Does Prehabilitation Prior to Ulnar Collateral Ligament Surgery Affect Return to Sport Rate or Time in Baseball Players with Partial UCL Tears?

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**Abstract**

**Background:** Those who suffer partial thickness ulnar collateral ligament (UCL) tear often undergo a period of nonoperative management. Unfortunately, some of these patients fail conservative treatment and surgical intervention is indicated. This provides a unique set of patients who essentially underwent “prehabilitation” prior to their UCL surgery. Benefits of prehabilitation have been studied extensively and implemented into the clinical practice of anterior cruciate ligament (ACL) rehabilitation as well as recovery from multiple other surgical procedures. However, the efficacy of prehabilitation for UCL surgical patients with partial thickness UCL tears has not been evaluated.

**Purpose:** This study aims to determine if baseball players with partial UCL tears who completed at least 4 weeks of prehabilitation prior to surgery (Prehab) had better return to play (RTP) rates and quicker return to sport (RTS) time than players who attempted 0-3 weeks of physical therapy prior to UCL surgery (No Prehab). This study also compares revision, reoperation, and patient-reported outcomes between Prehab and No Prehab players.

**Methods:** Baseball players of all competitive levels who underwent primary UCL reconstruction (UCLR) or UCL repair (CPT codes 24345 and 24346) at one institution before December 31st, 2019 were included. Physician chart notes and operative notes were screened to confirm primary UCLR or UCL repair, and to identify whether preoperative conservative treatment was attempted. Patients were contacted via RedCap to collect postoperative outcomes (reoperation, revision, complications, RTP, return to sport prior level of play [RTSP], RTP duration, RTSP duration) and patient-reported outcomes (Kerlan-Jobe Orthopaedic Clinic [KJOC] score, Andrews-Timmermann score, Conway-Jobe score, satisfaction). Patients who did not respond to RedCap were screened for postoperative outcomes via postoperative chart notes.

**Results:** 118 baseball players were included with an average age of 19.1 ± 2.0 years, with 58 players in the Prehab (average 9.3 weeks of prehab) and 60 players in the No Prehab (average 0.2 weeks of prehab) group followed up at 3.5 ± 2.5 years postoperatively. The study cohort consisted of 105 pitchers, 3 catchers, 4 infielders, and 5 outfielders. 7 players underwent UCL repair, and 111 players underwent UCLR. All demographics were similar between groups except the Prehab group more frequently received a gracilis graft (76% vs. 52%, p=0.037). All postoperative outcomes were similar between groups, including revision, RTP, and patient-
reported outcomes. Postoperative outcomes were similar between groups when evaluating both proximal and distal UCL tears in isolation. Postoperative outcomes were also similar between groups when isolating baseball pitchers.

**Conclusions:**
Baseball players who attempt rehabilitation prior to UCL surgery have similar post-operative outcomes compared to baseball players who do not attempt rehabilitation prior to surgery. Purposeful prehabilitation may not be necessary in baseball players undergoing operative UCLR/UCL repair, however, rehabilitation still has an important role in players who may succeed without surgery.