Delayed Hip Arthroscopy for Femoroacetabular Impingement Syndrome Does Not Increase Risk of Revision Hip Arthroscopy or Conversion to Total Hip Arthroplasty But Does Increase Rates of Chronic Opiate Use

Kian Niknam, Ryan Freshman[1], Sergio Eduardo Flores, Drew Lansdown, Stephanie Erin Wong, Alan Zhang[2]
[1]UCSF Department of Orthopedic Surgery, [2]UCSF Orthopaedic Institute

INTRODUCTION:

In recent years, the utilization of hip arthroscopy to treat femoroacetabular impingement syndrome (FAIS) has increased due to its low complication rates, positive impact on patient-reported outcomes (PROs), and association with faster rehabilitation. Despite this, there are high rates of revision and conversion to total hip arthroplasty (THA) in some of these patients. It is unclear whether time from initial FAIS diagnosis to surgery is a risk factor for poor outcomes. In this study, we examined the relationship between timing of hip arthroscopy for FAIS and rates of 2-year revision hip procedures, 2-year conversion to total hip arthroplasty (THA), post-operative medical complications, and opioid prescriptions.

METHODS:

This is a retrospective cohort study utilizing the PearlDiver database. Current Procedural Terminology (CPT) and International Classification of Diseases (ICD) codes were used to identify patients who had surgery for FAIS with minimum 2 years follow-up available. Patients were stratified by 3-month intervals into 5 groups based on time from diagnosis of FAIS to hip arthroscopy. Multivariate logistic regression was performed to determine factors independently associated with continued opiate use and subsequent surgeries.

RESULTS:

A total of 14,677 patients were included in the study. The 2-year rate of revision hip arthroscopy was 4.2%. Univariate analyses showed lower rates of revision in patients who delayed FAIF operative management (p=0.048), however, extended opiate use was noted in patients who had delayed FAIS intervention (p<0.001) (Table 1). Regression analysis demonstrated that timing of surgery was not associated with 2-year revision hip arthroscopy or conversion to THA (Table 2) (Table 3). As time from diagnosis to surgery increased, even in multivariate regression analysis, there was a higher risk of filling an opioid prescription 90 days after surgery (P<0.001) (Table 4). Age, sex, obesity, and tobacco use were significant predictors of revision hip arthroscopy and conversion to THA (p<0.001).

DISCUSSION AND CONCLUSION:

There is no significant difference between timing of surgery for FAIS and odds of revision or conversion to THA. Prolonged opiate use after hip arthroscopy was significantly higher as duration from initial FAIS diagnosis to surgery increased. Age, sex, obesity, and tobacco use are significant predictors for revision, conversion to THA, and continued opiate prescriptions.

Table 1. Rates of 90-Day Post-Operative Readmision and Medical Complications, 90-Day Post-Operative Opioid Prescriptions, and 2-Year Conversion to Total Hip Arthroplasty and Revision Surgery

	<3 Months	3-6 Months	6-9 Months	9-12 Months	>12 Months	P-Value
Readmission <90 days (%)	104 (0.9)	11 (0.8)	3 (0.7)	0 (0.0)	1 (0.2)	0.401
Urinary Tract Infection (UTI) (%)	228 (1.9)	35 (2.4)	7 (1.6)	1 (0.7)	11 (2.2)	0.500
Pneumonia (%)	57 (0.5)	14 (0.9)	3 (0.7)	0 (0.0)	5 (1.00)	0.069
Hematoma (%)	20 (0.2)	1 (0.1)	0 (0.0)	0 (0.0)	1 (0.2)	0.772
Superficial Wound Infection (%)	15 (0.1)	4 (0.3)	2 (0.5)	0 (0.0)	2 (0.4)	0.145
Acute Kidney Injury (%)	20 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	0.483
Deep Venous Thrombosis (%)	43 (0.4)	5 (0.3)	0 (0.0)	1 (0.7)	1 (0.2)	0.683
Pulmonary Embolism (%)	3 (0.02)	0 (0.0)	0 (0.0)	0 (0.0)	0	0.959
Cardiac Arrest (%)	1 (0.01)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	0.010
Septic Arthritis (%)	5 (0.04)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.901
Post-Operative Opioid Prescription- within 90 days from surgery, %	3939 (32.5)	466 (31.6)	135 (31.5)	46 (30.5)	159 (31.8)	0.911
Post-Operative Opioid Prescription- 90 days after surgery, %	1936 (16.0)	470 (31.8)	137 (31.9)	46 (30.5)	162 (32.4)	<0.001
Conversion to THA within 2 Years (%)	393 (3.2)	49 (3.3)	16 (3.7)	5 (3.3)	10 (2.0)	0.590
Revision Within 2 Years	540 (4.5)	50 (3.4)	11 (2.6)	6 (4.0)	14 (2.8)	0.048

Table 2. Multivariate Logistic Regression for Patients Undergoing Any Arthroscopic Revision Procedure

	Odds Ratio (OR)	95% Confidence Interval (95% CI)	P-Value
Age	0.97	0.97 – 0.98	<0.001
Male Gender	0.67	0.55– 0.82	<0.001
Obesity	1.31	1.09 – 1.57	0.003
Tobacco Use	1.24	1.03 – 1.49	0.022
CCI	1.06	0.99 – 1.14	0.070
Time From Diagnosis to Surgery			
<3 Months	1.00 (Reference)	N/A (Reference)	N/A (Reference)
3-6 Months	0.74	0.55 – 1.00	0.051
6-9 Months	0.56	0.30-1.02	0.058
9-12 Months	0.90	0.39-2.05	0.798
>12 Months	0.63	0.37-1.08	0.093

Table 3. Multivariate Logistic Regression for Patients Undergoing Conversion Total Hip Arthroplasty

	Odds Ratio (OR)	95% Confidence Interval (95% CI)	P-Value
Age	1.07	1.06-1.08	<0.001
Male Gender	0.69	0.55-0.85	0.001
Obesity	2.11	1.74-2.55	<0.001
Tobacco Use	1.68	1.38-2.04	<0.001
CCI	1.02	0.96-1.09	0.474
Time From Diagnosis to Surgery			
<3 Months	1.00 (Reference)	N/A (Reference)	N/A (Reference)
3-6 Months	1.08	0.78-1.45	0.641
6-9 Months	1.17	0.67-1.91	0.556
9-12 Months	0.95	0.33-2.17	0.916
>12 Months	0.63	0.31-1.13	0.153

Table 4. Multivariate Logistic Regression Assessing oplate use after 90 days from initial surgery

	Odds Ratio (OR)	95% Confidence Interval	P-value
Age	1.01	1.00-1.01	<0.001
Male Gender	0.77	0.70-0.85	<0.001
Obesity	1.39	1.27-1.53	<0.001
Tobacco Use	2.16	1.97-2.37	<0.001
CCI	1.21	1.17-1.25	<0.001
Pre-operative Oplate Use	2.47	1.89-3.21	<0.001
Time From Diagnosis to Surgery			
<3 Months	1.00 (Reference)	N/A (Reference)	N/A (Reference)
3-6 Months	2.65	2.34-3.01	<0.001
6-9 Months	2.62	2.11-3.26	<0.001
9-12 Months	2.47	1.71-3.56	<0.001
>12 Months	2.73	2.23-3.34	<0.001