Arthroscopic Versus Open Lateral Release for the Treatment of Lateral Epicondylitis: A Prospective Randomized Controlled Trial
SS-41

April 15, 1:30 PM

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Introduction: The purpose was to determine if quality of life and function are different following arthroscopic versus open tennis elbow release surgery.
Methods: Seventy-five patients were recruited with confirmed lateral epicondylitis with a minimum of 6 months failed conservative treatment, at least one corticosteroid injection, and negative x-ray for fracture. Patients were randomized intraoperatively to undergo either arthroscopic or open lateral release. Outcome measures were the Disabilities of the Arm, Shoulder and Hand questionnaire (DASH), a 5-question VAS Pain Scale, and grip strength evaluated at pre-, and 6-week, 3-, 6-, and 12-months post-surgery. Significance was $p<0.05$.
Results: Thirty-seven patients (18 women, 19 men) underwent the open procedure with a mean age of 46.9 (7.04) years and 38 patients (16 women, 22 men) were in the arthroscopic group with a mean age of 45.6 (6.8). No pre-surgery differences were found between groups based on age, sex, DASH or VAS scores. The arthroscopic approach had a significantly longer surgery time than open, 34:00 vs 22:30 minutes ($p=0.005$). Both groups demonstrated a significant improvement in subjective measures (DASH and VAS) and grip strength by 12-months post-surgery, and no significant differences were found between groups at any time point. There was an interaction effect between DASH score at 12-months and WCB status with non-WCB patients in the Open group scoring lower (did better) on the DASH than the Arthroscopic group and the Arthroscopic group scoring lower in the Open group. Age, gender, WCB, and smoking status were not significantly predictive of either DASH score or VAS.
Conclusion: There was no difference in quality of life and function between arthroscopic and open tennis elbow release surgery at 12-months post-operative. Factors such as sex, age, and smoking status did not influence patient outcome, but there was some interaction between WCB and technique that was not well understood.

Ulnar Collateral Ligament Reconstruction; the Rush Experience
SS-42

April 15, 1:30 PM

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Introduction: To report the patient demographics, surgical techniques, and outcomes of all UCLR performed at a single institution from 2004-2014
Methods: The surgical database of one institution was searched from January 1st 2004-December 31st 2014 for the current procedural terminology (CPT) code 24346 "Reconstruction medial collateral ligament, elbow, with tendon graft (includes harvesting of graft)". Charts were reviewed to determine patient age, gender, date of surgery, sport played, athletic level, surgical technique, graft type, and complications were recorded. Patients were contacted via phone calls to obtain the return to sport rate, Conway-Jobe score, Timmerman & Andrews score, and Kerlan-Jobe Orthopaedic Clinic (KJOC) Shoulder and Elbow score.
Results: One hundred eighty-nine patients underwent UCLR during the study period (92% male, average age 19.6 +/- 4.9 years, 77.8% were right elbows). There were 166 baseball players (87.8% of all patients), 156 of which were pitchers (82.5% of all patients). Ninety-eight (51.6%) were college athletes, 62 (36%) were high school athletes, and 25 (13.2%) were professional athletes at the time of surgery. The docking technique was used in 111 (58.7%) patients while the double docking technique was used in 78 (41.3%). An ipsilateral palmaris longus graft was used in 111 (58.7%) of patients while a hamstring autograft was used in 48 (25.4%) patients. The ulnar nerve was subcutaneously transposed in 79 (41.8%) patients. Overall 95.7% of patients were able to return to sport and had a Conway-Jobe score of good/excellent while 4.3% had a score of fair. The average KJOC score was 94.7 +/- 5.7 and average Timmerman-Andrews score was 93.7 +/- 7.7. Subsequent surgeries were performed in 5.8% of patients.
Conclusion: Overall 95.7% of patients who underwent UCLR were able to return to sport with an average KJOC score of 94.7 and Timmerman Andrews Score of 93.7.

Outcomes in Revision Tommy John Surgery in Major League Baseball Pitchers
SS-43

April 15, 1:40 PM

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Introduction: With the recent rise in number of Tommy John surgeries, a proportionate rise in revisions is expected. However, much is unknown regarding the current revision rate of Tommy John surgery, return to play, and change in performance in Major League Baseball (MLB) pitchers. We sought to determine (1) the current revision rate of Tommy John surgery in MLB pitchers, (2) the likelihood of return to MLB pitching after revision Tommy John Surgery, and (3) the change in performance after Tommy John revision surgery.
Methods: Publicly available databases were used to obtain a list of all MLB pitchers who underwent primary and revision Tommy John surgery. Pitching performance was

compared pre- and postoperatively for pitchers who returned to greater than or equal to one MLB game following revision surgery to age- and position-matched controls.

Results: Since 1999, 235 MLB pitchers underwent Tommy John Surgeries; 31 pitchers (13.2%) underwent revision surgery. 37% underwent revision within 3 years of their index procedure. 26 revisions had more than 2-year follow up; 17 pitchers (65.4%) returned to pitch at least one major league game while only 11 pitchers (42.3%) returned to pitch ten or more games. Of those who returned to MLB competition, the average length of recovery was 20.76 months. Compared to age- and position-matched controls, MLB pitchers undergoing revision surgery had a statistically shorter career following revision surgery (4.9 vs 2.6 seasons, $p = 0.002$), and pitched fewer innings and total pitches per season.

Conclusion: The rate of revision Tommy John surgery is substantially higher than previously reported. For MLB pitchers, return to play after revision surgery is much lower than after primary reconstruction. Overall, the durability of MLB pitchers following revision UCL reconstruction decreases significantly compared to age- and position-matched controls.

Two Modified Anterolateral Portals in Elbow Arthroscopy: A Cadaveric Study
SS-44

April 15, 1:45 PM

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Introduction: To analyze the placement of two modified anterolateral portal sites in elbow arthroscopy and demonstrate the safety of each with respect to portal sites proximity to the radial nerve.

Methods: Twelve fresh cadaveric elbow specimens (6 matched pairs) were prepared, anatomic landmarks were marked, and 4mm Steinman pins were inserted into three anterolateral portal sites in relation to the lateral epicondyle: 1) proximal, 2cm proximal and 2cm anterior 2) direct anterior, 2cm anterior 3) distal, 3cm distal and 1cm anterior. Each elbow was then dissected to reveal the course of the radial nerve. Digital photographs were taken of each specimen and the distance from the Steinman pin and the radial nerve was measured.

Results: Our proximal and direct anterior portal sites were found to be an average of 11.1mm and 13.8mm from the radial nerve, respectively. Similar to past studies we found the original distal anterolateral portal, as described by Andrews and Carson, in close proximity to the radial nerve, an average distance of 4.5mm. The distal anterolateral portal came in contact with the radial nerve 40% of the time, with 3 total Steinman pins piercing the nerve. There was a statistically significant difference in the distance between our proximal and distal anterior portals, as well as, our direct anterior and the distal portals to the radial nerve. No significant difference was found between the distance of the proximal and direct anterior portal sites.

Conclusion: Our two modified, proximal and direct anterior, anterolateral portal sites should be considered safe and provides the surgeon with an adequate distance between the arthroscope and the radial nerve with little risk of iatrogenic injury. The distal portal puts the radial nerve at the most risk for iatrogenic injury. Our two modified anterolateral portal sites should be considered for use when performing elbow arthroscopy.

Primary Repair of Traumatic Distal Bicep Ruptures: Effect of 1 vs. 2-Incision Technique
SS-45

April 15, 1:50 PM

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Introduction: There is no consensus on the optimal method for surgical management, and rates of perioperative complications and re-rupture may vary widely. The purpose of this study was to determine success of distal biceps repair in active cohorts.

Methods: All U.S. military servicemembers undergoing primary surgical repair for confirmed distal biceps rupture through the Military Health System were isolated between 2007-2013. Demographic variables (age, gender, and hand dominance) and surgical variables [time to surgery, surgical technique (e.g. single- vs. two-incision), method of fixation were extracted. Rates of perioperative complications, recurrent distal biceps rupture, reoperation, and revision repair were evaluated.

Results: A total of 303 surgical repairs were performed for traumatic distal biceps rupture, including 19% for subacute or chronic ruptures (e.g. >30 days after injury). The cohort was exclusively male with an average age of 39 years(range,20-61). The median time to the surgery was 13 days(range,1-365) and the majority of cases were performed using a single-incision volar technique(77%). Cortical button accounted for at least 87% of all repairs, as opposed to suture anchors(8.3%) and interference screw fixation (4.4%). At an average 51-month follow-up, a total of 46 complications(15%) occurred, including traction neuropraxia(n=24,7.9%; lateral antebrachial cutaneous nerve,n=13,4.3%), recurrent rupture (n=10; 3.3%), heterotopic ossification (n=8; 2.6%), superficial infection(n=2;0.7%), radial neck fracture(n=1;0.3%). When compared to two-incision technique (11.9%), complications were not significantly greater with single-incision repairs 19.7%;p=0.22). Similarly, the rate of re-rupture after primary repair with one- (n=8; 4.0%) and two-incision(n=2; 3.4%) was not significantly different(p=0.82). Only two patients underwent medical discharge due to persistent elbow pain after surgery(0.7%).

Conclusion: There were no statistically significant differences in the rate of complications and/or re-rupture after single or two-incision distal biceps repair. In an active