

Patients Undergoing Primary Hip Arthroscopy with Borderline Hip Dysplasia Demonstrate Comparable Outcome Scores and Survivorship to Non-Dysplastic Controls: A Propensity Matched Study with Minimum 10-Year Follow Up

Michael Joseph Vogel, Reagan Chapman, Corey Beals, Jordan Henry Larson, Thomas W Fenn, Shane Jay Nho¹
¹Midwest Orthopaedics at Rush

INTRODUCTION:

Patients with borderline hip dysplasia (BHD) and concomitant femoroacetabular impingement syndrome (FAIS) have demonstrated similar outcomes at short- and mid-term follow up compared to equivalent patients without dysplasia. However, comparisons between these groups at long-term follow up is yet to be investigated. The purpose of this study is to compare long-term clinical outcomes between patients undergoing primary hip arthroscopy with BHD for FAIS vs. non-dysplastic matched control patients.

METHODS: A retrospective cohort study was conducted on patients with BHD (Lateral Center Edge Angle between 18-25°) who underwent hip arthroscopy for FAIS from January 2012 to February 2013. Patients were propensity matched in a 1:3 ratio by age, sex, and body mass index (BMI) to non-dysplastic control patients who underwent primary HA. Preoperative and postoperative radiographs were assessed. Patient-reported outcomes (PROs) preoperatively and at 10-years postoperatively including the Hip Outcome Score Activities of Daily Living subscale (HOS-ADL) and Sports subscale (HOS-SS), modified Harris Hip Score (mHHS), international Hip Outcome Tool (iHOT-12), and Visual Analog Scale (VAS) for Pain and Satisfaction were compared between groups. Minimally Clinically Important Difference (MCID) and Patient acceptable symptomatic state (PASS) achievement rates were compared between groups. Kaplan-Meier survivorship curves were assessed between groups.

RESULTS: Twenty-eight patients with BHD (20 females; age: 30.8±10.8 years) were matched to 84 controls who underwent primary hip arthroscopy at follow up of 10.3±0.3 years. Both groups significantly improved from preoperative in all PRO measures at 10-years (p<0.001 for all). PRO scores were similar between groups, aside from HOS-SS (BHD: 62.9±31.9 vs. Controls: 80.1±26.0, p=0.030) and poorer preoperative-to-postoperative delta scores for VAS Pain (BHD: -34.2±27.2 vs. Controls: -48.5±26.1, p=0.047). Rates of MCID achievement were also similar between groups for all PROs. Rates of PASS achievement significantly decreased in BHD patients for HOS-ADL (BHD: 39.1% vs. Controls: 77.4%, p=0.002), HOS-SS (BHD: 45.5% vs. Controls: 84.7%, p=0.001), and VAS Pain (BHD: 50.0% vs. Controls: 78.5%, p=0.015) There was no significant difference in rate of subsequent reoperation on the index hip between groups. Kaplan-Meier survival analysis demonstrated comparable survivorship at long-term follow up (p=0.645).

DISCUSSION AND CONCLUSION: Patients with BHD in the setting of FAIS had significantly improved PRO scores at 10-year follow up compared to preoperative and scores comparable to propensity-matched controls without BHD. Rates of MCID achievement were also similar between groups, though BHD patients had lower rates of PASS achievement. BHD patients had similar long-term hip arthroscopy survivorship compared to controls, with no significant difference in revision or hip arthroscopy or conversion to THA rates.

