

decrease in localized perfusion between the sutures of the double row after both the medial and lateral rows were secured with arthroscopic knots (3.3 vs. 1.9 $p=0.15$) although this was not statistically significant.

Conclusions: There was a decrease in the perfusion of the bursal side of the supraspinatus tendon after both the medial and lateral sutures were tied compared with intact tendon. This acute decrease in perfusion may lead to decreased tissue integrity and early repair failure. Further investigation is needed to assess this change in perfusion with healing rates of the rotator cuff as well as repair configurations which afford the least insult to the vascularity of the rotator cuff.

The Outcome and Structural Integrity of Arthroscopic Rotator Cuff Repair Using the Double-Row Suture Anchor Technique (SS-39). *Reuben Gobezie, MD, Toussaint Bruno, MD, Brozka Roman, MD, Laurent Lafosse, MD*

Summary: The purpose of this study was to evaluate the structural integrity of double-row rotator cuff repairs using preoperative and postoperative CT arthrogram at a minimum of 2 years clinical follow-up. The results of this study suggest that the structural integrity of rotator cuff repairs performed with the double-row suture anchor technique compare favorably with other cuff repair techniques and significantly relieve pain and function.

Purpose: The reported rate of failure after arthroscopic rotator cuff repair has varied widely. The influence of repair technique on the failure rates and functional outcomes after open or arthroscopic cuff repair remain controversial. The purpose of this study was to evaluate the functional and anatomic results after arthroscopic rotator cuff repair using the double-row suture anchor technique with the use of CT or MRI arthrogram in order to determine the postoperative integrity of the repair.

Methods: A prospective series of 105 consecutive patients undergoing arthroscopic double-row rotator cuff repair of the supraspinatus or combined supraspinatus and infraspinatus were evaluated at a minimum of two years after surgery (range 24-58 months). The evaluation included routine history and physical, preoperative and postoperative strength, pain, range of motion and Constant scores. Tears were classified as small, large and massive according to the number of tendons torn and the degree of coronal plan retraction based on the classification of Patte. In addition, all patients in this series had a preoperative and postoperative CT arthrogram or MRI arthrogram in order to define the extent of the rotator cuff

tear and evaluate the structural integrity of the repair postoperatively.

Results: The rate of structural failure after double-row suture anchor fixation in this study was 11.4%. The mean preoperative and postoperative Constant scores were 43.2 points (range 8-83, S.D. \pm 15.1 points) and 80.1 points (range 46-100, S.D. \pm 11.1 points), respectively. There were 36 small rotator cuff tears, 64 large tears of isolated supraspinatus or combined supraspinatus and infraspinatus tendons and 22 massive rotator cuff tears. Seventeen patients had fraying of the subscapularis that did not require repair. Intact rotator cuff repairs were associated with significantly increased strength and active range of motion. Pain relief and all parameters of shoulder function significantly improved after rotator cuff reconstruction. There were no surgical complications.

Conclusions: Arthroscopic repair of rotator cuff tears using the double-row suture anchor technique results in a much lower rate of failure than previously reported for either open or arthroscopic repair methods. There was no significant relationship identified between clinical outcomes and age, size of tear, mechanism of injury, duration of symptoms or workman's compensation. The excellent clinical results in terms of function and pain relief appear to correlate with the integrity of the repair.

Arthroscopic Coracoclavicular Ligament Reconstruction Utilizing Biologic and Suture Fixation: One to Two Year Results (SS-40). *William T. Pennington, MD, David Hergan, MD, Brian Bartz, MD*

Purpose: Although arthroscopic coracoclavicular ligament reconstruction has been generally successful, failure of the suture construct has led to the exploration of adding a biologic component to the construct, theoretically improving long term viability.

Methods: Twelve patients were selected as candidates for reconstruction utilizing both suture and biologic fixation. An arthroscopic approach is employed to expose the base of the coracoid. After performing an open distal clavicle excision, clavicular and coracoid tunnels are performed arthroscopically. The myotendinous end of a semitendinosis allograft is sutured to a Spider Plate (Kintekos, San Diego, CA) and the tendinous end of the graft is prepared with a running baseball stitch. A nitinol wire with a loop end (Arthrex, Naples, FL) is utilized to pass two free FiberTape sutures and the leading sutures from the tendinous end of the graft through the clavicular and coracoid tunnels, exiting out the anterior portal. One of the FiberTape sutures is retrieved with a grasper and passed over the anterior aspect of the distal clavicle. The

second FiberTape suture and the allograft are passed over the distal end of the resected clavicle. While the acromioclavicular joint is held reduced, the FiberTape sutures are tied to the plate and the allograft is tensioned until the plate is embedded against the clavicle. The tendinous end of the graft is secured to the superior surface of the clavicle with a bio-tenodesis screw.

Results: At one (n=3) to two years (n=9), eleven of the twelve patients were satisfied. There was one hardware complication, and one infection (secondary to patient non-compliance).

Conclusions: This arthroscopic approach allows the secure fixation of acromioclavicular joint dislocations with theoretically less morbidity of comparable open approaches. The addition of a semitendinosis graft to previously reported suture reconstruction concepts adds biologic fixation to the construct, thus providing long term stability to the reconstruction of the coracoclavicular ligamentous complex.

Arthroscopic Treatment of Acute Traumatic AC Joint Dislocation (SS-41). *Roderich Heikenfeld, MD, Rico Listringhaus, MD, Georgios Godolias, MD*

Purpose: The purpose of this study was to evaluate the results after arthroscopic treatment of traumatic AC joint dislocation using a Bosworth screw.

Methods: 18 Patients with acute AC Joint dislocation type Rockwood 3 were arthroscopically treated with temporary transfixation using a 7.0mm cannulated titanium screw of the clavicle to the coracoid process. The coracoid process is arthroscopically visualized and a drill guide for tibial anterior cruciate ligament positioning is used to exactly place the screw into the coracoid process. The screws were removed after 8 weeks. Patients were followed using a prospective study using the Constant Score after 3, 6, 12 and 24 months.

Results: 17 Patients were completely evaluated. One screw slipped out of the coracoid process 3 days after surgery requiring revision surgery. No screw breakage was observed. There were no other operation conditioned complications. Constant score showed a mean of 94,7 at last follow up. At follow up, no patient had a redislocation without weight bearing. With 10kg weight a mean clavicular elevation of 1,8mm was observed. All remaining patients were satisfied with the functional and cosmetic result.

Conclusions: There is some controversy about the surgical treatment of acute traumatic AC joint dislocation type Rockwood 3. Most open surgery techniques have the disadvantage of a poor cosmetic result or a difficult and dangerous hardware removal, because the

scar of the AC joint capsule that is supposed to stabilize the clavicle has to be opened. The Bosworth screw technique does not touch the AC joint at all, but the open procedure has poor cosmetic outcome. It is also important to use a large screw to ensure proper hardware stability to avoid hardware failure. Our technique might be an alternative for the operative treatment of acute AC joint instability, because it is safe and all anatomical structures remain intact in case revision surgery with i.e. arthroscopic AC joint resection and ligamentoplasty is necessary.

The “Medial Approach” for Arthroscopic Assisted Fixation of Lateral Tibial Plateau Fractures: Mid to Long Term Results (SS-42). *Bruce A. Levy, MD, Diego Herrera, MD, Peter MacDonald, MD, Peter Cole, MD*

Purpose: The purpose of this study is twofold: (1) to describe the indications for arthroscopic assisted fixation of lateral tibial plateau fractures based on the “cortical envelope”; and(2) to present the mid to long term outcomes of patients treated with arthroscopic assisted fixation and bone grafting from a medial metaphyseal window.

Methods: A retrospective review of a selected case series performed by a single surgeon of Schatzker Type II tibial plateau fractures treated with arthroscopic assisted reduction and percutaneous fixation was performed. All patients were followed using Rasmussen’s criteria for clinical and radiographic assessment.

Results: Sixteen patients (9 females, 7 males) were included in this study, with an average age of 44.8 years (range 32 to 78 years). Mean clinical and radiographic follow-up was 28 months (range 8 to 93 months). All patients achieved good-excellent results with mean clinical and radiographic Rasmussen scores of 29.5 and 17.5 respectively. At final follow-up average knee flexion was 141 degrees (range 125 to 150). All but one patient achieved full extension. Most common complication was painful hardware requiring removal in five patients. Three patients had minimal loss of reduction (2 to 4 mm), and only one patient developed post traumatic osteoarthritis, clinically asymptomatic at two-year follow-up.

Conclusions: Arthroscopic-assisted fixation and percutaneous pinning for lateral tibial plateau fractures utilizing the “Medial Approach” is an excellent treatment modality in carefully selected patients and fracture types. Understanding the concept of the “cortical envelope” will help guide the surgeon in selecting fracture patterns amenable to the technique.