TACSM Abstract - Case Study

Knee Joint Degeneration in 22-year-old Collegiate Soccer Player

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ABSTRACT

CASE HISTORY: Patient was a 22-year-old DIII soccer player in the left back position. She has experienced chronic bilateral knee pain since her junior year of high school with an insidious onset of injury. She began training to return to play in the summer of 2022 and received multiple types of therapy to alleviate pain including cupping of hamstrings and quadriceps, TFL release, patellar tendon treatment, dry needling, ultrasound, combo, and KT taping for patellar tracking. At the first fall scrimmage, she began experiencing severe pain rated at a 9/10. The patient was referred to an orthopedic physician when the university sports medicine staff were unable to identify a clear clinical diagnosis. The physician recommended retirement from collegiate athletics. **PHYSICAL EXAM**: Patient's knees were evaluated bilaterally with complaint of worse pain in the right knee. She was experiencing an achy pain, swelling with activity, and was tender to palpation on the medial aspect. Observation of patient showed an antalgic gait, genu valgum (especially in the squat position), foot pronation, internal tibial rotation, weak VMO bilaterally, and lateral patellar tracking. **DIFFERENTIAL DIAGNOSES**: Meniscus tear, Chondromalacia, MPFL tear, MCL sprain. **TESTS & RESULTS**: Patient underwent MRIs for both knees. Imaging for the left knee showed chondral thinning in the patellofemoral joint. The right knee showed grade 4 chondral fissuring of the lateral patellar facet and subchondral edema. Both MRIs were suggestive of patellar maltracking. Multiple special tests were performed with positive signs indicated by Mcmurray's and Thessaly's tests along with pain on the lateral aspect during valgus forces. **FINAL DIAGNOSIS**: During surgery, there was found to be bilateral monoarthritis with severe patellar chondromalacia, patellar maltracking, radial tear of the lateral meniscus, and fat pad impingement with synovitis. **DISCUSSION**: The uniqueness of this case is two-fold. First, the patient did not present with signs and symptoms that pointed to a clear diagnosis. Her main signs and symptoms were pain and swelling. Much of the diagnosis relied on observation of her gait and posture, MRI review, and ultimately surgery. Second, the patient had advanced degeneration of the articular cartilage that is more likely to be present in someone of advanced age. This degeneration was possibly due to lateral patellar tracking, facilitated by VMO weakness, which allowed the bone to degenerate the cartilage. **OUTCOME OF THE CASE**: The patient underwent bilateral knee surgeries of similar procedure. Surgery on the right knee was performed first followed by the left knee a few months later. The surgeon performed a knee arthroscopy, chondroplasty, partial lateral meniscectomy, lateral release, fat pad excision, synovectomy, and debridement in both knees. Approximately 6 weeks following her first surgery, patient was started vicosupplementation injections for her right knee to alleviate pain and soreness. **RETURN TO ACTIVITY AND FURTHER FOLLOW-UP**: Patient was unable to return to play. She still experiences discomfort, primarily in her right knee. Since her initial surgery, the physician has found that she has patellofemoral arthritis and patellar instability. The physician has suggested the possibility of a partial knee replacement in the future. Patient has continued vicosupplementation for pain management. She has also continued cupping as a form of treatment with positive feedback. Patient has been wearing shoes to correct overpronation with favorable results.