A NARROW INTERCONDYLAR NOTCH AND ANTERIOR CRUCIATE LIGAMENT TEAR IN A MALE COLLEGIATE SOCCER PLAYER

Wong HM, Lopez RM, Mazerolle SM: University of Connecticut, Storrs, CT

Background: A 21-year-old male collegiate Division I-A soccer player made upper body contact with the opposing player while planting his left knee to advance the ball during competition. During the on-field evaluation, the athlete reported that he heard a “pop”, felt immediate pain, and felt his left knee give way. He was removed from the game and was examined on the sideline. The knee showed mild effusion upon examination. Active knee flexion and extension was significantly decreased. The athlete also had pain with passive knee flexion. Strength was limited by pain with knee flexion and extension. Anterior Lachman, Anterior Drawer, and Pivot Shift tests were positive for laxity and pain. Negative special tests included: Valgus Stress Test, Varus Stress Test, Posterior Drawer, McMurray, and Patellar Apprehension. He has a previous history of mild medial collateral ligament injuries to both knees that were sustained while playing collegiate soccer and has a family history of anterior cruciate ligament (ACL) tears. Differential Diagnosis: Trauma to the posterior cruciate ligament, meniscal tear, ACL tear, medial collateral ligament tear, lateral collateral ligament tear.

Treatment: The MRI revealed a complete ACL tear with a lateral meniscus tear. The athlete met with a physician and opted for surgery. Pre-surgery treatment involved quadriceps strengthening and pain management. High volt electric stimulation and a compression device that incorporated RICE were used for pain management. For quadriceps strengthening, straight leg raises and quadriceps contractions were performed. Surgery was performed two weeks post-injury using an autograft of the patellar tendon. During surgery, the physician discovered the athlete had a narrow intercondylar notch width. The lateral meniscus was repaired and the intercondylar notch was widened. A Cryocuff® was used immediately to reduce swelling and pain post-surgery. The athlete was non-weight bearing for the first 4-7 days post-surgery using crutches and a knee immobilizer to prevent knee flexion and extension. The first stage of his rehabilitation included range of motion exercises (towel slides, stationary bike), quadriceps contractions, weight shifting, prone hangs for knee extension, Russian stimulation to engage the quadriceps muscles for muscle re-education, and compression with ice to reduce swelling and pain. Patella mobilizations were performed to keep the patella from scarring down. The athlete then progressed to partial weight bearing one and a half weeks after surgery and full weight bearing two and a half weeks post-surgery. His rehabilitation exercises progressed to straight leg raises with ankle weights, manual resistance with the knee flexed at various angles, gait training, forced knee flexion to increase range of motion, and an upper body ergometer to maintain cardiovascular fitness. The athlete is now full weight bearing and has reached 95° of knee flexion.

Uniqueness: ACL tears are far less common in males than in females. Narrow intercondylar notches have been cited as potential predisposing factors for female ACL ruptures, however not been documented as causes for males. Furthermore, family history of ACL injuries should be investigated as a predisposing factor of the condition. Conclusion: The most common mechanism for ACL tears is rotation of the knee while the foot is planted, which occurred in this case. Although females have a high rate of non-contact ACL injuries relative to males, it is important to be aware of the condition, nonetheless. A surgery consisting of an autograft of the patellar tendon is often chosen by athletes who participate in contact sports. The patellar tendon is sturdier and can withstand more forces. Key Words: anterior cruciate ligament, meniscus, autograft, intercondylar notch.