BILATERAL SYMPTOMATIC OSTEOCHONDRITIS DISSECANS LESIONS OF THE KNEE IN AN ADOLESCENT WATER POLO PLAYER: CASE REPORT

Presenter: Andrew Kutzner, MD
Authors: Emily Compton, MD; Andrew Kutzner, MD; Philip Nowicki, MD; Travis Merge, MD

Purpose: Water sports, such as competitive swimming and water polo, are traditionally considered low-impact sports. As such, the types of overuse injuries seen in these athletes generally differ from those observed in high-impact, running/jumping athletes. Osteochondritis dissecans (OCD) lesions are overuse injuries of the articular cartilage and subchondral bone associated most often with repetitive compression-like activity as seen in impact sports. We present a unique case of bilateral symptomatic OCD lesions of the knee in a competitive adolescent water polo player.

Methods: A 16 year-old healthy male water polo player presented with a one year history of right greater than left bilateral anteromedial knee pain. Radiographs and MRI demonstrated unstable bilateral medial femoral condyle OCD lesions. Diagnostic arthroscopy of the right knee was performed first, and the non-displaced OCD lesion was identified. Due to instability and significant size of the fragment (20 mm length x 16 mm width), open reduction internal fixation was performed through a medial arthrotomy. The fragment was removed, and both the condylar defect and free fragment were debrided back to healthy bone. Two cannulated bio-absorbable compression screws were inserted to stabilize the fragment and no bone graft was required. Post-operatively, the patient was made non-weightbearing in a hinged-knee brace with full knee range of motion allowed after initial wound healing. Given the presence of bilateral OCD lesions, the patient is scheduled for fixation of the left knee lesion three months following the right side.

Results: Following the experience with this case, a literature review on OCD lesions of the knee in water sport athletes was performed. Anteromedial knee pain, usually due to medial patellofemoral wear or medial collateral ligament strain, is a common problem in competitive breaststrokers. This is thought to be due to the “whip-kick” technique involved in the breaststroke. A variation of this kicking stroke called the “egg-beater kick” is utilized in water polo while treading water. This technique employs a single-legged, alternating, whip-kick which allows the players to maintain a vertical, stable position in the water. Both kicks can place significant varus stress on the knee, resulting in anteromedial knee pain and possible degenerative changes over time.

Conclusion: This is the first reported case of bilateral unstable symptomatic OCD lesions of the knee in a competitive water sports athlete. While the majority of prior literature on OCD lesions has reported an association with high impact activities, repetitive anteromedial compression-type injury can occur in low-impact athletes, such as water polo players. Routine screening radiographs of the knee looking for OCD lesions should be obtained when evaluating knee pain in these patients. Early detection and treatment of these lesions by coaches and physicians is important to prevent further knee degeneration and irreversible damage in young athletes.