THE INCIDENCE of osteochondritis dissecans (OCD) of the knee among young athletes appears to be increasing, which may be due to an increase in competitive sports participation at an early age. There is much speculation about the etiology, but it may be a multifactorial combination of genetic predisposition, repetitive trauma, ligamentous laxity, biomechanical malalignment, and other factors. Males have a higher incidence at present, but it is increasing among females.

OCD results from a process that separates an articular cartilage and subchondral bone fragment from the joint surface. The separated fragment may become avascular and exist as a loose body within the joint.3 The two main types of OCD are juvenile and adult. Some experts believe that the adult form represents an undiagnosed condition from childhood. OCD lesions of the knee joint are rare among the adult population; its prevalence is estimated to be 15 to 30 cases per 100,000. Of those cases, 85% of lesions are located on the medial femoral condyle. Because the condition is bilateral in 20-30% of cases, its existence should be ruled out in the contralateral joint.3

OCD lesions are classified on a grade I to grade IV scale. A grade I lesion is intact, with only mild irregularity of the articular surface. A grade II lesion demonstrates signs of separation from the underlying bone, and the articular surface is irregular. A grade II lesion is partially detached. A grade IV lesion is completely detached, which forms a divot in the articular surface, and the separated fragment becomes a loose body in the joint.3 Conservative treatment of a stable lesion is generally advised, which includes therapeutic exercise and avoidance of competitive sports for six to eight weeks.

Early recognition of an OCD lesion is essential for optimal management of the condition. Clinical findings, which are often subtle, include vague knee discomfort, restricted range of motion, a “catching” sensation, intermittent pain, and effusion. When an OCD lesion is suspected, diagnostic imaging is necessary to determine whether the lesion is stable or surgery will be required.

Case History

A healthy 22-year-old Division II football player (6’2” and 305-lb defensive lineman) reported pain and “catching” in his knee to the athletic training staff during spring football practice. The symptoms persisted throughout the summer. Prior to the initiation of preseason football practices, the athlete made arrangements for a physician to evaluate his status. MRI revealed a large OCD lesion on the medical femoral condyle, and a large loose fragment. There was no evidence of meniscus or ligament pathology. An arthroscopic surgical procedure removed several loose bodies, and a 1.5 cm x 1.5 cm chondral flap was in place on the articular surface. The athlete was fitted for a medial unloader brace and a standard postarthroscopy knee rehabilitation program was initiated. He was able to play through the entire fall football season without any limitations.
Two years later, the athlete’s pain and mechanical symptoms returned during winter workouts. The MRI revealed a grade II OCD lesion that was partially detached but not displaced (Figure 1). Arthroscopic surgery revealed that the size of the OCD lesion was 3cm x 3 cm, and that it was unstable (Figure 2). The edge of the lesion was debrided. A more extensive surgical procedure was not performed at the time because of the athlete’s desire to play his senior football season. Subsequently, another surgery for operative fixation with fibrin clot augmentation was recommended. Two months after the arthroscopic debridement, the lesion was surgically stabilized. Postsurgical management involved complete avoidance of weight bearing and maintenance of full knee extension for a period of six weeks. The rehabilitation program did not involve impact exercises for a period of two months after full weight bearing was allowed. The athlete was progressed back to full participation in football while wearing a medial unloader brace. He had a successful football season without experiencing any limitations (Figure 3).

Discussion

Articular cartilage lesions of the knee can be difficult to treat. The athlete initially presented a grade I OCD lesion, which progressed to become a Grade III lesion after two years of football. Surgical fixation became necessary for him to be capable of finishing his college football career.

An athlete who has an unstable OCD lesion requires arthroscopic management. Surgical management options include microfracture, allograft transplant, osteochondral autograft, and autologous chondrocyte implantation.4,5,6

The microfracture involves drilling channels into the subchondral bone to stimulate a healing response.4 Allograft transplant involves the implantation of a donor bone and cartilage graft into the articular surface defect. Osteochondral autograft involves the harvesting of a graft from the patient’s own body to fill the defect. Autologous chondrocyte implantation involves laboratory cultivation of cartilage cells derived from...