Back Injuries in Sports

Brett B. Clark, PT

Back pain is a very common malady in the general population. As a sports participant, the chances of developing a back injury or pain are even greater. It has been shown that heavy physical exercise is correlated with back injury and degenerative spine changes (Anderson 1995). It has also been found that back pain is more common in athletes as compared to non-athletes (Videman et al. 1995) Some authors have reported the incidence of back pain in young athletes to be as high as 65%. Weight lifting with maximum loads was found to be associated with greater degenerative joint disease throughout the entire spine. Soccer was associated with greater degenerative changes in the lumbar spine. Interestingly, no signs of accelerated disc degeneration were found in former competitive runners, suggesting that twisting/pivoting in soccer may contribute to back pain or injury. Of the lower back injuries in sport that are reported, 18% are caused by a condition known as Spondylolysis.

Spondylolysis is a stress fracture in one of the vertebrae of the spinal column. Genetics may play a role in development of this condition as an individual may be born with thin vertebral bone, making them vulnerable to fracture. Overuse is another strong factor in developing spondylolysis and is seen most commonly in sports that require hyperextension of the spine.

Symptoms of spondylolysis tend to mimic those associated with a lower back strain or muscle injury. Common findings that aid in differentiating spondylolysis from lower back strain include pain that spreads across the lower back, pain with extension of the spine, muscle spasms and hamstring tightness.

Diagnosis of spondylolysis is primarily done through x-ray. X-rays are used to determine if part of the vertebrae (the pars articularis) is cracked or fractured. X-ray is also important in determining if the fracture has widened, causing a condition known as *spondylolisthesis* in which the vertebrae in question begins to slip forward as a result of the fracture. This can potentially lead to compromise of the neural structures.

Treatment of spondylolysis consists of cessation or reduction in the activity that was responsible to allow for healing of the fracture. Anti-inflammatory medications are often prescribed to help reduce the pain associated with the injury. A back brace may be helpful in the early stages to prevent extension and prevent exacerbating the injury. Physical therapy is typically indicated to reduce pain and muscle spasm, restore mobility to the uninvolved segments in the spine and to develop lumbar stabilization, or core stability. Periodic x-rays are also of benefit to monitor the fracture and determine if slippage has occurred or worsened.

Keys to prevention of spondylolysis are similar to those for preventing back injuries in general. Maintaining appropriate muscle length in the lower extremities to reduce stresses on the spine is valuable as well as developing good core stability, or lumbar stabilization. Additionally, it is beneficial to have an evaluation of the sports activity in which the athlete is participating. This can help to identify areas where the athlete may be compensating through the lumbar spine and setting themselves up for trouble. It also affords the opportunity to refine particular skills related to the sport in question to prevent development of compensations due to poor technique.

Brett Clark is a Maryland-licensed Physical Therapist with extensive training and experience in manual therapy techniques. He has a special interest in treatment and rehabilitation of sports-related injuries. He can be reached at Lifestrength Physical Therapy, in Towson, MD.