Arthrofibrosis in a Collegiate Soccer Player Following ACL Reconstruction; Five Surgeries in Thirteen Months

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Background: While attempting to accelerate and maneuver around an opponent, a 23 year old male soccer player sustained a non-contact twisting injury to his right knee with his spikes lodging in the turf, resulting in a valgus force on an externally rotated tibia. Athlete did not undergo on-field evaluation due to unavailability of medical personnel. Upon later evaluation, athlete’s chief complaint was posteriomedial knee pain, aggravated by bending, squatting, stair climbing, twisting, and an inability to kneel. Athlete reported symptoms of catching, clicking, locking, and limited ROM. MRI report stated presence of a bone contusion to distal femur and proximal tibia, no evidence of disruption to the meniscus, but a partial ACL tear. The orthopedist differed in his interpretation concluding an anterior horn medial meniscus tear, bone contusion, but no significant ACL tear. Patient underwent an arthroscopic surgery and was found to have a degenerative type tear of the anterior horn of the medial meniscus and a partial ACL tear. Patient had a cyclops lesion in the intracondylar notch; however, Lachman’s and pivot shift tests were negative for instability. Patient underwent debridement of the anterior horn of the medial meniscus and cyclops lesion. During the following months, athlete complained of further knee discomfort and pain with knee flexion but denied any pronounced instability. A physician’s evaluation at five months revealed laxity from Lachman’s with an endpoint and pain on McMurray’s maneuver along with discomfort. MRI concluded a probable recurrent ACL tear. However due to lack of physical findings of instability, athlete only underwent arthroscopic meniscal repair. Post surgical evaluation revealed medial meniscal repair and no symptoms of instability. Patient demonstrated end point on Lachman’s and had no effusion in his knee. Physician recommended an ACL repair should knee instability arise. Within three weeks; athlete had diffuse pain in his right knee. An MRI revealed a complete ACL tear, which scarred on to the PCL with a repeated meniscal tear. Physician’s evaluation showed a 2+ Lachman’s with a soft end point and a pivot glide. Approximately one month after the second surgery, athlete underwent bone-patellar tendon-bone autograft ACL reconstruction. After fixation, there was negative Lachman’s and pivot shift test. Three months later the athlete’s ROM was -7 to 120 degrees and he was scheduled for an arthroscopic debridement for arthrofibrosis. During surgery the surgeon found significant scar tissue in the medial and lateral gutters, tip of the patella, and superior pouch. Scar tissue was debrided and upon completion extension was -4 degrees. Remaining extension was to be gained through therapy. Currently the athlete is scheduled for another arthroscopic debridement due to no improvement. Differential Diagnosis: meniscal tear, ACL tear, cyclops lesion, degenerative joint disease, synovitis, fibrous tissue impingement, infrapatellar contracture syndrome, patellar entrapment. Treatment: Athlete underwent two arthroscopic debridement surgeries to repair medial meniscus tears within six months. ACL reconstruction was carried out a month later. Due to significant extension loss and a diagnosis of arthrofibrosis arthroscopic debridement was conducted four months later. Despite past surgery and subsequent rehabilitation athlete is still deficient in extension and will undergo further arthroscopic debridement for arthrofibrosis. Uniqueness: Athlete has undergone four surgeries to restore knee function following ACL and meniscus injury in the past eleven months with a scheduled fifth surgery to correct a persistent deficit in extension. Athlete sustained ACL tear while his tibia was externally rotated. Conclusions: This study demonstrates the consequences of misdiagnosis and inappropriate treatment following internal knee derangement injury. Sports medicine practitioners need to be aware of the incidence of arthrofibrosis after ACL reconstruction and the importance of being vigilant in helping the athlete gain full extension.

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