Rates of Revision Surgery and Total Costs for Patients Undergoing SLAP Repair vs. Biceps Tenodesis

SS-26

May 19, 2017, 9:50 AM

Aravind Athiviraham, M.D., Presenting Author
Ravand Khazai, M.D.
Harout Boyadjian, M.D.
Lewis Shi, M.D.

Introduction: To retrospectively evaluate rates of revision surgery for Superior Labrum Anterior to Posterior (SLAP) repair and biceps tenodesis at 3 year follow-up.
Methods: Using the MarketScan Research Databases (Truven Health Analytics), patients who underwent arthroscopic SLAP repair (CPT code 29807) and open or arthroscopic biceps tenodesis (CPT 23430 or 29828) within the encompassed time period (2003-2014), and who remained tracked within the system for at least three contiguous years post-operatively were included. Patients with concomitant rotator cuff repair, or CPT code 29827, were excluded from the study. Rates of repeat shoulder surgery within three years post procedure were evaluated (defined as the occurrence of any of the following CPT codes: 29807, 23430, 29828, 29822, 29823, 29825), as were comparative demographics, total cost of surgery at 6 months, and narcotic usage.
Results: 25,142 patients (average age 38.3) underwent SLAP repair, of whom 2,891 (11.5%) underwent a repeat shoulder surgery within three years. Female patients and those aged >35 years had a statistically higher rate of revision (12.6% vs. 11.1%, $p < 0.001$ and 12.1% vs. 10.4%, $p < 0.001$, respectively), and tended to take more pain medication ($p<0.001$). 15,173 patients (average age 55.3) underwent biceps tenodesis, of whom 1,631 (10.7%) underwent revision shoulder surgery within three years. Average rate of revision surgery was statistically higher for SLAP repair vs. tenodesis (11.5% vs 10.7%, $p<0.001$). Average time to revision was 410 days for SLAP repair vs 386 days for biceps tenodesis ($p=0.021$). Total cost of SLAP repair ($12,826) was slightly lower than costs for biceps tenodesis ($14,942), $p <0.001$.
Conclusion: Overall the rates of revision and cost data for SLAP repair and biceps tenodesis are similar, however SLAP repair is associated with a small but statistically higher rate of revision shoulder surgery within three years, particularly in females older than 35 years.

Randomized Prospective Analysis of Arthroscopic Suprapectoral and Open Subpectoral Biceps Tenodesis: 1 Year Follow-up

SS-27

May 19, 2017, 10:00 AM

Brian Forsythe, M.D., Presenting Author
William Zuke, B.A.
Beatrice Go, B.S.
Adam Yanke, M.D.
Nikhil Verma, M.D.
Anthony Romeo, M.D.

Introduction: Surgical treatment for biceps pathology can include tenotomy or various forms of tenodesis. Techniques for tenodesis include intra-articular soft tissue fixation or osseous fixation, suprapectoral osseous fixation, and subpectoral osseous fixation. Regarding the latter two, it is unclear if there is a clinical or surgical benefit of performing an open subpectoral biceps tenodesis (OBT) versus arthroscopic suprapectoral biceps tenodesis (ABT). This randomized clinical trial assesses these two techniques.
Methods: Patients diagnosed with biceps tendinopathy who met the inclusion criteria were randomized into the ABT or the OBT group. Prior to surgery, patients were asked a series of questions regarding their anterior shoulder pain and underwent a subsequent shoulder exam. Follow-up was completed at 3 months, 6 months, and 1 year time points, during which the shoulder exam and patient questionnaires were completed.
Results: A total of 38 patients were enrolled, 18 ABT and 20 OBT, with a mean age of 43.5 ± 10.5 years and a mean BMI of 28.3 ± 5.4. The surgical time for the ABT group, 17.2 ± 3.7 minutes, was significantly greater than the OBT group, 11.7 ± 6.1 ($p<0.01$). One patient was converted from the ABT group to the OBT group due to sheering of a severely attenuated tendon preventing an ABT. One patient in the OBT group required a revision tenodesis. No significant difference ($p > 0.05$) was found in strength or anterior shoulder pain. Additionally, no significant difference ($p > 0.05$) was found in clinical outcome scores (ASES, Constant subjective, WORC, KJOC) between the two groups.
Conclusion: This randomized clinical trial suggests there is no clinical difference between the two techniques. Additionally, while the arthroscopic procedure requires more surgical time, the revision rates are not different. Besides the cosmetic concern for an additional scar, we recommend decisions to be made based on surgeon preference and experience.

Biceps Tenodesis Versus Tenotomy in Treatment of Lesions of Long Head of Biceps Brachii in Patients Undergoing Arthroscopic Shoulder Surgery

SS-28

May 19, 2017, 10:05 AM

Peter MacDonald, M.D., F.R.C.S.C., Presenting Author
Sheila McRae, M.Sc., Ph.D.
Greg Stranges, M.D., F.R.C.S.C.
Jason Old, M.D.
Jamie Dubberley, M.D., F.R.C.S.C.
Randy Mascarenhas, M.D.
Jeffrey Leiter, M.Sc., Ph.D.
Mark Nassar, M.D.
Peter Lapner, M.D., F.R.C.S.C.

Introduction: To compare patient-reported and objective outcomes between biceps tenotomy and tenodesis in patients with lesions of the long head of biceps tendon (LHBT).
Methods: The study is a prospective, randomized, controlled trial targeting patients +18 years of age

undergoing arthroscopic shoulder surgery to manage a lesion of LHBT. Previous surgery on the affected shoulder or any other significant medical comorbidity were exclusion criteria. The primary outcome measure was the American Shoulder and Elbow Society standardized assessment of shoulder function (ASES). Secondary outcomes included: Western Ontario Rotator Cuff score (WORC), operative time, presence of cosmetic deformity, and elbow flexion and supination strength (affected/unaffected ratio). Study time points were pre, and 3, 6, 12, and 24 months post-operative. Magnetic resonance imaging (MRI) was conducted at 12-months post-operative.

Results: Fifty-six participants were randomly assigned to each group. Table 1 summarizes the current results to 12-months. There were no significant differences in ASES or WORC scores at pre- or post-surgery time points. MRI findings were available on 40 patients at the 12-month post-operative period. Of 23 in the tenodesis group, one was not intact and retracted 18 cm and two were partially torn. Of the 17 in the tenotomy group, none appeared retracted. The relative risk of patient-reported cosmetic deformity in the tenotomy group relative to the tenodesis group was 11.0 (p=0.09) at 12-months. There were no differences between groups in level of pain or cramping, or elbow flexion or supination strength at any time point.

Conclusion: Arthroscopic treatment of lesions of LHBT, whether tenodesis or tenotomy, was shown to have favourable results. Tenodesis favoured tenotomy based on the presence/absence of cosmetic deformity. Otherwise, there were no measurable differences between techniques. As data continues to be gathered to 24-month post-operative, longer-term benefits and drawbacks of each procedure may become evident.

Mid-term Outcomes and Survivorship of Hip Arthroscopy for the Treatment of Labral Tears and Femoro-acetabular Impingement SS-29

May 19, 2017, 1:30 PM

Itay Perets, M.D., Presenting Author
Benjamin Domb, M.D.
Edwin Chaharbakhshi, B.S.
Mary Close, B.S.
Brian Mu, B.A.
Lyall Ashberg, M.D.

Introduction: Mid-term clinical outcomes for patients undergoing current hip arthroscopic treatments for labral tears and femoro-acetabular impingement (FAI) have not yet been reported. Additionally, the general population of clinicians may not be adequately informed of these pathologies, which may lead to delayed diagnoses.

Methods: We conducted a retrospective review of prospectively collected data for patients that underwent hip arthroscopy between February 2008 and December 2010. Patients with previous ipsilateral hip conditions were excluded. Each patient's age at onset of hip symptoms and at surgery were documented. The modified Harris Hip Score (mHHS), Non-Arthritic Hip Score (NAHS), Hip Outcome Score − Sport Specific Subscale (HOS-SSS), and visual analog scale for pain (VAS) were documented preoperatively and at a minimum of five years post-operatively. Patient satisfaction was documented at follow-up. Revision surgeries, conversions to arthroplasty, and postoperative complications were documented.

Results: We analyzed 205 hips with mean follow-up of 69.3 months. A mean of 24 months between onset of hip symptoms and surgery was observed. There were significant improvements in all patient-reported outcomes (PROs) from preoperatively to latest follow-up: mHHS (64.8 to 82.8), NAHS (62.2 to 85), HOS-SSS (47.2 to 75), and VAS (5.8 to 2.1). Mean satisfaction at follow-up was 8.0. Fourteen patients underwent revision arthroscopy during the follow-up period. Survivorship at latest follow-up was 89.3%. There was a 5.4 rate of major complications; the most common was numbness, which occurred after 2.4% of surgeries and resolved in 80% of cases.

Conclusion: Hip arthroscopy for the treatment of labral tears and FAI is a safe procedure that demonstrates good mid-term results with high patient satisfaction and 89.3% survivorship. These pathologies may have delayed diagnoses, which is supported by the two-year differential between onset of hip symptoms and surgical treatment.

Patient Reported Outcomes of Capsular Repair versus Capsulotomy in Patients Undergoing Hip Arthroscopy: Minimum 5-Year Follow-Up. A Matched Cohort Study SS-30

May 19, 2017, 1:35 PM

Lyall Ashberg, M.D., Presenting Author
Benjamin Domb, M.D.
Edwin Chaharbakhshi, B.S.
Itay Perets, M.D.
Brian Mu, B.A.
Mary Close, B.S.

Introduction: This study aimed to elucidate what effect various capsular management strategies during hip arthroscopy might have on patient outcomes over the mid-term.

Methods: Between February 2008 and February 2011, data were prospectively collected on patients undergoing hip arthroscopy. Patients were matched for age ± 5 years, gender, BMI ± 5, Workman's Compensation claim, and acetabular coverage. Inclusion criteria were unrepaired capsulotomy or closure and lateral-center edge angle (LCEA) ≥18°. Exclusion criteria were previous hip surgery or conditions and preoperative Tönnis grade >1. Patient-reported outcome scores (PROs) including modified Harris Hip Score (mHHS), Non-Arthritic Hip Score (NAHS), Hip Outcome Score-sport specific subscale (HOS-SSS) and Visual Analogue Score for pain (VAS) were collected preoperatively, at 3 months, and annually thereafter. Patient satisfaction was recorded from 0-10 (10=most satisfied).

Results: Minimum five-year follow-up was available for 287 (82.5%) of 348 hips that met inclusion criteria. Of these 287 hips, 172 underwent unrepaired capsulotomy