A Massive Osteochondral Defect of the Medial Femoral Condyle in a Collegiate Female Soccer Player

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Objective: To present the case of a collegiate soccer player with a massive osteochondral defect to the medial femoral condyle.

Background: A 20-year-old female soccer athlete reported to preseason training with an ACL deficient knee. During the second week of training, the athlete sustained a significant knee injury. Physical exam demonstrated limited and painful ROM, joint effusion, positive Lachman, a positive McMurray’s and point tenderness to the joint line.

Differential Diagnosis: Anterior Cruciate Ligament Instability, Medial Collateral Ligament Tear, Medial and Lateral Meniscal Tear, Patella Dislocation, Osteochondral Defect.

Treatment: Diagnostic tests included negative x-rays and MRI readings indicating deficiency of the ACL, medial meniscus tear, and injury to the medial femoral condyle. Intra operative findings confirmed the ACL deficiency, an unstable bucket handle tear of the medial meniscus and a massive osteochondral defect to the medial femoral condyle. Surgery involved a bone-patellar tendon-bone reconstruction, meniscal repair, and a micro fracture chondroplasty of the medial femoral condyle. The micro fracture procedure required a non-weight bearing gait for eight weeks to allow for fibrocartilage healing. At six weeks, the athlete exhibited signs of an arthrofibrotic knee. The athlete then underwent knee manipulation under anesthesia and arthroscopic lyses of adhesions to improve ROM. Additionally, the surgical procedure allowed for an opportunity to inspect the healing process of the microfracture repair on the medial femoral condyle. The fibrocartilage regeneration of the medial femoral condyle revealed near complete coverage of the defect. The following season, the athlete sustained a second medial meniscus injury to the involved knee. An arthroscopic partial meniscectomy was performed allowing the surgeon the opportunity to again inspect the chondral defect repair one year later. At this time, the defect showed some minor chondrosis, but was otherwise fully intact.

Uniqueness: The uniqueness surrounding this case was the significant size of the initial defect, as well as the complexity of combined knee trauma. Subsequent surgical interventions allowed for visual inspection of the osteochondral repair, enhancing the understanding of the actual healing process of the articulating surface.

Conclusion: A major osteochondral injury can be a season or career ending-altering event for an athlete. Treatment of an osteochondral defect along with multiple surgical procedures adds a variable that challenges the athlete’s ability to return to an elite level of competition. Remarkably, the athlete was able to return to competition without any residual complaints or functional limitations.

Key Words: Osteochondral Defect, Arthrofibrosis Knee, Micro Fracture, Chondroplasty