play with no surgery to repair her spondylolisthesis. For her grade of spondylolisthesis, surgery is not required, but if it advances to a grade 3, surgery is recommended to prevent further damage to the vertebral column. Athlete uses Kinesio® tape for the activation of the surrounding muscles and to alleviate the pain. The anterolisthesis has increased to 8mm resulting in a more advanced grade I spondylolisthesis. Athlete had her back adjusted by the team physicians and states that she will get the fusion if the pain becomes too much for her to bear. **Word Count:** 575