

Posterior Cruciate Ligament Injuries

Knee injuries are unfortunately common in sport. Much attention has been paid to injuries to the anterior cruciate ligament (ACL) secondary to the disability it poses for an athlete, but little emphasis has been placed on its neighbor, the posterior cruciate ligament (PCL). The PCL is described as being injured in 3-20% of all sport knee injuries. Many more athletes may have suffered damage to this ligament and may not have had it identified. These injuries occur most often during game play; competitive athletic teams can expect one PCL injury per season, although no one factor has been identified as a dominant cause of PCL injury. The anatomy of the PCL, which is stronger than the ACL, contributes to the stability of the knee in both flexion and extension because it has two ligamentous bundles that form the PCL, the anterolateral bundle that tightens in flexion and the posterolateral bundle, which tightens in extension. The most common way the PCL is injured in sport is when the individual falls on a bent knee with the toes pointed. Other ways the PCL is torn is by hyperextension, a blow to the tibia with the knee flexed, or a combination of rotation and lateral force directed at the side of the knee, forcing it into hyperextension.

The most sensitive and specific test for detecting a tear in the PCL is the posterior drawer test. The knee is bent to 90 degrees and the tibia is pushed backward to evaluate how solid the endpoint is and how much the tibia moves backward. A normal knee would not have any posterior movement of the tibia; the most severe injury would be a Grade IV sprain, which is a complete tear of the ligament with over 10 mm of posterior movement of the tibia and clinical evidence of damage to other supporting structures around the knee. An additional test evaluating the PCL is the sag sign. To perform this test, lay the athlete down on his/her back and bend the hip and knee to 90 degrees. The knee is then checked from the side to see if the lower leg sags toward the floor. A positive test is a downward movement of the lower leg at the knee, indicating a lax PCL. There are other tests such as the active quadriceps test, posterolateral drawer and external rotation recurvatum test that can also be performed to help evaluate the PCL and other musculoskeletal structures supporting the knee.

Treatment of PCL injuries begins with protection of the injured ligament by use of a splint and crutches, if needed. Ice, compression with an elastic wrap and elevation of the injured knee should be prescribed for the first 72 hours. Non-steroidal anti-inflammatory medications such as ibuprofen and naproxyn sodium may be used for pain relief and reduction of inflammation. Once swelling has been stabilized, therapy should be started to restore range of motion, and strength should be emphasized early and often. Literature and experience has shown that this is the most important factor in returning an athlete to play. Many different braces are available, but it is unclear whether they have a substantial impact on providing stability to the knee upon return to activity. Surgery to repair or reconstruct the PCL has had mixed results; the best results accrue from surgery that also evaluates and repairs supporting structures of the knee.

A knee injury for any athlete can be devastating. It is extremely important to evaluate and correctly identify all structures involved in an injury early and to treat them aggressively, including rehabilitation, so the athlete returns to sport with the most stable and healthy knee possible.

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