Insidious Onset Lumbar Spine Pain and Paralysis in a Recreational Basketball Player
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Background:
Retrolisthesis is a relatively rare condition of the lumbar spine defined as a posterior displacement of one vertebral body on another. This pathology is caused by trauma or degenerative changes that results in instability of the connecting soft tissue. This condition is the opposite of, the more commonly observed, anterolisthesis (spondylolisthesis). Retrolisthesis is most commonly observed in older patients, men > women, and has been associated with lumbar spine disc herniation (23% incidence) degenerative disc disease (16% incidence) and degenerative changes in the spine (5% incidence). Retrolisthesis most commonly occurs at a single spinal level and most commonly effects the L3-L4 spinal level. The condition has also been identified to occur in 4-14% of older women with osteoporosis.

Case Presentation:
Patient (P): Patient is a 6’4”,180-pound, 23-year-old, male recreational athlete with a chief complaint of insidious onset low back pain. Patient states that in 2008 while competing in high school basketball he noticed his back would “catch” while jumping. Past medical history reveals one episode of temporary bilateral lower extremity paralysis associated with lumbar spine injury while jumping. The patient was not assessed by a medical professional due to the absence of an athletic trainer at his high school. Rather, once his symptoms resolved, he was transported home by his parents and he did not seek medical care, assuming the condition was nothing more than “back spasms”. Following this, the patient reported intermittent, 2/10 low back pain with walking, running, jumping and prolonged standing. He stated his symptoms were relieved by stretching his lumbar spine. The patient also was treated symptomatically by a chiropractor. The patient suffered a second incident in 2013 while playing recreational basketball. On this occasion, the patient reported 10/10 lumbar spine pain and bilateral lower extremity paralysis following an aggressive jump to dunk the basketball. At this time, the patient was transported to the emergency department where he received plain radiographs which were negative. For the next three years, the patient continued to receive chiropractic care for his intermittent low back pain. In 2016, when the pain became more constant, additional diagnostic imaging was performed.

Intervention (I): Patient was again assessed utilizing plain radiographs which revealed a posterior translation of the L5 vertebrae and degenerative disc disease. The patient was then referred for rehabilitation consisting of manual therapy and therapeutic exercise to increase lumbar spine mobility and core strength.

Comparative Outcome (CO): The patient continues to complete rehabilitation for the condition. These treatment interventions, along with therapeutic modalities for pain modulation, are typical of treatment programs for retrolisthesis.

Conclusion:
This case is unique for several reasons. Retrolisthesis is far less common other degenerative conditions of the lumbar spine. The incidence of retrolisthesis to anterolisthesis has been found to range between 2:1 – 10:1 in older adults. Also, this condition is far more common in older adults, typically 65 years of age or older. So the occurrence of this condition in a young athlete is unusual. Furthermore, the case was complicated by a lack of medical care at the time of onset, leading to a delay in the patient’s diagnosis. The delay in diagnosis may have contributed to the recurrence of symptoms and the advancement of the degenerative spinal pathology. Finally, the symptoms of bilateral lower extremity paralysis are uncommon in cases of retrolisthesis.

Clinical Bottom Line:
Retrolisthesis is a degenerative spinal condition most commonly observed in older adults. However, the condition can occur in very physically active, young athletes. Diagnosis is best made using plain radiographs. Appropriate treatment consists of therapeutic modalities, manual therapy and therapeutic exercise for pain modulation and restoration of strength and mobility.

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