

are comparable to results from open and mini-open repairs. Our study was designed to determine the complication rate of arthroscopic rotator repairs in a series of patients. **Methods and Materials:** All patients undergoing an arthroscopic rotator cuff repair by the 2 senior surgeons between 2/03 and 7/03 were identified. A total of 263 patients were identified. All charts were retrospectively reviewed looking for size of tear, number of anchors and/or tacks used and any complications following surgery. We divided the complications into major and minor complications. Major complications were defined as those events that required additional operation or re-operation, resulted in neurovascular injury, had technique or hardware failures and resulted in prolonged temporary or permanent disability. Minor complications were defined as those cases that did not require any further surgery but may have required additional therapies or extended observation. **Results:** Of the 263 cases, a total of 12 complications were identified. The complication rate for this series of patients was 4.5%. There were 3 major complications and nine minor complications. Major complications included one deltoid detachment and one anchor pullout. Minor complications included 3 patients with adhesive capsulitis, 3 patients with synovitis due to bioabsorbable cuff tacks, and 3 infections that required oral antibiotics. **Discussion:** Complications following open and mini-open rotator cuff repairs are uncommon. Our study found a complication rate of 4.5% and the majority of the complications were minor. Arthroscopic rotator cuff repair continues to improve as techniques and hardware improves.

Felix H. Savoie III, M.D., Kenneth J. Brislin, M.D., Larry D. Field, M.D.,

#### **All-Arthroscopic Versus Mini-Open Rotator Cuff Repair: Long-Term Follow-up (SS-10)**

All arthroscopic repair has previously been shown to show equivalent short-term outcome and decreased morbidity compared to mini-open repair. Concerns have remained however about both the technical difficulty and long-term outcome of all-arthroscopic repair. From 1/96 to 3/99 501 patients were the subjects of an earlier report in 2000 on the preliminary results contrasting all arthroscopic repair and mini open repair. Two hundred twenty one of these had moderate or large tears or other diagnoses and were excluded, leaving 280 patients for review. 126 chose an all-arthroscopic repair versus 154 with an open repair. These patients were re-reviewed four years later to form the basis of this study. Follow-up averaged 84.3 months for the arthroscopic and 95.8 for open with a minimum of six years. Age, gender, associ-

ated findings at surgery, and duration of surgery were not significantly different between the two groups. There were two manipulations and two reoperations for failed repair in the open group (3%) in the early study; one additional repair in the open group failed at longer follow-up. One patient had a loose anchor (1%) using second-generation anchors and better technique. Two patients had early failed repairs and an additional two failed later with a total reoperation rate of 4% ( $p = ns$ ). Final outcomes as measured by ASES, UCLA and SST scores were not statistically different. All arthroscopic repair is shown to offer a significant reduction in perioperative morbidity over mini open repair. Mid-range follow-up continues to show equivalent outcomes between the two techniques. While the anatomic outcome of the two techniques at mid to long-term follow-up remains unknown, clinical results between the two techniques remains the same.

Stephen C. Weber, M.D., Jeffrey I. Kauffman, M.D.

#### **Hamstring Function 2 Years Following Anterior Cruciate Ligament Reconstruction Using Semitendinosus-Gracilis Autografts (SS-11)**

This retrospective study evaluated the 2 year outcomes ( $25.8 \pm 5$  months postsurgery) of 20 patients post-unilateral ACL reconstruction using semitendinosus-gracilis autografts with EndoButton femoral and interference screw-staple tibial fixation. Patients underwent clinical examination including instrumented manual muscle testing of isometric knee flexion-internal rotation torque, conventional and prone isokinetic hamstring torque testing ( $60^\circ$  and  $180^\circ$  per second), hop testing, knee arthrometry, modified VAS leg sensation evaluation, IKDC Subjective Knee Evaluation and IKDC Current Health Evaluation. One-way ANOVA were used to evaluate side-to-side differences and multiple regression analysis related these findings to knee function ( $P < .05$ ). Patient activity levels were 6 = competitive, 6 = frequently sporting, 7 = sporting sometimes, and 1 = non-sporting. Involved side knee laxity was  $66.7$  N ( $1 \pm 1$  mm),  $89$  N ( $2 \pm 2$  mm) and  $133.4$  N ( $2.7 \pm 2.5$  mm), respectively. Involved side active knee flexion was decreased  $8.2 \pm 5^\circ$ . Peak isokinetic hamstring torque did not display significant side-to-side differences. Involved side isokinetic hamstring work was decreased  $76.7 \pm 118$  J at  $60^\circ$  sec during conventional testing and was decreased  $94.4 \pm 107$  J and  $86.3 \pm 115$  J at  $60^\circ$  sec and  $180^\circ$  sec, respectively during prone testing. Isometric testing revealed decreased involved side hamstring torque at  $90^\circ$  flexion-neutral tibial rotation ( $17 \pm 14$  Nm), at  $120^\circ$  flexion-neutral tibial rotation ( $24.5 \pm 14$  Nm), at  $90^\circ$  flexion-internal tibial rotation ( $13.2 \pm 12$  Nm), and at  $120^\circ$  flexion-internal tibial