Ulnar Collateral Ligament 3rd Degree Tear in a Minor League Baseball Player

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Abstract

Background: Athlete was a 23 year-old (182.88 cm and 88.45 kg) male Minor League baseball player. Athlete was pitching his second inning of a game and felt a shocking pain in his elbow, causing him to stop the game. He reported to the athletic trainer (AT) following the game complaining of pain on the medial aspect of his elbow directly over the ulnar collateral ligament (UCL). He also stated that he had felt forearm tightness for the past two to three weeks. The initial evaluation revealed no obvious deformities, ecchymosis, or inflammation. Athlete was sent tender over the Ulnar Collateral Ligament (UCL) and over his common flexor tendon. Full Active ROM of elbow flexion, extension, pronation and supination. Athlete displayed full elbow strength in all directions. Further orthopedic clinical examination revealed: (+) Valgus Stress Test for Pain, (+) Milks Test for Pain. Player was sent to a local doctor and received a diagnosis of ulnar neuropathy and was sent to their team’s rehabilitation facility. Differential Diagnosis: 3rd degree UCL tear and ulnar neuropathy. The athlete was referred to a specialist in New York, NY where he was diagnosed with a 3rd degree UCL tear and received intra-articular plasma rich platelet (PRP) injections into the UCL to improve and facilitate healing. The doctor also recommended PRP to the elbow. The athlete began a physiotherapy program to aid in recovery. This became a turning point in his rehabilitation process and eventually he was able to be on a rehab protocol to return to play. He was able to return to play safely and continue his career. Rather than focus on trying to use new treatments for an existing epidemic is cause for concern and the research that has been done has revealed that there is a need for more research to be done. The way these athletes are handled before injury, at the time of the injury, and the treatment following the injury all need to be carefully handled before injury, at the time of the injury, and the treatment following the injury all need to be carefully

Clinical Examination

Full Active ROM of elbow flexion, extension, wrist pronation and supination. Athlete displayed full elbow strength in all directions. Further orthopedic clinical examination revealed: (+) Valgus Stress Test for Pain, (+) Milks Test for Pain. Player was sent to a local physician and received a diagnosis of ulnar neuropathy and was sent to the team’s rehabilitation facility.

Differential Diagnosis

- 2nd degree UCL tear
- Ulnar neuritis
- Medial epicondylitis

Treatment

This began Phase 3 of rehabilitation (Advanced Strengthening) that includes weeks 8-19. The goals of this phase were to increase strength and endurance of the shoulder, scapula, and elbow. The athlete was very motivated to return to play and progress muscular rhythmic stabilization exercises of the shoulder, scapula, and elbow. At this point an isometric program for the shoulder, scapula, and elbow were initiated. Next, utilizing a rice-bucket and forearm dumbbells for forearm strengthening. About 12 weeks post-op the initiation of shoulder and elbow isokinetic exercises including tubing and light weights.

Conclusion

Currently the athlete is in his 18th week post-op and is performing 1 handed upper extremity plyometric exercises for the shoulder and elbow. This includes external rotation exercises such as 1/2 body weight floor throws (reverse throws), and using the body blade in internal/external, flexion/extension, and horizontal abduction/adduction. The athlete is currently progressing as planned and is doing extremely well both physically and mentally in response to the surgery and the rehab protocol.

Discussion and Summary

The UCL is an extremely integral part of the elbow. When the integrity of the UCL is damaged even in the slightest way it is likely the ligament is going to tear and the joint will have lost its stability, resulting in the need for Tommy John surgery. This unfortunate event occurs frequently within the baseball community, and especially targets the pitchers due to the high velocity at which they are throwing the ball, and the immense amount of stress placed on the UCL. This growing epidemic is cause for concern and the research that has been done has revealed that there is a need for more research to be done. The way these athletes are handled before injury, at the time of the injury, and the treatment following the injury all need to be carefully looked at and adjusted to match this phenomenon. The research compiled has done increased in injury rates among baseball players, and has delved into the different treatments available including PRP injections as well as Tommy John surgery. These studies have found that return rates from Tommy John surgery are dramatically increased over the past few years and continues to allow baseball players to progress with their career. Rather than focus on trying to use new methods such as the PRP injections, the focus should be put on improving Tommy John surgical methods and post-surgical rehabilitation programs.

References


