

lesions in the hip, it certainly questions whether there is an injury pattern that is common to this population.

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Retrograde Drilling of Osteochondral Lesions of the Talus (SS-36)

Summary: Osteochondral lesions of the talus that maintain an intact articular surface may be successfully treated with retrograde decompression of the cystic lesions utilizing a novel cannulated system. The surgical management of symptomatic osteochondral defects of the medial talar dome is difficult. When the articular surface is intact retrograde drilling through the body of the talus is accepted as one alternative to stimulate bone healing for stabilization of the OCD fragment. Between 1999 and 2001, eight consecutive patients underwent surgical treatment for symptomatic posterior medial OCD lesion of their talar dome. All patients underwent arthroscopy of the ankle followed by retrograde drilling of the talar lesion. A novel cannulated system was used to target the lesion, remove the necrotic segment and then backfill using Grafton. The average age of the patients was 36 years old (range 12 - 49 years). Follow-up ranged from 8 months to 44 months (mean 24 months). One patient was lost to follow-up. Of the remaining seven, outcomes were assessed with a modified American Orthopaedic Foot and Ankle Society (AOFAS) Ankle-Hindfoot Scale and the SF-12 general health survey. Four patients have repeat MRI scans at one year follow-up. The preoperative AOFAS scores from the modified hindfoot scale ranged from 0 to 41 (mean 22). Postoperative scores ranged from 52 to 68 (mean 56). Mean improvement of 34 points. The SF-12 has two components: the Physical Component Score (PCS) and the Mental Component Score (MCS). Mean preoperative and latest follow-up SF-12 PCS were 35.8 and 44.0, respectively. Mean preoperative and latest follow-up SF-12 MCS were 40.7 and 52.8 respectively. In this limited series, this technique appears to give comparable short-term results to previously described techniques. The new cannulated system simplifies the surgical procedure allowing the expansion of the technique to the general orthopedic surgeon and potentially greater safety. Overall, this procedure offers decreased operative time and maximizes safety and accuracy with retrograde talar drilling.

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Ulnar Collateral Ligament Reconstruction in Elite Throwing Athletes: Minimum 2-Year Follow-up (SS-37)

Objective: Ulnar collateral ligament (UCL) injuries may result in disabling valgus instability in throwing athletes. We evaluated the "docking technique" for UCL reconstruction, and describe a modification to the technique. **Methods:** UCL surgery was indicated in 19 high-level baseball players (11 professional, 8 collegiate) with medial elbow pain preventing effective throwing, medial pain with valgus stress, and MR arthrogram. Mean age was 21.8 (17.9-26.2). 1 had previous UCL reconstruction. 1 had previous arthroscopic elbow debridement. Reconstruction was performed using a muscle-splitting approach and the docking technique with palmaris or semi-tendinosus graft. Initially, a 2-strand construct was used; but during the study period we developed and began using a 3-strand construct using a doubled anterior bundle and a single posterior bundle. The ulnar nerve was not routinely transposed unless there were preoperative ulnar nerve symptoms (2 patients). 2 had osteophyte debridement. 1 had removal of a loose body. **Results:** Patients were followed for an average of 37 months, with a minimum 2 year follow-up. 18 returned to previous or higher level of participation. Three were collegiate infielders/occasional pitchers who did not wish to return to pitching but continued to play other positions. They were clinically and functionally asymptomatic. One player was lost to follow-up, and could not be identified on a professional roster. The average time to return to play was 15 months (6.5-27.8 months). Using the Timmerman-Andrews 100-point subjective scoring system, the average preoperative score was 81.5 (65-85); average postoperative score was 97.7 (80-100). Using the Conway-Jobe scoring system, 15 were excellent, 3 good. 1 patient underwent subsequent ulnar nerve transposition, and returned to previous level of professional play. **Conclusions:** UCL reconstruction with the docking technique can reliably return athletes to a high level of participation. This technique allows ease of graft handling and tensioning. The modification of a doubled anterior bundle increases the amount of collagenous tissue in a critical area, and may allow more accelerated rehabilitation.

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Lateral Epicondylitis: An Evaluation of Three Methods of Operative Treatment (SS-38)

Objective: The purpose of this study was to evaluate the clinical results of three surgical methods in treating recal-

recalcitrant lateral epicondylitis and compare them to each other. **Methods:** 316 Patients were treated operatively over a 5 year period for recalcitrant lateral epicondylitis by two surgeons. All patients failed an aggressive course of non-operative treatment consisting of NSAIDs, bracing, physical therapy, and steroid injections. Of those 316 patients, 76 were treated with percutaneous release performed in the office, 94 patients were treated with arthroscopic release, and 125 patients were treated with open lateral epicondylectomy. The follow-up averaged 2.2 years. Patient outcomes were evaluated with the Andrews Carson rating scale. Additionally patients' ability to return to previous level of vocation, activities, and the need for additional intervention was noted. **Results:** Satisfactory results were 93% in the percutaneous group, 95% in the arthroscopic group, and 97% in the open group. There were no significant statistical differences comparing the Andrews Carson scale, participation in vocation and recreational activities postoperatively, and need for further treatment. **Conclusions:** The most frequent treatment for recalcitrant lateral epicondylitis has been open release; however, percutaneous as well as arthroscopic techniques are equally efficacious treatment options.

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Arthroscopic Ulnohumeral Arthroplasty for Elbow Arthritis in Patients Under the Age of 50 Years (SS-39)

Degenerative arthritis of the elbow in patients under age 50 can cause disabling pain, severely restricted range of motion (ROM), and functional limitations. Open ulnohumeral arthroplasty has been demonstrated to produce satisfactory pain relief and ROM gains. We report the results of an all-arthroscopic ulnohumeral arthroplasty for degenerative arthritis of the elbow in young patients. **Materials and Methods:** Eleven consecutive patients under age 50 with radiographically documented degenerative elbow arthritis underwent an all-arthroscopic ulnohumeral arthroplasty as described by Savoie. Indication for surgery was pain and limited ROM refractory to 12 months of conservative treatment. Mean age at time of surgery was 36 years (range 23 to 47 years). Mean postoperative follow-up was 15 months (range 12-18 months). **Results:** Mean preoperative flexion was 100° (range 70°-140°), and extension (short of neutral) was 40° (range 10°-60°). Mean postoperative flexion was 140° (range 130°-150°; $P < .01$) and extension was 7° (range 0°-20°; $P < .01$). Total arc of motion averaged 60° preoperatively and 133° postoperatively (improvement of 73°; $P < .01$). Mean subjective pain level

improved from 9.2 to 1.7 (10 = worst pain; 0 = no pain). Mean subjective patient satisfaction improved from 1.8 to 9.0 (0 = unsatisfied; 10 = completely satisfied). **Discussion:** All-arthroscopic ulnohumeral arthroplasty provides significant short-term pain relief and restoration of elbow ROM and function in patients under age 50 with degenerative arthritis of the elbow. Long-term durability of this procedure with regard to preservation of ROM and radiographic progression of arthritis remains unknown.

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An Adenosine-2A Receptor Agonist Reduces Joint Inflammation and Joint Destruction Following Septic Arthritis (SS-40)

Infectious arthritis can cause long-term joint morbidity regardless of appropriate early treatment. In addition to the bacteria, the inflammatory response appears to contribute to joint degradation through the production of cytokines (such as IL-8), superoxides, and metalloproteases. We have shown that an adenosine-2A receptor agonist (ATL146e) could be chondroprotective following joint infection with *Staphylococcus aureus*. The purpose of this study was to determine whether an adenosine agonist might augment the current treatment regimen to prevent the arthritic effects associated with joint sepsis. **Methods:** An infectious arthritis model was created in rabbit knees. *S aureus* bacteria were injected into both knees of each rabbit. Sixteen hours following infection (time zero), treatment or no treatment was begun. The 48 rabbits were divided into 4 treatment groups: no treatment (control), ATL146e only, antibiotics only, or antibiotics plus ATL146e (12 rabbits per group). At time zero, mini-osmotic pumps filled with saline (control) or ATL146e were implanted in each rabbit based on the treatment group. Rabbits in the antibiotic treatment groups were given 7 days of intramuscular ceftriaxone, and those in the ATL146e group were given the drug for 72 hours. Analysis at days 1, 3, and 7 consisted of gross appearance, synovial fluid analysis (WBC counts, culture, and interleukin-8 (IL-8) assay), serum WBC count and culture, histologic analysis, and biochemical analysis for glycosaminoglycan (GAG). Results were determined and compared among treatment groups and analyzed statistically by analysis of variance (ANOVA). **Results:** Serum WBC counts were within normal range for rabbits in all treatment groups. Blood cultures taken prior to euthanasia were negative in all groups despite bilateral knee infections. Synovial fluid cultures at day 7 were positive in 83% of the untreated knees and 100% of the ATL146e only treated knees, but negative in all antibi-