

alternative in the short term follow-up, a longer term study is needed.

Arthroscopic Radial Ulnohumeral Ligament Reconstruction (SS-23) *Sergey S. Dzugan, M.D., Felix H. Savoie III, M.D., Larry D. Field, M.D., Daniel Gurley, M.D.*

Introduction: Posterolateral instability (PLRI) is a little recognized cause of elbow pain and functional impairment. Unlike medial injuries, dysfunction of the lateral ligaments may produce significant impairment in activities of daily living. This presentation details our results with arthroscopic reconstruction of both acute and chronic lateral elbow instability.

Methods: This was a retrospective chart review of 20 consecutive patients with a diagnosis of lateral instability as determined by history, physical examination, and MRI testing. Each patient was managed solely by arthroscopic techniques. The data was collected prospectively in the initial evaluation and at regular 3 month intervals as part of our routine study of all elbow patients. The data of the Andrews-Carson elbow rating scale was collected pre- and post- operatively using the same data base. The average patient age was 35. There were 12 right elbows and 8 left elbows. The average duration of symptoms in the non-acute group prior to surgery was 22 months. All patients had nonoperative measures including injections, medications, physical therapy and bracing prior to surgery. The indications for surgery were pain, functional impairment, and a failure of nonoperative treatment in all cases. All surgeries were performed on an outpatient basis under general anesthesia in the prone position. Surgical findings included avulsion of the entire complex from the humerus in 7 patients, mid-substance tearing and stretching in 10 patients, and a combination of both injuries in 3 patients.

Results: Four of 20 patients (20%) had acute or sub-acute repairs for recurrent elbow instability. Ten of the 20 (50%) arthroscopically treated patients had the addition of an anchor to supplement the arthroscopic suture plication. All patients were re-examined between 18 and 60 (average 33) months postoperatively. The Andrews-Carson scores for all arthroscopic repairs improved from 146 to 176 ($p=0.0001$). Subjective scores improved from 55 to 83 and objective scores improved from 91 to 93. Acute repairs produced the best results functionally with the majority of patients returning to normal activities.

Conclusion: In both acute and chronic instability patients, arthroscopic repair and/or plication of RUHL is a

safe technique that produces satisfactory results and can be a valuable alternative to an open approach.

Arthroscopic Debridement and Microfracture of Capitellar Osteochondritis Dissecans of the Elbow (SS-24) *Chris Pokabla, M.D., Larry D. Field, M.D., Felix H. Savoie III M.D., J. Randall Ramsey, M.D., Christopher K. John, M.D.*

Introduction: Osteochondritis dissecans of the humeral capitellum is a condition seen with relatively high frequency in young baseball players and gymnasts. A variety of surgical procedures have been utilized to treat this challenging condition with variable success rates. The purpose of this study is to analyze the results of arthroscopic debridement and microfracture for osteochondritis dissecans of the capitellum.

Methods: Utilizing the computerized database of an orthopaedic sports medicine practice, a retrospective chart-review was performed on a consecutive series of patients who underwent arthroscopic treatment for osteochondritis dissecans of the capitellum between January 1994 and August 2008. Patients were evaluated clinically by assessing range of motion, return to sport and Andrews-Carson elbow scores. Plain radiographs were also reviewed to evaluate for progressive degenerative changes.

Results: In the fourteen-year period investigated, twenty-nine elbows in twenty-eight patients were identified that had undergone arthroscopic debridement and microfracture. All patients had unstable lesions based on clinical exam and magnetic resonance imaging or had failed an attempt at conservative treatment. At an average follow-up of twenty months after surgery, the mean range of motion was 4.5 to 136.4 degrees. The average Andrews-Carson score was 186.8 and eighteen of the twenty-eight patients (64%) returned to sport. Radiographic evidence of lesion progression was seen in only two of the twenty-nine (7%) elbows treated.

Conclusion: These results show that arthroscopic debridement and microfracture can produce good to excellent outcomes in the majority of patients with osteochondritic lesions of the capitellum. There is a low incidence of progressive radiographic changes associated with this technique and the majority of patients are able to return to sport in the short-term.

Magnetic Resonance Imaging After Arthroscopic Microfracture of Capitellar Osteochondritis Dissecans (SS-25) *Greg Lervick, M.D., Corey Wulf, M.D., M. Russell Giveans, Ph.D.*

Introduction: OCD of the capitellum affects young athletes involved in elbow bearing activities. Unstable lesions are best managed surgically, although debate remains regarding the optimal method. Arthroscopic treatment allows rapid recovery, but the effect on the articular surface is undetermined. The purpose of the present study is to evaluate the outcome of arthroscopic OCD fragment excision and capitellar microfracture using functional assessment scores and repeat imaging.

Methods: We reviewed records of 13 consecutive patients with OCD lesions of the capitellum managed with arthroscopic microfracture. The mean age at the time of surgery was 17.1 years (10.9-26.8); 6 patients were skeletally immature and 5 were skeletally mature. Pre- and post-operative functional assessment included active range of motion, Mayo Elbow Performance Score (MEPS), and Timmerman/Andrews Elbow Score. All patients underwent plain radiographic and MRI evaluation at latest follow-up (minimum 12 months).

Results: The mean range of motion improved in both flexion ($133.3^\circ \rightarrow 138.6^\circ$, $p=0.067$) and extension ($19^\circ \rightarrow 0.8^\circ$, $p= <0.01$). The mean MEPS ($70.9 \rightarrow 94.5$, $p= <0.01$) and Timmerman/Andrews Elbow scores ($116.4 \rightarrow 190$, $p= <0.01$) improved significantly. Plain radiographs demonstrated degenerative changes in 1/11 (9%). MRI evaluation demonstrated an improvement in overall joint congruence and the formation of a reparative articular surface in 8/11 (73%). No reoperations or major complications were encountered.

Conclusion: Arthroscopic OCD fragment excision and capitellar microfracture demonstrates good to excellent functional results in short term follow up. Follow up MRI suggests potential for a reparative fibrocartilaginous articular surface. Longer term follow-up is necessary to determine durability of the technique.

Optimization of Magnetic Resonance Imaging of the Anterior Bundle of the Ulnar Collateral Ligament: A Randomized Controlled Trial of 3 Patient Positions (SS-26) Ryan G. Miyamoto, M.D., Patrick Duffy, M.D., Charles Ho, M.D., Ph.D., Thomas Hackett, M.D.

Introduction: Controversy exists regarding the ideal patient/elbow positioning for optimal magnetic resonance imaging in patients being evaluated for ulnar collateral ligament (UCL) injuries. The objectives of this study are to determine which of three commonly utilized patient positions provides optimal imaging of the UCL, superiority in terms of patient comfort, and provides the highest intraobserver and interobserver reliability in assessing the ligament. Our hypothesis is that optimal positioning can lead to better evaluation of the ligament,

reduce patient discomfort and decrease motion artifact providing better scans, and potentially reduce the necessity for MR arthrography. Randomized controlled trial, Multirater agreement study

Methods: Fifteen subjects with each underwent 3-Tesla magnetic resonance imaging of the elbow in three commonly utilized positions in a randomized order. All subjects filled out a post-scan comfort questionnaire after each position. Each of the imaging sequences was reviewed by seven observers; one musculoskeletal radiologist and six orthopaedic surgeons who had completed a sports medicine fellowship. Two of the observers graded the images at two different time points. Multirater and intrarater agreement was calculated based on the observed agreement, the Fleiss kappa coefficient for interrater reliability, and Cohen's kappa statistic for intrarater agreement.

Results: The supine/forearm pronated position was significantly more comfortable than supine/forearm supinated ($p=0.023$) and prone/forearm supinated ($p=0.018$). In the supine/forearm pronated position, there was a 69% interrater observed agreement (Kappa=0.41) and a 69% intrarater observed agreement (Kappa=0.39). For this position, the orthopaedic surgeons agreed with the radiologist 66% of the time. In the supine/forearm supinated position, there was a 59% interrater observed agreement (Kappa=0.14) and a 68% intrarater observed agreement (Kappa=0.24). For this position, the orthopaedic surgeons agreed with the radiologist 38% of the time. In the prone/forearm prone position, there was a 68% interrater observed agreement (Kappa=0.37) and a 69% intrarater observed agreement (Kappa=0.41). For this position, the orthopaedic surgeons agreed with the radiologist 54% of the time.

Conclusion: Non-contrast magnetic resonance imaging of UCL is most comfortable for patients in the supine/forearm pronated position. This position also demonstrated the highest agreement between orthopaedic surgeons and the musculoskeletal radiologist. Grading of the intact UCL was reliable and reproducible in the supine/forearm pronated position and the prone/forearm supinated position.

Arthroscopic Proximal Row Carpectomy (SS-27) Noah D. Weiss, M.D., Ricardo Molina, M.D., Sean Correa, OPA-C, Stephanie Gwin, B.A.

Introduction: To evaluate the safety, efficacy, and potential advantages and disadvantages of an all-arthroscopic Proximal Row Carpectomy.

Methods: Eighteen patients underwent an all-arthroscopic Proximal Row Carpectomy (APRC). Following