UCL Tear in a Minor League Baseball Athlete

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Abstract

Background: This was a Level 3 case study focused on the diagnosis, treatment, and impending recovery of a baseball athlete with a UCL tear. UCL tears are common in professional baseball athletics. Evidence indicates that the incidence of UCL tears varies depending strongly on biomechanics, however the incidence of radiocapitellar overload syndrome (RCOS) as a precursor to UCL tears is not well recorded. Research suggests that insufficient healing or laxity of UCL results in elbow instability, which increases valgus stress and compressive forces on the secondary stabilizer, radiocapitellar joint. Patient: Athlete was a 24-year-old (195.85cm, 99.79kg) male MLB baseball pitcher. Athlete’s previous history included right RCOS that occurred the year prior to UCL injury. Athlete reported to athletic trainer after workouts with a chief complaint of right medial elbow pain and explained symptoms began the Sunday prior from a single pitch that went unreported at TOI. While he played catch the same afternoon, the symptoms remained. No symptoms noted with non-baseball activities. Athlete was point tender over medial joint line, UCL and pronator teres. Both AROM and PROM were full with supination, pronation, elbow flexion, and extension when compared bilaterally. When strength was tested, there were no significant deficits noted in the affected arm, however symptoms increased with resisted wrist flexion and pronation. During special testing all tests on the left were negative, however on the right there was (+) Tinel sign, (+) Valgus, and (+) Milk test. There were no neurological or vascular symptoms noted. Differential diagnoses included right UCL injury and right flexor/pronator strain. Treatment: Athlete received UCL reconstruction surgery the following week after injury report. The left gracilis was the choice for tendon graft and he also received a bone marrow aspirate injection. Procedure determined that UCL was open to valgus stress at 30 degrees and full extension. Phase I of rehabilitation, 0-3 weeks post-surgery, was geared towards protecting the area, decreasing pain, inflammation, and gradually regaining AROM with help from a brace. Phase II of rehabilitation, 3-8 weeks post-surgery, was geared towards protecting the area, decreasing pain, inflammation, and gradually regaining AROM with help from a brace. Phase II of rehabilitation, 3-8 weeks post-surgery, was geared towards protecting the area, decreasing pain, inflammation, and gradually regaining AROM with help from a brace. Phase III of the athlete’s rehabilitation program, weeks 8-18 post-surgery, was geared towards advanced strengthening. The goal was to increase strength and endurance of shoulder, elbow, and wrist. In Phase IV, 20-53 weeks post-surgery, return to play was initiated by the introduction of an interval throwing program. At about 6 months post-operation during Phase V, athlete will start the interval throwing program on the mound. At different points in this phase athlete will start throwing different styles of pitches depending on progression. Outcomes: Athlete is still rehabilitating his arm back to activity from UCL reconstruction. He is expected to make successful return to play with a new MLB organization. Conclusions: This was a Level 3 exploration case with concentration on the diagnosis, treatment, and forthcoming return of an athlete to UCL play. The following is recommended for the athlete to achieve their goals. These findings are consistent with the previous presentation of the results of the comprehensive UCL injury and rehabilitation treatment. This case study provides an example of the common, poorly documented precursor to UCL injury, RCOS. This research further highlights the complexities of treatment of the upper extremity, particularly the elbow, in baseball athletes. After UCL reconstruction, the rehabilitation of the elbow remains the same as the typical presentation, however, it is important to monitor the radiocapitellar joint once the athlete starts their throwing program. Evidence supports that RCOS suggests UCL dysfunction. Clinical Bottom Line: Radiocapitellar overload syndrome may manifest as a precursor to UCL injury.

Introduction

UCL injuries are one of the most common injuries in overhead athletes. This injury typically occurs during the late cocking and acceleration phases of throwing (Higgins, 2011). UCL tears are frequently a result of overuse and present in a similar way in most athletes. The classic presentation includes point tenderness over the medial joint line of the elbow, where the UCL attaches, and in some cases over the pronator teres. Baseball athletes commonly report signs and symptoms occurring only with baseball activity. Another common finding is pain and instability with valgus stress. In orthopedic evaluation of athletes with suspected UCL injuries, many healthcare providers have found a positive valgus stress test and positive milk test.

Purpose

The purpose of this case was to describe a 24-year-old male MLB baseball pitcher who endured a UCL tear. Although UCL tears are common in overhead athletes, this athlete had a previous history of RCOS which has not been well documented, but has been identified as a precursor to UCL tears. An overview of this injury is presented to obtain a better understanding of the injury and rehabilitation process.

Volar force

Discussion

Biomechanics have been identified in several studies as a major contributor in baseball athletes with UCL ruptures. A simple lack in core strength and stability can cause an athlete to compensate in another area of their body, leading to injury. A lack of core stability can effect an athlete’s ability to transfer forces to their lower or upper extremities causing them to compensate with their limbs and over time eventually causing an overuse injury, like a UCL tear. A lack in range of motion (ROM) can affect biomechanics as well.

References


