

Patients with Mild Osteoarthritis (Tönnis Grade 1) Demonstrate Comparable Results to Patients without Osteoarthritis following Hip Arthroscopy for Femoroacetabular Impingement Syndrome: A Propensity Matched Study at Minimum 10-Year Follow Up

Michael Joseph Vogel, Thomas W Fenn, Daniel J Kaplan¹, Reagan Chapman, Jordan Henry Larson, Christopher Brusalis², Shane Jay Nho³

¹New York University Langone Medical Center, ²Rush University, ³Midwest Orthopaedics at Rush

INTRODUCTION: There is a paucity of literature comparing patients with and without OA at long-term follow up following primary hip arthroscopy (HA) for femoroacetabular impingement syndrome (FAIS). This study aims to compare outcomes and rates of secondary surgery, including revision HA and conversion to total hip arthroplasty (THA), in patients with Tönnis grade 1 osteoarthritis undergoing HA for FAIS at minimum 10-year follow up compared to a propensity-matched group of Tönnis grade 0 patients.

METHODS: Patients undergoing primary HA for FAIS between January 2012 and February 2013 were identified. Patients with Tönnis grade 1 osteoarthritis were propensity matched in a 1:2 ratio by age, sex, and body mass index (BMI) to patients with Tönnis grade 0. Patient-reported outcomes (PROs) were collected preoperatively and 10-year postoperatively. Rates of Minimal Clinically Important Difference (MCID) and Patient Acceptable Symptomatic State (PASS) achievement were evaluated. Rates of secondary surgery including revision hip arthroscopy and conversion to total hip arthroplasty (THA) were evaluated. Gross survivorship between cohorts was evaluated using a Kaplan-Meier gross survivorship curve.

RESULTS: Thirty-one Tönnis grade 1 patients (age: 42.6±9.0; BMI: 28.0±6.3 kg/m²) were successfully matched to 62 Tönnis grade 0 patients (age: 42.1±8.5, p=0.805; BMI: 26.1±3.9 kg/m², p=0.117). Both Tönnis grade 1 and Tönnis grade 0 patients demonstrated significant improvements regarding all PROs at minimum 10-years (p<0.05 for all), except for HOS-ADL (p=0.066) in the Tönnis grade 1 cohort. No significant difference (p>0.05 for all) was noted between cohorts regarding any preoperative or 10-year PRO. High rates of 10-year MCID and PASS achievement were seen, with no significant differences between groups. Tönnis grade 1 patients had significantly higher rates (25.8%) of conversion to THA when compared to Tönnis grade 0 patients (4.8%) (p=0.006). Tönnis grade 1 patients had significantly lower gross survivorship compared to Tönnis grade 0 patients (71.0% vs. 85.5%) (p=0.04).

DISCUSSION AND CONCLUSION: Patients with Tönnis grade 1 OA and FAIS undergoing primary HA demonstrated comparable 10-year PRO and rates of MCID and PASS achievement to their propensity-matched Tönnis grade 0 counterparts. Patients with Tönnis grade 1 had significantly higher conversion to THA and reduced gross survivorship compared to patients with no evidence of preoperative OA.

Kaplan-Meier Estimates of Survival

