

REHABILITATION FOLLOWING RECONSTRUCTION OF THE ULNAR COLLATERAL LIGAMENT IN THE ELBOW OF A COLLEGE BASEBALL PITCHER

Levinson M, Altchek DW: Hospital for Special Surgery, New York, New York, USA

Background and Purpose: A tear of the ulnar collateral ligament can be a debilitating injury for a baseball pitcher. Recently, reconstruction of the ulnar collateral ligament has been demonstrated to be highly successful in returning pitchers to play. The purpose of this clinical case presentation is to highlight the precautions and functional progressions of the Hospital for Special Surgery (HSS) Rehabilitation Guidelines.

Case Description: A 20 year old collegiate baseball left handed pitcher was pitching and felt a sudden pain in his elbow and noted the next day that he could not move his elbow. He was unable to return to pitching secondary to pain. An MRI study revealed a tear of the ulnar collateral ligament. He underwent a reconstruction of the ulnar collateral ligament of his left elbow using the “docking technique” 2 months following the initial symptoms. The contralateral gracilis tendon was harvested for the graft. As per the HSS guidelines, the patient was splinted at 50° for 1 week, braced at 30-60° postop weeks 1-3 and 15-90° at postop week 4. The brace was removed at week 5 when formal physical therapy began. The patient presented with active elbow range of motion of 20-120°. No aggressive PROM was performed and extension was restored with a low intensity, long duration stretch. Full elbow range motion was restored by 8 weeks.

Initial strengthening focused on the scapula stabilizers and shoulder musculature at 6 weeks. Light, pain free elbow strengthening was also included. Rotator cuff strengthening was not initiated until 8 weeks, so as to avoid any excess valgus stress to the graft. Rhythmic stabilization was also initiated. PNF patterns were initiated to begin to reproduce the functional demands of throwing. Isolated forearm strengthening is avoided as many pitchers have overused flexor/pronators.

Outcomes: The patient is currently 11 weeks post surgery. His left upper extremity strength is 5/5 and he is asymptomatic. At 12 weeks, he will progress his rotator cuff strengthening to the 90°-90° position and progress his neuromuscular drills. Eccentric training will be emphasized. Posterior shoulder flexibility will be addressed, as this patient has a history of GIRD. At 14 weeks, he will initiate a throwing specific plyometric program incorporating the trunk and lower extremities. If he tolerates that well, he may initiate an interval throwing program. Additional criteria for advancement to a throwing program include: lack of symptoms, scapula symmetry; normal rotator cuff strength (ER/IR ratio), good overhead endurance and normal posterior shoulder flexibility. The plan is to complete a long toss program by 9 months and progress to the mound program. One year post surgery is the goal for a game situation.

Discussion: This clinical case presentation demonstrates the importance of understanding the demands of the UCL graft during pitching and the stresses placed on the healing graft during rehabilitation. It also demonstrates the importance of normalizing scapula and rotator cuff function and reproducing the functional demands of the pitcher during the rehabilitation program. Avoiding aggressive passive stretching of the elbow, restoring posterior shoulder flexibility and incorporating the entire kinetic chain may improve the functional outcomes and protect the elbow and shoulder as pitchers return to competition.