

ing; one patient had protein C deficiency while another had protein S deficiency. There were no fatalities associated with these complications. Six patients were placed in the lateral decubitus position and one patient was placed in the modified-beach chair position ($p < 0.05$) during arthroscopic shoulder surgery. Of interest, five of these seven events involved the operative upper extremity (71%), and two of these seven events (29%) involved the ipsilateral lower extremity. Six patients underwent rotator cuff repair, 5 patients underwent subacromial decompression, and three patients had distal clavicle resections. Five patients were smokers, and two were worker's compensation.

Conclusions: Postoperative deep venous thrombosis and pulmonary embolism are unusual but serious and potentially fatal consequences of arthroscopic shoulder surgery. We report a low incidence of just 0.24%, but all patients in this series required hospitalization and anticoagulation therapy. Despite the small size of this cohort, there was an association with patient positioning in the lateral decubitus position. It remains critical to be aware of this potential complication, and further investigation is necessary to determine if mechanical or pharmacologic DVT prophylaxis after arthroscopic shoulder surgery would be beneficial.

Arthroscopic Debridement of Severe Glenohumeral Osteoarthritis (SS-37). *Mark Burszty, MD, Robert Nirschl, MD*

Purpose: The role of arthroscopic debridement in the treatment of severe glenohumeral osteoarthritis (OA) has not been clearly defined. Our hypothesis is that arthroscopic debridement is a viable option in the treatment of severe glenohumeral OA.

Methods: A retrospective review was undertaken of twenty-one patients who underwent arthroscopic glenohumeral debridement for severe OA between 1996 and 2005 at our center. The operative procedure included intra-articular lavage, debridement of osteophytes, removal of loose bodies, capsular release, and synovectomy. Our technique utilized an accessory posterior-inferior portal in order to excise as much of the characteristic inferior humeral osteophyte as possible. The goals of removing the "goat's beard" osteophyte were the restoration of motion (particularly rotation through improved mechanics), and pain relief (via increased diffusion of load forces). Twelve patients were successfully contacted postoperatively, and completed questionnaires which focused on pre-and post-operative pain and activity restriction, as well as overall satisfaction. The twelve patients had a mean age of 59.1 years

(range 44-67) at time of surgery, and were contacted at a mean of 51.9 months (range 8-114) after surgery. Statistical analyses were performed using the paired t-test.

Results: Nine out of twelve patients responded that they would undergo the same procedure again given the same situation. Six were extremely satisfied with their result, three were somewhat satisfied, and three were dissatisfied. Subjective pain assessed using the VAS rating from 0-10 points decreased significantly from a mean of 6.2 pre-operatively to 3.2 post-operatively ($p = 0.01$). Subjective assessment of shoulder function using the scale incorporated in the Constant score significantly increased from a mean of 1 pre-operatively to 4.3 post-operatively ($p = 0.002$). Two thirds of our sample (eight out of twelve patients) returned to regular participation in sports or physically demanding recreational activity. Results did not deteriorate with time.

Conclusions: Arthroscopic glenohumeral debridement for severe OA led to substantial improvement in patient satisfaction, pain, and function, in eight out of twelve patients. Studies with a prospective design, incorporation of objective outcome measures, and comparison to other surgical options for severe glenohumeral OA would further elucidate the role of arthroscopic debridement.

In-Vivo Measurement of Rotator Cuff Perfusion Using Laser Doppler Flowmetry (SS-38). *Kenneth J. Accousti, MD, James Gladstone, MD, Bradford Parsons, MD, Raymond Klug, MD, Evan Flatow, MD*

Purpose: The purpose of this study is to examine the effects of tendon perfusion following arthroscopic rotator cuff repair. A laser Doppler flowmeter was used to measure the tissue perfusion of the rotator cuff before and after arthroscopic rotator cuff repair. There was a significant 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.

Methods: A laser Doppler flowmeter (BLF21A Transonic Systems Inc. Ithaca, NY) was used to measure the tissue perfusion of the rotator cuff before and after arthroscopic rotator cuff repair using suture anchors with a double row configuration. Cuff perfusion was assessed in normal tissue as well as in torn cuffs both before and after the arthroscopic knots were tied.

Results: Average perfusion for intact tendon was 6.2 (ml/min/100gm). The average perfusion for torn supraspinatus tendons was 3.3 (ml/min/100gm) before repair and 1.9 after repair. There was a significant difference in perfusion between healthy tendon and torn supraspinatus both before and after repair. There was a

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