

# Hip Arthroscopy: Risk Factors and Rate of Conversion to Total Hip Arthroplasty within 2 years after Hip Arthroscopy Utilizing a Large National Cohort of Commercially insured Patients

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# Disclosures

- One or more authors have something to disclose.
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# Introduction

- Despite the growing popularity of hip arthroscopy (HA) amongst surgeons and patients, the conversion rate of HA to total hip arthroplasty (THA) has been found to range from 4% to as high as 10%.<sup>1</sup> HA to THA conversion is associated with higher risks of prosthetic dislocation and THA revision.<sup>2</sup>
- Literature examining HA to THA conversion rate and/or risk factors of conversion utilizing a large, national database is scarce.
- Thus, the purpose of this study is to add to the literature by utilizing a large, national database to analyze rate and predictors of conversion to THA within 2 years after HA.

# Methods

**Design:** Retrospective Cohort Study

**Data Set:** 2013-2017 IBM MarketScan Commercial Claims Encounter database

**Cohorts:** 1) Femoroacetabular impingement (FAI) surgery, 2) Isolated debridement, 3) Isolated labral repair

- Patients aged 18 to 65 were required to have 2-years of continuous enrollment in the database.

**Statistical analysis:** Multivariable logistic regression, Kaplan-Meier test, and Chi-Square test

- Multivariable logistic regression with a primary outcome of conversion to THA was used to obtain odds ratios (OR) for the following covariates: patient age, gender, Deyo-Charlson Comorbidity Index (DCCI) score, HA procedure performed, and comorbidities such as obesity, smoking, and osteoarthritis.
- Kaplan-Meier tests estimated median time to conversion from HA to THA for each HA procedure. Univariable comparisons were made with log-rank tests.
- Chi-square tests compared rates of conversion between the three HA cohorts within each age group ( $\leq 40$ , 41-50,  $> 50$ ).

# Results

- 5,194 patients were identified (3,640 FAI surgery, 1,047 isolated debridement, 507 isolated labral repair).
- The debridement group had both the highest rate of HA to THA conversion (debridement: 12.51%, repair: 8.68%, FAI: 6.87%,  $p < 0.001$ ) and the shortest median time to conversion, in months (debridement: 10.13 months, repair: 10.50 months, FAI: 11.82 months, log-rank  $p = 0.018$ ).

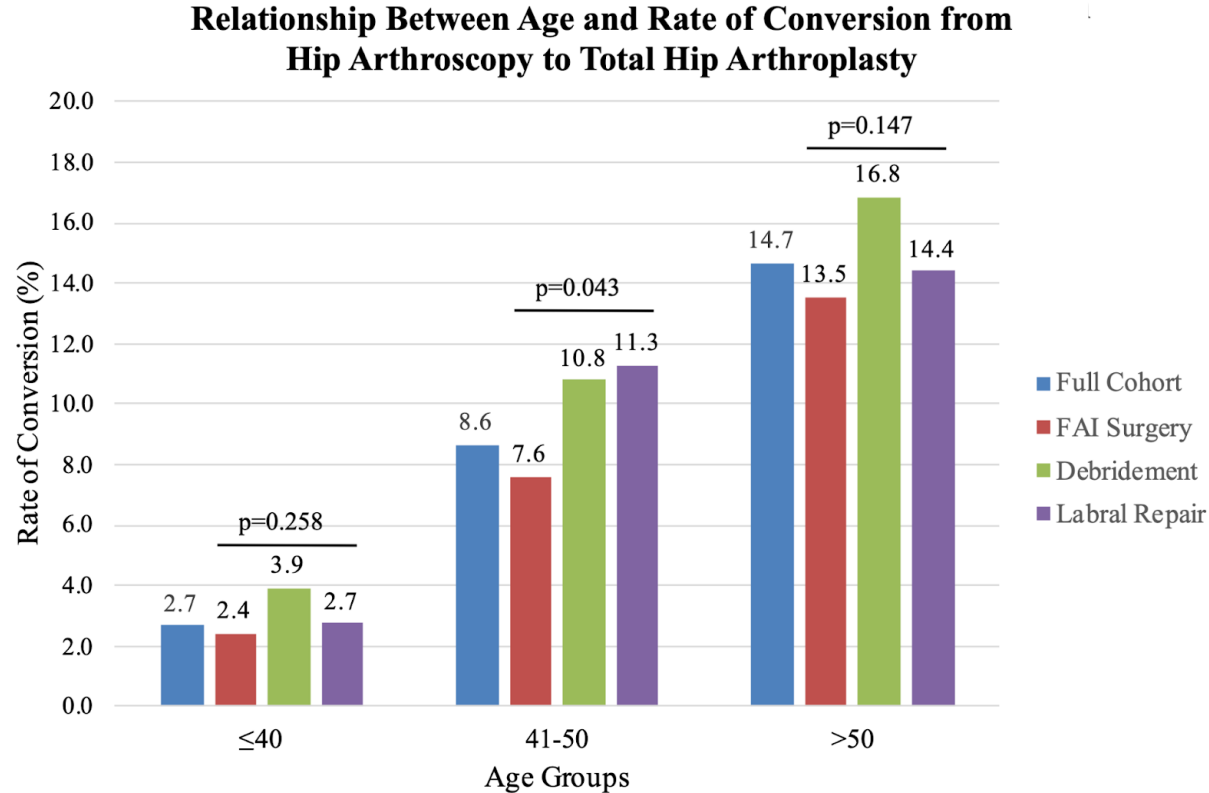
# Results

- On multivariable modeling, comorbidity of osteoarthritis increased risk for conversion (OR 3.43, 95% CI 2.73-4.30,  $p < 0.001$ ).
- Compared to patients who underwent FAI surgery, patients who underwent debridement had a higher odds of converting to THA (OR 1.37, 95% CI 1.08-1.74,  $p = 0.011$ ).
- Compared to the  $\leq 40$  age group, patients between 41-50 and over 50 are 3.25 and 6.11 times more likely to undergo conversion, respectively ( $p < 0.001$ )

n=5,174	Variable	Reference	OR	95% CI	p-value
<b>Age Group</b>	41-50	$\leq 40$	3.245	2.397 - 4.394	<b>&lt;.0001</b>
	>50	$\leq 40$	6.111	4.554 - 8.200	<b>&lt;.0001</b>
<b>Male</b>	Yes	No	0.819	0.650 - 1.031	0.0885
<b>Year</b>	2014	2013	1.059	0.826 - 1.358	0.652
	2015	2013	0.896	0.689 - 1.164	0.4106
<b>Region</b>	Northeast	West	0.876	0.652 - 1.178	0.3818
	North Central	West	0.809	0.604 - 1.083	0.155
	South	West	0.758	0.572 - 1.005	0.0539
<b>Plan Type</b>	HD/CDHP	EPO/PPO	1.037	0.771 - 1.394	0.812
	HMO/POS	EPO/PPO	0.786	0.585 - 1.056	0.1104
	Other	EPO/PPO	1.000	0.559 - 1.788	0.9987
<b>DCCI</b>	1+	0	0.765	0.489 - 1.198	0.2417
<b>Obesity</b>	Yes	No	1.718	0.984 - 3.001	0.0571
<b>Smoking</b>	Yes	No	1.511	0.907 - 2.515	0.1126
<b>Osteoarthritis</b>	Yes	No	3.426	2.729 - 4.302	<b>&lt;.0001</b>
<b>Procedure</b>	Debridement	FAI Surgery	1.369	1.076 - 1.741	<b>0.0107</b>
	Labral Repair	FAI Surgery	1.234	0.866 - 1.759	0.2439

# Results

- Within the 41-50 age group, there was a significant difference in conversion rates between the FAI, debridement, and labral repair groups ( $p=0.043$ ), but no significant differences between the 3 cohorts were found for  $\leq 40$  or  $>50$  age groups.



# Conclusion

- HA debridement procedures have significantly higher rates of conversion to THA compared to labral repair or FAI surgery.
- The rate of 2-year conversion to THA following HA is very low (2.7%) for patients <40 years old, particularly for those undergoing labral repair and/or FAI surgery.
- Patients over age 50, especially those with a diagnosis of osteoarthritis, are much more likely to convert to THA within 2 years (14.7%).
- While there may be value in HA in the over 50 age group, patients should be counseled that HA may be a staging procedure for eventual THA.



# References

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