

Methods: Data were collected prospectively in 81 consecutive patients undergoing arthroscopic shoulder surgery for various pathologies. The CHI from this cohort was then compared to a cohort of 44 patients that were surgically treated for coracoid impingement with a coracoidplasty. There were 91 men and 38 women with an average age of 48.4 years old (range 15-75). The Coracoid-humeral interval (CHI) was measured on axial preoperative MRIs and was defined as the most narrow point between the coracoid and the humeral head. To standardize the CHI measurement, the interval location was evaluated in relation to the equator of the humeral head. CHI was the dependent variable and multivariate analysis was used to assess the relationship with various surgical and preoperative subjective factors.

Results: The location of the CHI was consistently just superior to the equator of the humeral head. There was no significant difference in CHI between gender, men had 12.6mm (SD3.9) vs women 11.6mm (SD3.3) ($p=0.22$; power70%). CHI did not change with age ($r=-0.047$; $p=0.63$). Patients with instability had a significantly larger CHI of 15.1mm (SD3.3) than patients without instability of 11.6mm (SD3.6) ($p=0.000$). When the CHI of the instability patients was removed from the analysis, there was no difference in the CHI across genders but age was significantly correlated with the interval size ($r=-0.215$; $p=0.01$). Patients with coracoid impingement had a significantly narrowed CHI of 9.8mm (SD2.5) versus 13.3mm (SD3.7) compared to patients without coracoid impingement ($p=0.000$). Patients with complete supraspinatus tears had significantly narrower CHI of 10.4mm (SD3.6) vs 12.2mm (SD3.5) ($p=0.04$) in those without cuff tears. ASES score was significantly associated with the CHI ($r=.381$; $p=.002$).

Conclusion: The CHI was uniformly located just proximal to the equator of the humeral head. CHI in women and men were not significantly different, but age did have an effect. Patients with instability had a significantly larger CHI than patients without instability. In our analysis those with coracoid impingement and those with complete supraspinatus tears had narrowed CHI's. Patients with a narrowed CHI had lower preoperative ASES scores. In conclusion, the type of shoulder pathology affects the CHI more than gender and age.

Arthroscopic Debridement and Capsular release of the Shoulder as a Treatment for Osteoarthritis of the Glenohumeral Joint (SS-22) Chandra S. K. Reddy, M.D., Matthew Clarke, M.D., Derek H. Ochiai, M.D., Eric J. Guidi, M.D., Robert P. Nirschl, M.D., M.S., Skye Donovan, P.T., Ph.D., O.C.S.

Introduction: In patients with osteoarthritis of the shoulder that have failed conservative treatment surgical treatment is an option. The surgical options available are total shoulder arthroplasty hemi-arthroplasty and resurfacing arthroplasty. Another alternative surgical option is an arthroscopic debridement and capsular release of the shoulder. We have been performing an arthroscopic debridement and capsular release at our institute as an alternative for patients not willing to undergo shoulder arthroplasty

Methods: We present a retrospective case series of 29 patients(32 shoulders, 3 bilateral)who underwent arthroscopic debridement of the shoulder for osteoarthritis. The patients were operated on between January 2001 - December 2008.The primary indication for the procedure was pain and stiffness. Many of the patients were offered and had refused a shoulder replacement or resurfacing procedure prior to presenting to our institute. In 24 of the 32 shoulders an auxiliary posterior portal was used which helped in excising osteophytes fro the inferior humeral head neck junction ("goat's beard"). Chondromalacia was graded on the Outerbridge grading scale, on either side of the glenohumeral joint and ranged from grade 2 to 4, with the median grade being grade 4 and the mean 3.7. Patients were examined pre and post operatively at 3 months, 6 months,1 year and the last follow up recorded. The average follow-up was 40 months. At each of these visits the Constant score was recorded, as was the Pain score and Activities of Daily Living (ADL) score.

Results: The mean preoperative constant score was 11.36.The mean post operative constant score was 26.29, with a gain of 15 points on the Constant score. The mean preoperative Forward flexion was 123.7 degrees which improved to 133 degrees. The mean preoperative Abduction was 92.6 degrees which improved to 115 degrees, an average gain of 22.4 degrees. The mean preoperative External rotation was 25 degrees which improved to 58 degrees, an average gain of 33 degrees. The mean preoperative Internal rotation was 12 degrees which improved to 40 degrees, a gain of 28 degrees. The preoperative pain score was 3, which improved to 10 on a 15 point scale (15 no pain). The preoperative ADL Score was 2.55, which improved to 6.27 on 20 point scale (20 normal ADLs).

Conclusion: On analyzing this series of patients our conclusion is that arthroscopic debridement of the shoulder has a role to play in the management of osteoarthritis of the glenohumeral joint. The most improvement was in regaining external rotation, decreasing pain which has been maintained at 40 months and improvement in the ability to perform ADLs This seems to be a viable

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.*