Paper 10

Title: Prospective Randomized Comparison of Capsule Management Techniques During Hip Arthroscopy

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Objectives: Capsular management during hip arthroscopy remains controversial. Studies evaluating this topic consist mostly of retrospective comparative reviews of prospectively gathered data on a large series of patients. The purpose of this study was to perform a prospective randomized trial to comparatively assess three commonly performed capsule management techniques. It was hypothesized that capsular closure during hip arthroscopy would result in superior outcomes compared to non-closing capsulotomy management techniques.

Methods: Patients undergoing hip arthroscopy were randomly assigned into three groups at the time of surgery: 1) T-capsulotomy without closure (TC), 2) interportal capsulotomy without closure (IC), and 3) interportal capsulotomy with closure (CC). Inclusion criteria included patients with labral tear on advanced imaging, cam lesion with alpha angle greater than 55 degrees, center-edge angle less than 40 degrees, and Tönnis grade 0 or 1. Patients younger than 18, older than 55, or those with signs of clinical hip hypermobility or radiographic dysplasia were excluded from the trial. All patients underwent labral repair and femoral osteoplasty. Modified Harris Hip Score (mHHS), Hip Outcome Score-Activities of Daily Living (HOS-ADL), and Hip Outcome Score-Sports Specific Subscale (HOS-SSS) was obtained preoperatively and at intervals up to 2 years. Other outcomes obtained included need for future hip surgery.

Results: 50 patients were randomly allocated into each group. Patient demographics, preoperative patient-reported outcomes (PROs) and radiographic measures of impingement were similar between all three groups. Revision hip arthroscopy was performed in 5 TC patients, 2 IC patients and 0 CC patients (p=0.17). Conversion to hip arthroplasty occurred in 4 patients in the TC group, none in the IC or CC groups (p=0.48). All three groups showed increased PRO scores postoperatively compared to preoperative values (p<0.01). The CC group when compared to the TC group demonstrated superior mHHS (86.2 vs 76), HOS-ADL (85.6 vs 76.8), and HOS-SSS (74.4 vs 65.3) at the final 2 year follow up (p<0.001). The IC group demonstrated more modest improvements in outcomes compared to the TC group. The CC group showed greater improvement in HOS-SSS compared to the IC group at early follow up (65.6 vs 55.1, p>.001) that was not maintained at 2 years (74.4 vs 71.4, p=.28).

Conclusion: Patients undergoing capsular closure during hip arthroscopy showed improved patient-reported and surgical outcomes compared to those with unrepaired T-capsulotomy or interportal capsulotomy. These results suggest that repair after capsulotomy may be a favorable arthroscopic capsule management technique, especially in respect to optimizing postoperative activities of daily living.
Paper 11

Title:
Predictors of Persistent Postoperative Pain at Minimum Two-years After Arthroscopic Treatment of Femoroacetabular Impingement

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Objectives: To evaluate predictors for persistent postoperative pain following hip arthroscopy for femoroacetabular impingement syndrome (FAIS). We hypothesized that patients with chronic preoperative pain, smokers, and those with co-morbid mental health disease would have greater persistent postoperative pain.

Methods: Patients undergoing hip arthroscopy for FAIS were identified in a prospectively collected database with a minimum of two-year follow-up with patient reported outcomes (PROs). Previous open hip surgery and diagnoses other than FAIS were excluded. Patients were grouped by VAS -Pain scores as limited (≤30) and persistent (>30). Patient factors and outcomes were analyzed with univariate and correlation analyses to build a logistic regression to identify predictors of postoperative pain.

Results: The limited pain (n=514) and persistent pain (n=174) groups totaled 688 patients (449 females). The persistent pain group was significantly older with a greater proportion of revision arthroscopy, worker’s compensation cases, smokers, hypertension, a history of a psychiatric diagnosis and preoperative narcotic use. Both collegiate sport participation [odds ratio (OR) -6.09 (95% CI: -1.23--30.3, p=0.027) and frequent running (OR -1.75, 95% CI: -1.09--2.81; p=0.021) decreased risk for pain. Smokers were 2.22 times more likely to have persistent pain (p=0.032; 95% CI: 1.07-4.46). A history of anxiety and depression is associated with 2.87 greater risk for persistent pain (p=0.030; 95% CI: 1.11-7.45).

Conclusion: Independent predictors for persistent postoperative pain include current smoking and mental health history positive for anxiety and depression. Running as a primary form of exercise and high-level athletic participation are protective against persistent pain. Additional risk factors for increased pain include increased age, workers’ compensation claim, previous comorbid disease treated with surgery, and decreased preoperative PROs. Our analysis demonstrated significant improvements in both pain and functional PROs in both the limited pain and persistent pain groups; however, those with persistent pain demonstrated significantly inferior PROs.