

Predictors of Failure Following Primary Hip Arthroscopy for Femoroacetabular Impingement: A Matched Cohort Analysis

Alexander Weber¹, MD

Benjamin Kuhns¹, MD

Gregory Cvetanovich¹, MD

Jennifer Alter¹, BS

Richard C. Mather III², MD, MBA,

Gift C. Ukwuani¹, MD,

Joshua David Harris³, MD, Shane J. Nho¹, MD, MS.

Rush University Medical Center, Chicago, Illinois, United States. ²Durham, NC, United States. ³Houston, TX, United States.



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Introduction and Purpose

- Cases of failure after hip arthroscopy for the treatment of FAI have been reported.
- Surgeons would benefit from knowing the many risks associated with failure after hip arthroscopy in order to improve patient outcomes and possibly prevent the need for revisions.
- **Purpose:** The aim of this study was to identify both patient-related and FAI-related factors affecting patient outcomes that would require a revision hip arthroscopy or conversion to total hip arthroplasty (THA) after hip arthroscopy for treatment of FAI.

Methods

Patient Selection

- Consecutive patients undergoing primary hip arthroscopy for FAI with a minimum of 2 year outcome were identified using our institutional hip registry between 1/2012 and 1/2014.
- **Inclusion criteria:** Revision arthroscopy or conversion to THA.

Cohort matching:

- 1:3 for revision hip arthroscopy or conversion THA patients to patients not requiring an additional operation respectively.
- Age, gender, and BMI.

Patients in these groups were compared based on demographic, preoperative, and postoperative clinical data including PROs: **HOS-ADL, HOS-SS, and mHHS.**

Results

- 12 (3%) out of 400 hip arthroscopy failed.
- 5 (1.3%) required a revision hip arthroscopy at an average of 1.2 ± 0.2 years and 7 patients (1.8%) converted to THA at an average of 1.56 ± 0.65 years.
- Of the 5 revisions: 2 were due to instability, 2 due to residual FAI, 1 for heterotopic ossification excision.
- 7 patients converted to THA due to degenerative arthritis.

There were no differences in FAI-related factors, such as preoperative or postoperative alpha angle or lateral center edge angle, Tonnis grade or joint space width, and no difference in patient-related factors such as preoperative or postoperative PROs, nor the magnitude of change.

Results

- Patients that converted to THA had significantly less preoperative joint space width (3.41 ± 0.76 mm vs. 4.41 ± 0.74 mm, $p=0.001$) and many of these patients had preoperative Tönnis grade 1 or higher (71% vs. 16% , $p=0.01$).
- There were no differences in preoperative or postoperative alpha angle, lateral center edge angle, rates of labral repair or capsular closure between the THA cohort and control group.

Conclusion

- Patients may fail after FAI treatment requiring revision or convert to THA.
- Decreased joint space and Tonnis grade greater than 1 are risks factors for early conversion to THA.