

Patient-Reported Outcomes and Satisfaction at Minimum 8-Year Follow Up among a Prospective, Multicenter Cohort Study of Patients undergoing First Generation Femoroacetabular Impingement Surgery

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INTRODUCTION: Femoroacetabular impingement (FAI) is a common source of hip dysfunction and secondary osteoarthritis, yet reports of the mid to long-term outcomes of first-generation FAI surgery are limited. The purpose of this study was to characterize patient-reported outcome measures (PROMs) at a minimum of eight years postoperatively after FAI surgery, as well as to identify predictors of clinical outcome.

METHODS: A prospective, multicenter cohort study was performed on patients treated for FAI with hip arthroscopy or surgical dislocation by seven surgeons at five institutions from 2008 to 2012. Inclusion criteria included diagnosis of isolated cam or combined cam/pincer type FAI after failure of at least 3 months of conservative treatment. Patients with prior ipsilateral hip surgery, diagnoses of slipped capital femoral epiphysis, or Legg-Calve-Perthes were excluded. Patients were assessed with modified Harris Hip Scores (mHHS) and Hip Disability and Osteoarthritis Outcome Scores (HOOS) for pain, sport and recreation, symptoms, quality of life (QOL), minimal clinically important difference (MCID) thresholds, and satisfaction surveys at a minimum of eight years postoperatively. Four-hundred-seventy-eight hips were enrolled and 367 hips completed follow-up data at a mean of 9.6 ± 2.7 years postoperatively. Multivariate logistic and linear regression was performed to identify independent predictors of outcome.

RESULTS: At a minimum eight-year follow up, the mHHS remained increased from 61.6 ± 15.1 to 83.3 ± 19.3 (p < 0.01) with 70.0% of patients achieving MCID at final follow up. HOOS Pain scores improved from 56.9 ± 20.8 to 80.0 ± 22.5 (p < 0.01). Predictors negatively effecting postoperative mHHS were age ³ 30 years at time of surgery [beta estimate (BE) - 0.08; p = 0.001] and BMI ³ 30 [BE -0.11; p = 0.02]. BMI ³ 30 was also inversely associated with improvements in HOOS Pain [BE -0.09; p = 0.02], HOOS Sport and Recreation [BE -0.16; p = 0.02], HOOS ADL [BE -0.15; p = 0.03], HOOD QOL [BE -0.26; p = 0.03], HOOS Symptoms [-0.14; p = 0.04]. Surgical technique (hip arthroscopy vs. surgical dislocation), lateral center edge angle, alpha angle, and labral repair were not predictive of outcome measures. Among the patients with completed satisfaction surveys, 90.7% (n = 292) reported that they were satisfied with their surgical outcome.

DISCUSSION AND CONCLUSION: This study indicates that FAI surgery is an effective treatment option with maintained improvements in PROMs for the majority of patients at an average 9.6 years follow up. **Patient reported outcomes at baseline and minimum 8-year follow up.**

PROMs	N	Baseline	Minimum 8-year follow-up	N(%) of patients meeting MCID	% meeting PASS	p value [#]
mHHS	369	61.6 ± 15.1	83.3 ± 19.3	258 (70.0)	67.0	<.0001
HOOS						
Pain	339	56.9 ± 20.8	80.0 ± 22.5	237 (69.9)	-	<.0001
Sport and recreation	338	44.9 ± 24.9	73.1 ± 30.0	220 (65.1)	-	<.0001
Symptoms	206	57.0 ± 20.7	74.8 ± 21.6	138 (67.0)		<.0001
QOL	207	30.9 ± 19.3	64.6 ± 29.2	154 (74.4)		<.0001
UCLA activity score 9 or 10, %	356	38.8	52.7	101 (28.4)	-	0.002
SF-12 physical	311	38.4 ± 10.8	48.3 ± 11.0	180 (57.9)	-	<.0001
SF-12 mental	311	52.2 ± 10.6	52.4 ± 10.0	90 (28.9)	-	0.85

p value compares baseline and final follow-up data using McNemar test for categorical and paired t-test for continuous variables, MCID:minimum clinically important difference, PASS:patient acceptable symptom state