

Trent Gause – 2021 – RRD - Return to play and outcomes in athletes undergoing elbow UCL reconstruction.

Trent Gause

PGY5

Return to play and outcomes in athletes undergoing elbow UCL reconstruction.

Intro:

The ulnar collateral ligament (UCL) is a primary stabilizer to elbow valgus and is prone to repetitive injury, most commonly in overhead throwing athletes. The UCL may experience up to 34.6 Nm of torque through a maximal throwing motion, with a biomechanical threshold of failure to 22.7 to 34 Nm. The rates of UCL injury leaves reconstructive surgery as a common occurrence, notably increasing in baseball players across all ages. Various operative techniques, and rehabilitation regimens exist. The goal of this retrospective chart review study was to ascertain the return to play rate and time in high school and collegiate athletes undergoing UCL reconstruction, as well as delineate differences in operative technique, complications and concomitant pathology.

Methods:

From 2014-2000, a query on the electronic medical records of a level 1 trauma center in the southeastern United states was conducting. Searches for conducted with the CPT code 24346 (reconstruction of MCL of the elbow with tendon graft). Charts were then reviewed individually for the particular sport, level of play, demographics, operative technique, and outcomes. Inclusion criteria included a high school or collegiate level athlete, a sports related injury, a minimum of 12 months of follow up with final range of motion criteria. Exclusion criteria included a lack of minimum follow up, acute traumatic fractures. Statistical were conducted with Microsoft Excel

Results:

A total of 57 patients were identified, 47 males, 9 females. The average age was 19 at the date of surgery. There 42/57 right-sided injuries, with 15 left-sided. All but 2 were on the dominant side (one runner, and one boxer). 46 of the patients played baseball (9 high school pitcher, 34 collegiate pitcher, 1 first base, 1 catcher, 1 outfielder). Other sports with UCL injuries were 11 in total with 2 Javelin throwers, 1 tracker and field, 1 boxer, 4 softball players (2 Catchers), and 3 wrestlers. Regarding pathology location, 13 were complete ulnar sided tears, 9 complete humeral, 13 partial ulnar, 14 partial humeral, 5 combined, 1 midsubstance, 1 repetitive bony avulsion, 1 atrophic. Repair techniques include Modified Jobes with Suture docking with nonabsorbable sutures (29%), Docking with a braided tape (40%) and a suture anchor repair with an internal brace augmentation (29%). Graft choice showed a preponderance of palmaris longus autograft (47). All but one patient had a subcutaneous ulnar nerve transposition at the time of surgery. The average return to play was 11.7 months among all subjects. Baseball players return to play average was 12.3 months, Softball 12 months, Javelin 10 months, Boxer/Wrestler 8.5 months. There was no significant difference in return to play among repair technique. 48 of 57 patients had full active range of motion at 12 months. Common complications were a pain flare up requiring throwing cessation (21%), ulnar neuritis (10%), UCL retear (5%). Common concomitant pathology including 6 patients with shoulder pathology, 13 with pre-existing ulnar neuritis, 3 patients with an accessory anconeus muscle. All but 2 patients returned to their previous level of play (97%)

Discussion:

Rates of UCL injuries of the elbow are increasing among younger athletes. This study highlights that the majority of athletes return to their level of play at approximately 12 months. Non-throwing athletes tended to return sooner than throwing. The most common athlete was a collegiate baseball pitcher, the most common location of the tear was on the humeral side. There was not a significant difference in return to play among the reconstructive technique. The most common graft was an ipsilateral palmaris longus autograft. Complications include pain flares that responded to transient rehabilitation cessation and exacerbation of ulnar neuritis despite transposition. Many athletes had concomitant pathology involving the shoulder, or pre-existing ulnar neuritis, and 3 patients had an accessory anconeus on pre-operative MRI.