

scopic procedure, but this one permits better joint view without surgical exposure thanks to the possibility to explore anteriorly and superiorly the articular space. Any removal of redundant soft tissue can be easily performed both in the articular space and between the two bones. Posterior ligament complex can be explored under direct visualisation from joint side. When the flipped sutures are passed through the two bones under direct and fluoroscopic visualization, it is possible to tight out knots as strong as needed, until the syndesmotomic joint closure. All patients came back to their former activity and to the same level in sport. This procedure with two standard portals and one superior-anterior approach along the fibula at the top of its distal third, permits good visualisation of lateral lesions, frontal instruments approach to the joint on the same side of scope, good and direct visualisation of the repair. Any surgical fixation of the injury can be lead out with the system the surgeon gives his preference.

Arthroscopic Radial Head Fracture Fixation: Case Controlled Study (SS-63). *Rajesh B. Manghattil, F.R.C.S., and Srinath Kamineni, F.R.C.S.(Orth)*

Summary: To compare the results of Open reduction and Internal Fixation with Arthroscopic assisted Reduction and Internal Fixation of Radial Head Fractures in a prospective case-controlled study.

Purpose: To compare the results of Open reduction and Internal Fixation with Arthroscopic assisted Reduction and Internal Fixation of Radial Head Fractures in a prospective case-controlled study.

Methods: 6 Mason Type II radial head fractures treated with Arthroscopic assisted Reduction and Internal Fixation was reviewed with age and sex matched cases of open reduction and internal fixations of similar type. Data on the Open reduction and Internal fixations were collected retrospectively. All arthroscopic surgeries were conducted as day-cases.

Results: The arthroscopic group required less analgesia, shorter hospital admissions, and had fewer complications. The average final range of movement at 1-year follow-up was 15 to 140 degrees in the arthroscopic group and 35 to 120 degrees in the open group. The Mayo Elbow Performance Score (MEPS) was 95/100 and 90/100 respectively. No acute complications were noted in the arthroscopic group, although one patient each had a radial nerve neurapraxia, superficial wound infection, and loose screw. Two patients of the arthroscopic group required secondary motion gaining operations - arthroscopic anterior capsulectomy for a fixed flexion contracture of 35 degrees, and arthroscopic radial

scar excision for loss of supination. Three patients in the open group required secondary surgery - arthroscopic anterior capsulectomy for fixed flexion deformities, and one had arthroscopic radial head excision for prominent screws, loss of forearm rotation, and radiocapitellar arthrosis pain.

Conclusions: This technique of arthroscopic fixation of Mason II radial head fractures takes slightly longer surgery time, a steeper learning curve, technically demanding and lack of adequate local expertise. However, this can result in anatomical restoration of the fracture, better range of movement and functional scores, less morbidity and analgesic requirement. Fewer complications, decreased need for secondary surgery, minimal hospital stay and a good cosmetic result puts this technique as an emerging popular option in the expanding field of minimally invasive surgery of the elbow. Level of Evidence: Therapeutic Level III.

Functional Outcome of Distal Biceps Repair Using A Bio-Interference Screw and Soft Tissue Button and Accelerated Postoperative Rehabilitation Program (SS-64). *Andy Heinzelmann, M.D., Larry D. Field, M.D., Felix H. Savoie III, M.D., and J. Randell Ramsey, M.D.*

Summary: A combined technique for distal biceps repair using a soft tissue button and biotenodesis interference screw: The Mazzocca technique.

Purpose: There are many techniques described to repair acute distal biceps tendon ruptures. Our purpose is to report the results of a single incision technique using a combination of a soft tissue button and biotenodesis interference screw with an accelerated rehabilitation protocol. Our hypothesis was that dual fixation of a distal biceps rupture will allow for early return to function.

Methods: From November 2003 to July 2007 forty-one elbows in forty patients had repair of an acute distal biceps tendon rupture (<6 weeks) through an anterior incision using an EndoButton and interference screw combined technique. The patients were evaluated pre- and post-operatively with a physical examination, radiographs and the Andrews-Carson elbow score. Thirty-one patients (thirty-two elbows) were contacted for a telephone interview at an average of 24 months post-operatively. The average post-operative time to resume normal activities or return to work was 6.5 weeks.

Results: The pre-operative Andrews-Carson score averaged 165 and the post-operative Andrews-Carson score averaged 194 points at final clinical follow-up. There was a statistically significant difference between the pre- and post-operative Andrews-Carson scores, $p < 0.001$. One patient had heterotopic ossification in the

biceps tendon associated with decreased pronation and supination. Two patients had a superficial radial nerve palsy that completely resolved by final follow-up.

Conclusions: Repair of acute distal biceps tendon ruptures using an EndoButton and interference screw technique through a limited anterior incision can allow for accelerated rehabilitation and early return to function.

Radiofrequency Microtenotomy for Epicondylitis: Five-Year Follow-Up and Proposed Mechanism of Action (SS-65). *James P. Tasto, M.D., David Amiel, Ph.D., Norimasa Takahashi, M.D., Ph.D., Renee Hardesty, L.V.N., Nobuyasu Ochiai, M.D., and Ryo Murata, M.D.*

Summary: 82 patients with chronic lateral and medial epicondylitis underwent bipolar radiofrequency microtenotomy of the affected area. Follow-up over 6 months to 5 years showed a 95% good to excellent result. There was early pain relief as well as an early return to activity and rapid return of grip strength. Basic science animal studies were performed to try to identify the mechanism of action. They have shown increased cell proliferation, a rather dramatic increase in growth factors, a dampening of the afferent nerve fibers, and a decrease in CGRP in the dorsal root ganglion. This procedure appears to be an affective minimally invasive procedure for chronic tendinopathy of the elbow.

Purpose: The purpose of this study is to evaluate the outcomes of the use of bipolar radiofrequency on chronic tendinosis of the elbow in a series of patients over a 5-year period. Radiofrequency has been used for a variety of tendinoses over the course of the past 5 years. We have previously reported in our short-term follow-up for a group of these tendinoses. Results have shown early pain relief and increased clinical function. We have now followed these patients for 5 years and are reporting on the results. We have also performed a number biochem-

ical as well as histological animal experiments to attempt to validate the mechanism of action of radiofrequency in this condition.

Methods: 82 consecutive patients with intractable medial and lateral epicondylitis were followed up for 1-5 years. Assessment for pain relief and function were conducted. Animal studies were done using New Zealand rabbit tendons which were evaluated for cell proliferation, growth factor acceleration, and histological characteristics. Analysis of neurological changes were conducted in the rat paw, analyzing not only the histologic characteristics of the sensory nerve fibers, but also analyzing the changes in CGRP in the dorsal root ganglion.

Results: 82 patients (71 lateral, 11 medial) were analyzed over a 6-month to 5-year period. Overall, there were 95% good to excellent results and 5% failures. Grip strength appeared to return to normal within 4-6 weeks. SF 36 results showed statistically significant improvement in all parameters. Patients had a statistically significant improvement in their DASH scores. Biochemical analysis of the rabbit tendon structures showed acceleration of growth factors soon after the application of bipolar radiofrequency as well as increased cell proliferation. Analysis of the rat paw afferent nerves showed early ablation and later reconstitution of these fibers. We also showed statistically significant decrease in the CGRP in the dorsal root ganglion, attempting to explain the early pain relief.

Conclusions: There appears to be strong clinical support for this micro-invasive procedure based on long-term follow-up. There were no significant complications with this procedure. Multiple basic science studies have been performed that support the hypothesis of accelerated regeneration of the tendon as well as neuro-dampening of the pain fibers as being contributory in pain relief.