

Failure to Achieve Threshold Scores on Patient-Reported Outcome Measures Within 1 Year Has a Predictive Risk of Subsequent Hip Surgery Within 5 Years of Primary Hip Arthroscopy

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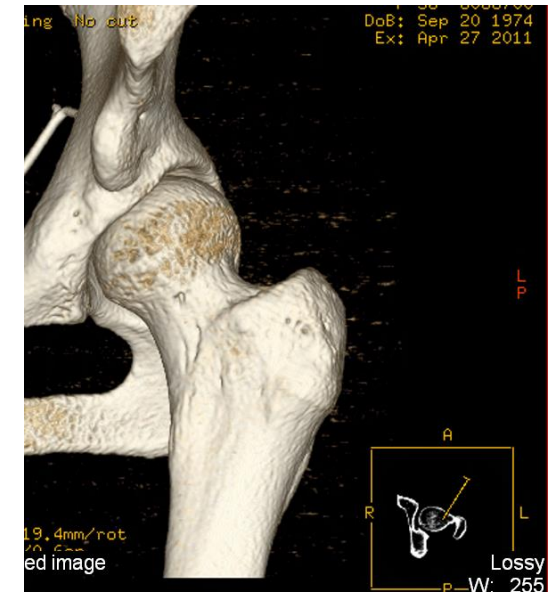
Introduction

- Little data exist on whether failure to achieve a threshold score (minimal clinically important difference [MCID] or substantial clinical benefit [SCB]) in the short term after hip arthroscopy predicts the risk of future hip surgery
- Aim: To determine if failure to achieve the **MCID** or **SCB** within **1 year** of hip arthroscopy can be considered a **risk factor** for **repeat** surgery within 5 years of primary hip arthroscopy



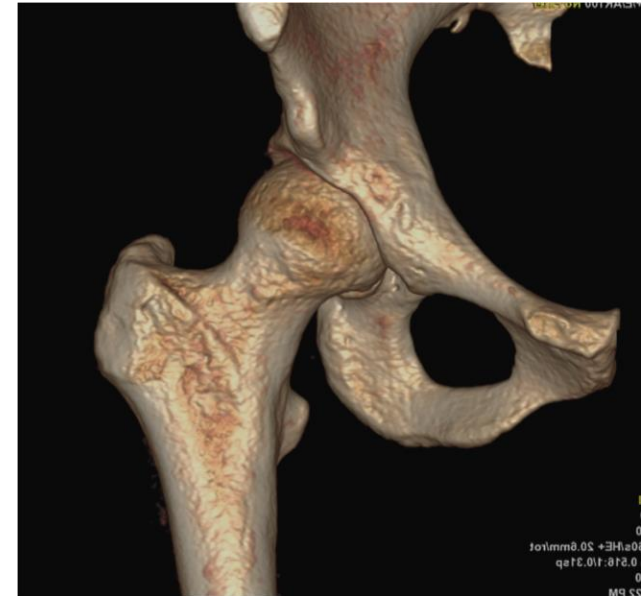
Materials and Methods

- **A retrospective study**
- **Inclusion criteria**
 - Patients underwent hip arthroscopy from our hospital from 2006 to 2018
- **Exclusion criteria**
 - Prior ipsilateral hip surgery
 - History of traumatic ipsilateral hip injury
 - Radiographically confirmed hip osteoarthritis (Tonnis grade >1)

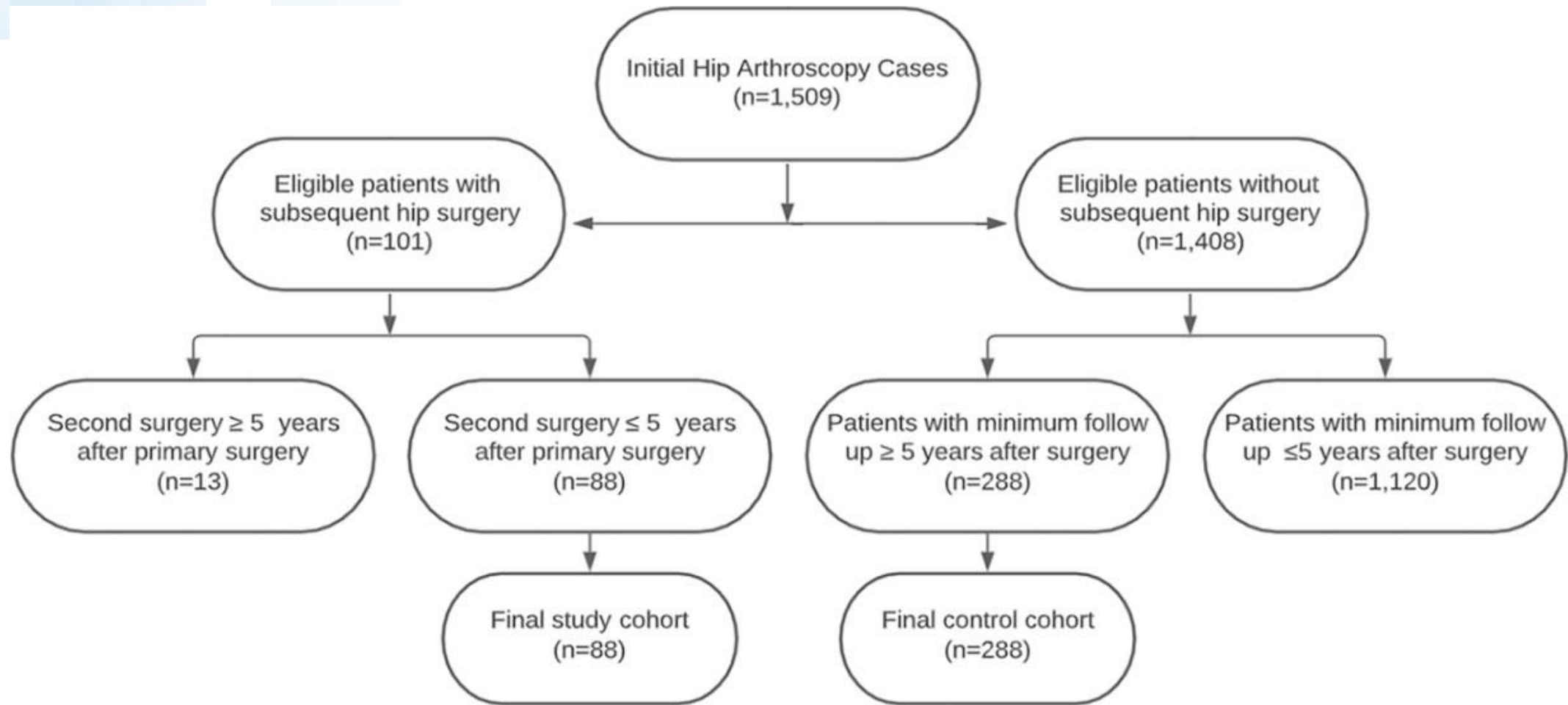


Materials and Methods

- Four PROMs were collected pre-op and within 1 year of hip arthroscopy:
 - **mHSS/HOS-ADL/HOS-Sports/iHOT-33**
- **Chart review was completed to identify patients**
 - (1) who underwent subsequent ipsilateral hip surgery within 5 years
 - (2) who were greater than 5 years removed from hip arthroscopy.



Results



Results: Demographic data

	Study Cohort (n = 88)	Control Cohort (n = 288)	<i>P</i>
Sex			
Male	37 (42.0)	138 (47.9)	.399
Female	51 (58.0)	150 (52.1)	
Age, y	33.1 (18-59)	32.8 (18-57)	.804
Baseline PROMs			
HHS	59.6 (12.1-95.7)	63.1 (19.8-100)	.062
HOS-ADL	69.7 (13.2-97.1)	72.7 (20.6-100)	.206
HOS-Sports	48.7 (0.00-100)	48.9 (0.00-100)	.937
iHOT-33	37.7 (2.2-78.6)	38.5 (1.68-90.1)	.745
Preoperative surgical indications			
Labral tear	73 (83.0)	246 (85.4)	.588
Pincer lesion	25 (28.4)	91 (31.6)	.567
Cam lesion	65 (73.9)	231 (80.2)	.23
Arthroscopic procedures			
Labral repair	60 (68.2)	241 (83.7)	.005
Labral debridement	16 (18.2)	43 (14.9)	.485
Cam decompression	68 (77.3)	265 (92.0)	.003
Rim decompression	28 (31.8)	117 (40.6)	.129

Results: Postoperative Score

- The study cohort had **significantly ($P < .001$) lower** scores on **all** post-op PROMs, and a significantly ($P < .001$) smaller percentage of the study cohort met the MCID and SCB.

	Study Cohort (n = 88)	Control Cohort (n = 288)	<i>P</i>
Postoperative PROM score			
mHHS	62.1 (14.3-95.7)	80.1 (29.7-100.1)	<.001
HOS-ADL	72.7 (17.7-100)	87.7 (23.2-100)	<.001
HOS-Sports	46.6 (0.00-100)	66.8 (0.00-100)	<.001
iHOT-33	46.9 (0.43-94.7)	68.5 (9.15-99.9)	<.001
Achieved MCID ^b			
mHHS	34.9 (30/86)	70.5 (196/278)	<.001
HOS-ADL	36.0 (31/86)	64.8 (184/284)	<.001
HOS-Sports	25.0 (21/84)	53.3 (146/274)	<.001
iHOT-33	40.6 (26/64)	74.8 (166/222)	<.001
Achieved SCB ^b			
mHHS	17.4 (15/86)	41.4 (115/278)	<.001
HOS-ADL	34.9 (30/86)	60.2 (171/284)	<.001
HOS-Sports	11.9 (10/84)	33.6 (92/274)	<.001
iHOT-33	20.3 (13/64)	55.4 (123/222)	<.001

Results: Multivariable regression

(A) Subsequent Surgery Risk Based Off Not Achieving the MCID or SCB

	OR (95% CI)	<i>P</i>
MCID		
mHHS	5.39 (3.14-9.25)	<.001
HOS-ADL	5.20 (2.89-9.36)	<.001
HOS-Sports	4.02 (2.23-7.24)	<.001
iHOT-33	4.78 (2.60-8.77)	<.001
SCB		
mHHS	4.11 (2.19-7.72)	<.001
HOS-ADL	4.69 (2.58-8.51)	<.001
HOS-Sports	4.57 (2.14-9.74)	<.001
iHOT-33	5.20 (2.65-10.2)	<.001

- Not achieving the MCID or SCB on each of the PROMs is an **independent** risk factor for repeat hip surgery

(B) Cumulative Subsequent Surgery Risk for Not Achieving the MCID or SCB on Multiple PROMs

	OR (95% CI)	<i>P</i>
MCID	1.68 (1.42-1.98)	<.001
SCB	1.63 (1.35-1.97)	<.001

Discussion

Our study

- Patients who underwent subsequent surgery had significantly lower scores on all postoperative PROMs compared with those who did not undergo a subsequent surgery
- Failure to meet the threshold score for the SCB on iHOT-33 was associated with the largest increase in risk for subsequent surgery.




Discussion

- Several studies demonstrated that preoperative PROMs carry prognostic value for post-op outcome
- Rosinsky et al. is first to publish data supporting the concept of failure to achieve the threshold score correlates with rates of subsequent hip surgery
- Our study has expanded the discussion to include additional PROMs and included a regression analysis

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**Does failure to meet threshold scores for mHHS
and iHOT-12 correlate to secondary operations
following hip arthroscopy?**

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Benjamin G. Domb ^{1,3*}

Conclusions

- The current study show that the MCID and SCB thresholds for the mHHS, HOS-Sports, HOS-ADL, and iHOT-33 are all predictive measures of subsequent surgery risk for patients after primary hip arthroscopy.



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