Midterm Outcomes of Primary Hip Arthroscopy in Athletes Over the Age of 40: A Propensity-Matched Controlled Study

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Disclosures

I (and/or my co-authors) have something to disclose.

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Background:
Femoroacetabular Impingement in Athletes

- FAI is prevalent amongst athletes
- Hip arthroscopy over 40 can be controversial
- Conversion to arthroplasty ranging from 0 to 30% in older populations
- Age alone should not determine surgical candidacy
- Midterm outcomes of “master athletes” have been understudied

Ten-Year Survivorship, Outcomes, and Sports Participation in Athletes After Primary Hip Arthroscopy for Femoroacetabular Impingement Syndrome

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Patients Aged 40 Years and Older Demonstrate Durable and Comparable Results to Patients Aged Less Than 40 Years After Primary Hip Arthroscopy for Femoroacetabular Impingement Syndrome: A Propensity Matched Study at Minimum 10-Year Follow-Up

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Exercise Attenuates the Major Hallmarks of Aging

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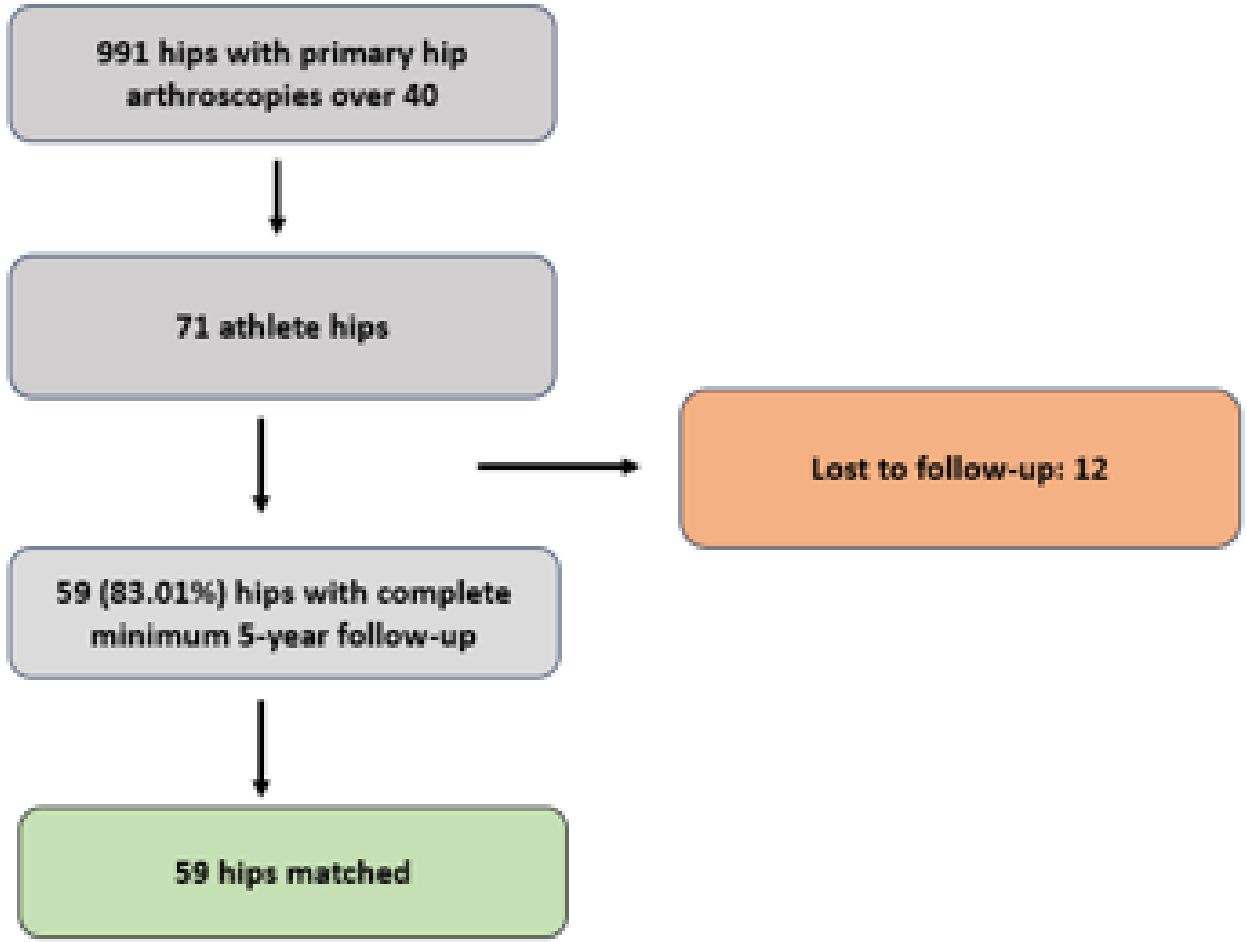
Purpose

- **Report** minimum five-year outcomes of MAs after primary hip arthroscopy and compare their results to a matched nonathlete (NA) control group.
- **Null Hypothesis:** MAs will demonstrate no difference in outcomes as compared to the NA control group

Methods: Patient Selection

- **Exclusion/Inclusion Criteria**
  - Primary hip arthroscopy
    - FAI and labral tears
  - Age at surgery: ≤40
  - Sports participation within last year
  - Minimum 5-year follow-up
  - LCEA < 18
  - Tonnis grade < 1
- **Matching Criteria (1:1 Ratio)**
  - Age
  - Sex
  - BMI
  - Acetabular Outerbridge Score



Results: Statistical Analysis

- **Similar demographics**
- **Similar interoperative procedures**
  - Capsular repair

Table 1. Demographic Information for Master Athletes and Nonathletes

	Master Athletes	Nonathletes	P Value
Total Eligible*	59	190	
Total Matched*	59	59	
Follow-up time (mo.) †	86.63 ± 27.71	77.71 ± 42.82	0.19
Age at surgery (yr.) †	48.40 ± 5.80	48.66 ± 6.14	0.81
BMI (kg/m^2) †	26.28 ± 4.28	26.70 ± 3.77	0.44
Female‡	29 (49.15%)	26 (44.07%)	0.58

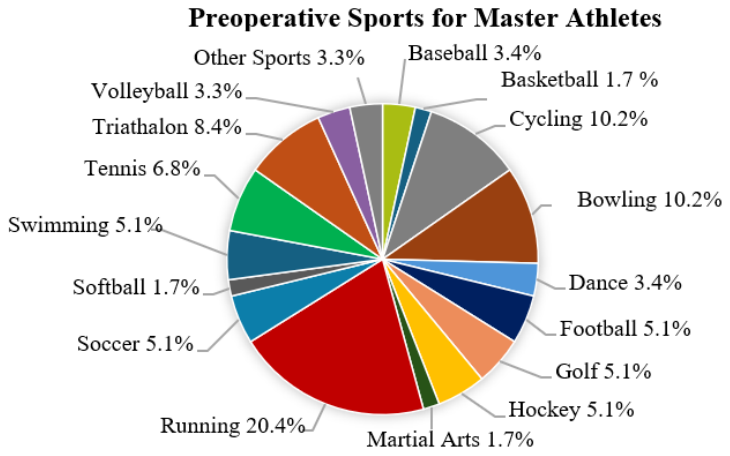


Table 2. Intraoperative Procedures

	Master Athletes	Nonathletes	P Value
Labral Treatment			
Repair	21 (35.60%)	22 (37.29%)	0.85
Selective	13 (22.03%)	24 (40.68%)	0.85
Debridement			
Reconstruction	7 (11.86%)	3 (5.08%)	0.32
Capsular Treatment			**<0.01**
Repair	28 (47.46%)	13 (22.03%)	
Release	31 (50.85%)	46 (77.97%)	
Iliopsoas Fractional	18 (30.51%)	17 (28.81%)	0.89
Lengthening			
Acetabulum	47 (79.66%)	47 (79.66%)	>0.99
Femoral Neck	55 (93.22%)	53 (89.83%)	0.74
Ligamentum Teres	13 (22.03%)	23 (38.98%)	**<0.05**
Debridement			
Iliopsoas Fractional	18 (30.51%)	17 (28.81%)	0.89
Lengthening			
Loose Body Removal	10 (16.95%)	12 (20.34%)	0.64
Microfracture			
Acetabular	6 (10.17%)	4 (6.78%)	0.74
Femoral	4 (6.78%)	0 (0%)	0.12
Notchplasty	8 (13.56%)	5 (8.47%)	0.56

Results: Patient Characteristics

- **Significant improvement in both groups**
- **Preoperative PROs:**
  - MA group started with significantly higher mHHS, NAHS, and HOS-SSS
- **Postoperative PROs:**
  - MA group met higher scores for mHHS, NAHS, and HOS-SSS
  - MA group had lower VAS
  - Equivalent satisfaction score
- **Comparable magnitude of improvement**
- **Similar rate of secondary hip arthroscopy**
  - MA: 1.59%
  - NA: 5.08%
- **Significant differences in arthroplasty rates**
  - MA: 5.08%
  - NA: 28.81%

Table 3. Patient-Reported Outcomes

	Master Athletes	Nonathletes	P Value
mHHS			
Preoperative (n = 59, n = 59)	65.88 ± 15.36	53.85 ± 14.53	**<0.01**
Postoperative (n = 56, n = 42)	87.39 ± 16.49	78.26 ± 19.43	**<0.05**
Preop vs Postop P Value	**<0.01**	**<0.01**	
Δ (n = 56, n = 42)	21.74 ± 19.65	23.86 ± 16.84	0.81
NAHS			
Preoperative (n = 59, n = 59)	62.92 ± 16.71	50.06 ± 15.91	**<0.01**
Postoperative (n = 56, n = 42)	86.88 ± 13.27	78.27 ± 19.29	**<0.05**
Preop vs Postop P Value	**<0.01**	**<0.01**	
Δ (n = 59, n = 42)	23.86 ± 16.76	29.48 ± 14.82	0.09
HOS-SSS			
Preoperative (n = 58, n = 53)	41.01 ± 22.60	30.29 ± 23.58	**<0.05**
Postoperative (n = 51, n = 34)	74.97 ± 25.25	59.61 ± 32.59	**<0.05**
Preop vs. Postop P Value	**<0.01**	**<0.01**	
Δ (n = 51, n = 34)	33.44 ± 28.31	36.39 ± 28.88	0.75
VAS			
Preoperative (n = 59, n = 59)	5.09 ± 1.94	5.86 ± 2.13	0.09
Postoperative (n = 56, n= 43)	1.97 ± 2.36	3.00 ± 2.20	**<0.01**
Preop vs. Postop P Value	**<0.01**	**<0.01**	
Δ (n = 56, n = 43)	-3.12 ± 2.73	-2.88 ± 2.68	0.52
Satisfaction (n = 56, n = 43)	8.71 ± 2.01	7.84 ± 2.58	0.06

Table 5. Secondary Surgeries and Complications

	Master Athletes	Nonathletes	P Value
Revision Arthroscopy*	1 (1.59%)	3 (5.08%)	0.62
Time to Second Time to Secondary Procedure (mo.) †	161.87	21.18 ± 11.14	NA
Conversion to arthroplasty*	3 (5.08%)	17 (28.81%)	**<0.01**
Time to arthroplasty (mo.) †	28.79 ± 5.37	33.99 ± 5.82	0.75
Complication Rate*	3 (5.08%)	2 (3.39%)	<0.99

Conclusion

- MAs demonstrated favorable outcomes after primary hip arthroscopy at five-year minimum follow-up.
- When compared with a propensity matched control group of NA patients, MAs had better preoperative and postoperative PROs scores. However, the magnitude of improvements in PROs was comparable between the groups.
- Furthermore, MAs met clinically meaningful thresholds at higher rates and had higher arthroplasty-free survivorship when compared to the NA group.

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