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° -> 138.6°, p=0.067) and extension (19° -> 0.8°, p= <0.01). The mean MEPS (70.9 -> 94.5, p= <0.01) and Timmerman/Andrews Elbow scores (116.4 -> 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

standard radiocarpal and midcarpal arthroscopy, the proximal carpal row was removed with the arthroscopic bur, with care being taken to protect the articular cartilage surfaces of the proximal capitate, and lunate fossa. A soft bandage was applied, which was removed two days postoperatively and early range of motion was instituted. Wrist range of motion, grip strength, and postoperative pain were compared to previous data on open PRCs.

Results: Eighteen patients underwent the procedure, with fourteen patients available for greater than one year follow-up. There were no postoperative complications, and no instances of radiocarpal subluxation despite immediate mobilization of the wrist. There was a significant learning curve, but the procedure was consistently performed in under one hour in the latter half of the study. Patients had less postoperative pain, faster recovery of motion, and faster return to activity compared to the open procedure. Final range of motion and grip strength were nearly identical to the open procedure.

Conclusion: All-arthroscopic Proximal Row Carpectomy appears to be a safe, effective, and reliable procedure for a variety of wrist conditions, and allows for rapid mobilization of the wrist compared to the open procedure. Results appear to be as good as or better than similar patients treated with an open Proximal Row Carpectomy, with less postoperative pain and faster return to activity. Final range of motion and strength is equivalent to the open procedure. There is a significant learning curve, but the procedure may be appropriate for the experienced wrist arthroscopist.

Endoscopic Carpal Tunnel Release: Retrospective Comparison Between Two Endoscopic Techniques (SS-28) *Jorge Luis Orbay, M.D., Igor R. Indriago, M.D.*

Introduction: Carpal tunnel syndrome is the most common peripheral nerve compression disorder. Endoscopic release (ECTR) is a well accepted minimally invasive treatment method that hastens recovery while offering an acceptable complication rate. It can be performed through various techniques using a proximal, a distal or two portals. We have significant experience with the two portal (Chow) and with the one proximal portal (Agee) ECTR methods. This study compares our results and complications with these two methods.

Methods: We reviewed the medical records of all patients treated by the senior author at our center for isolated unilateral CTS using ECTR between January 1991 and August 2009. Bilateral ECTR cases and those presenting other associated surgical procedures were excluded. During this period we used both the two portal and the proximal portal techniques. The two portal technique (787 cases) was used mainly between 1991 and 1995 while the proximal portal technique (2359 cases) was used more frequently after 1995. All patients were treated as outpatients and under local or regional anesthesia. Postoperative management included a plaster slab short-arm post-operative dressing used for an average of six days, immediate finger motion and early functional use of the hand. Patients were seen at six days, one month and three months after surgery. Final functional results were assessed by measuring digital ROM, assessing for persistence of night paresthesia and for the presence of pain, tingling or numbness.

Results: Of 3,146 hands that fit the inclusion criteria, we were able to follow 91% of them for at least 12 weeks. The mean time for return to work was 10 days. Immediate relief of night paresthesia was reported in 98% patients presenting with this symptom while 67% of patients with constant numbness had complete resolution at final follow-up. Complications include significant pillar pain (7 two portal and 13 proximal portal), transient median neuropathy (2 cases with two portal technique), digital neuropathy (3 two portal 4 proximal portal), laceration of the superficial arch (10 two portal and 4 proximal portal) reflex sympathetic dystrophy (2 two portal and 4 proximal portal).

Conclusion: Both methods provide early return to function and adequate relief of symptoms. The complication rate is acceptably low when the procedure is performed by one surgeon. The two portal technique presented increased incidence of median neuropathy and superficial arch laceration.

Identification of Acetabular Labral Pathology in Asymptomatic Volunteers Using Optimized Noncontrast Magnetic Resonance Imaging (SS-29) *Matthew R. Schmitz, M.D., Warren Kadrmas, M.D.*

Introduction: The objective of this study was to use an optimized noncontrast MRI protocol to identify hip labral pathology, including labral tears and paralabral cysts.

Methods: In this prospective prevalence study, 42 hips in asymptomatic patients with an average of 34 years old (range 27-43) were imaged with optimized noncontrast MRI scans. Two fellowship trained musculoskeletal radiologists interpreted the scans at two different points in time and commented on the presence of labral pathology including paralabral cysts. The results were analyzed for both interobserver and intraobserver reliability.