

Arthroscopic Surgery for Global Versus Focal Femoroacetabular Impingement: Are the Outcomes Different?

Dean K. Matsuda, MD, USA

Nikhil Gupta, BS, USA

Raoul Burchette, MS, USA

Kaiser West Los Angeles Medical Center
Los Angeles, CA, USA

Summary:

Arthroscopic surgery for global pincer femoroacetabular impingement is as safe and successful as that for less severe focal pincer deformities.

Abstract:

Introduction:

Pincer femoroacetabular impingement occurs in two forms: focal and global, the latter considered more severe and often treated with open surgical dislocation. We use a multicenter prospective design to investigate if any differences in arthroscopic surgical outcome are seen between these two subtypes.

Methods:

A prospective design comparing global (center-edge angle 40+) versus focal pincer cohorts with 2 year minimum follow-up using the nonarthritic hip score (NAHS) and patient satisfaction was implemented at 3 community hospitals. Pre-operative clinical and radiographic findings, intra-operative findings and surgical procedures, and post-operative NAHS at 3-, 12- and 24-post-operative months were obtained and inter-group comparisons were made. Complications, revision surgeries, and conversion hip arthroplasties were compared between groups. A multivariable model was created for analysis.

Results:

The Global cohort consisted of 15 patients (18 hips, 66.7% male) of mean age 37.2 years (18.1 to 55.2 years). The NAHS was 51.5 (19 to 94) before surgery and 64.2, 66.0, and 74.1 at 3,12, and 24+ months post-surgery of which the change in final NAHS (preop to 24+ months) was significant ($P=0.01$). Mean satisfaction on a Likert scale (1= very dissatisfied to 5 = very satisfied) was 3.3 at 24 mos. There was 1 THA conversion (5.5%), no revision FAI surgeries or complications.

The Focal cohort consisted of 129 patients (134 hips, 47.8 % male) of mean age 40.2 years (13.0 to 73.6 years). The NAHS was 54.8 (9 to 93) before surgery and 68.3, 76.0, and 76.9 at 3,12, and 24+ months post-surgery of which the change in final NAHS (preop to 24+ months) was significant ($P<0.0001$). Mean satisfaction on a Likert scale (1= very dissatisfied to 5 = very satisfied) was 3.6 at 24 mos. There were 11 THA conversions (8.5%), 3 complications (2 heterotopic ossification, 1 transient pudendal neuropraxia 2.3%), and 2 revision FAI surgeries (1.6%).

Comparison between cohorts revealed no statistically significant difference in 3, 12, or 24+ month NAHS ($P>0.24$).

Comparison between cohorts revealed no statistically significant difference in 3, 12, or 24+ month satisfaction ($P>0.25$).

Comparison between cohorts revealed no statistically significant difference in 3, 12, or 24+ month THA conversion rate ($P=0.70$). Moreover, of the variables we investigated (i.e., age, gender, BMI, Tonnis grade, and time to surgery from pain onset), no variable was found to be a statistically significant predictor of poorer outcomes in the change from preop to 24 months model.

Discussion and Conclusion:

There were no significant differences in arthroscopic surgical outcome for global versus focal pincer FAI. Both groups had significant improvement and moderate satisfaction with few complications. Arthroscopic surgery for global

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deformities may be safely performed using arthroscopic techniques with outcomes comparable to those with lesser focal deformities. The historical need for open surgical dislocation for the surgical treatment of global deformities may be respectfully challenged.