

A Meta-Analysis of Comparative Studies Comparing Complete Capsular Closure Against Unrepaired Hip Capsules During Hip Arthroscopy

Suhas Padma Dasari, Joshua John Condon, Lucas Kasson, Enzo S Mameri, Zeeshan Ahmad Khan, Garrett Ryan Jackson, Benjamin Kerzner, Safa GURSOY, Jorge A Chahla

INTRODUCTION:

During hip arthroscopy, a capsulotomy is performed to gain access to the central and peripheral compartments of the joint. The biomechanical importance of the hip capsule is well described, yet there remains controversy over routine capsular closure during hip arthroscopy.

Purpose: To perform a meta-analysis of comparative clinical studies to compare the pooled clinical outcomes of complete hip capsule closure cohorts against pooled unrepaired hip capsule cohorts.

METHODS: The Cochrane Database of Systematic Reviews, The Cochrane Register of Controlled Trials, PubMed, MEDLINE, Web of Science, CINAHL/EBSCO, and SCOPUS were queried in February of 2022 for literature directly comparing clinical outcomes for hip arthroscopy patients treated with either complete capsular closure or an unrepaired capsule. Primary outcomes included the incidence of revision hip arthroscopy, incidence of subsequent conversion to total hip arthroplasty (THA), and improvement from baseline of the following: modified Harris Hip score (mHHS), Hip Outcome Score (HOS) activities of daily living (ADL), HOS sports specific subscale (SS), Copenhagen Hip and Groin Outcome Score (HAGOS) ADL, and HAGOS SS. A pooled weighted mean difference was used to compare changes in mHHS. A pooled standardized mean difference was used to compare changes in ADL and SS outcomes. A pooled relative risk was used to compare the probability of revision hip arthroscopy and conversion to THA based on capsular management.

RESULTS: Eleven studies with a total of 1897 patients were identified (Figure 1). Complete capsule closure had a significantly higher improvement in mHHS (Figure 2; $p < 0.00001$) and ADL outcomes (Figure 3; $p = 0.01$). There was no difference in SS outcomes (Figure 4; $p = 0.81$) between the two groups. There was a significantly lower probability for subsequent revision hip arthroscopy (Figure 5; $p = 0.009$) and conversion to THA (Figure 6; $p = 0.03$) in patients with complete capsular repair.

DISCUSSION AND CONCLUSION: This meta-analysis of comparative clinical studies demonstrated that routine complete capsular closure after hip arthroscopy led to superior clinical outcomes relative to unrepaired cohorts. It can be concluded that restoring the native anatomy and biomechanics of the hip joint is critical for maximizing clinical outcomes during hip arthroscopy.

